		- - -						
	Activity	Schedule / When	Outantity	Who Datioinate	Who is Decrecible	Locally Available Motoriol and Toolo	Other Tools and	Comment /
		Afternoon 11	Committee' 10 Members	ו מו הוכוחמים				Eveny villager will
ttee	Election	June 2003	All the Villagers	Whole Village	Village Headman			get a piece of land.
Sons	struction	13 - 19 June	60 m / day (240 m in	20 men x 4 days	Village Headman,	rnaugas, rroes, roies, Strings, Bamboos and	2 Picks, 2 Wheelbarrows,	Funeral, Hard Rocks
onst	ruction	2003 (+ days) 13 - 19 June 2003 (4 days)		20 men x 4 days	Commutee Village Headman, Committee	Filatigas, rtoes, rores, Strings, Bamboos and	2 Shovels and 2 Sickles 2 Picks, 2 Wheelbarrows, 2 Shovels and 2 Sickles	and Diseases
lear	ing	20 - 23 June 2003 (3 days)	0.8 ha / day / whole group	Whole Village	Village Headman, Committee	Hoes and Phangas		Training on Planting, Construction,
		25 - 30 June 2003 (5 days)	0.25 acre / day / whole group	Whole Village	Village Headman, Committee	Hoes	2 Picks	Irrigatrion and Manure Application
<u></u> g tl	ne Land	1 - 2 July 2003 (2 days)	0.4 ha / day / whole group	Whole Village	Village Headman, Committee	Hoes		
nst	ruction	7 - 9 July 2003 (3 days)	20 beds / day (1.2 x 3 m)	Whole Village	Village Headman, Committee	Measuring Tape, Hocs, Strings and Pegs	2 Wheelbarrow	
<	pplication	11 - 12 July 2003 (2 days)	20 beds / day (1.2 x 3 m)	Whole Village	Village Headman, Committee	Sacks and Tins buckets		
<u>ь</u> п		14 July 2003	Once	Whole Village	Village Headman, Committec	Measuring Tape and Hoes		
X	eeting	Early August 2003		Whole Village	Village Headman, Committee			

4-1 Action Plan of Duwu Club (1-2), Mpenu EPA, Lilongwe East RDP, Lilongwe ADD (June 11, 2003)

4-2 Participants of Planning Workshop, Duwu Club (1-2), Mpenu EPA, Lilongwe East RDP, Lilongwe ADD (June 11, 2003)

°N N	Name	Sex	Age	Acreage	Name	Sex	Age	Acreage
-	Y.H Nkhuta (M)	Μ	51	0.5 acre	Madalitso Gandali	Ŀ.	Unknown	No land
7	Kayeseni Pafwala	Σ	37	0.5 acre	Hallet Chadika	íт.	24	No land
m	Folomani Ziliyo	Σ	47	0.5 acre	Mchokeranji Givitoni	щ	20	No land
4	Criston Petulo	Σ	23	0.5 acre	Msatha Jailosi	Ц	20	1 acre
Ś	Takumana Chadika	Σ	26	0.5 acre	Beatrice Zungulira	ţırı	60	No land
9	Biliamu Kalumba	Σ	30	0.5 acre	Lantile Kammange	ц	22	No land
7	Joviala Kathetheka	Σ	30	0.5 acre	Lefitina Boita	ц	Unknown	No land
~	Nyamulan Giviton	Σ	21	0.5 acre	Martha Msinje	ſц	Unknown	No land
σ	Zomzija Sauzande	Σ	20	0.5 acre	Mzatikhumba Mzeka	ц	59	No land
10	Saluyavuka Chagwira	Σ	54	0.5 acre	Sweyi Mnesa	ц	Unknown	2 acres
Ξ	Criford Kapichila	Σ	32	0.5 acre	Mwangulema Chidowo	Ľ4	Unknown	No land
12	Levison Kalumba	Σ	29	0.5 acre	Lizineti Chalupira	ĹĿ,	20	0.5 acre
13	Ozache Chindime	Σ	21	No land	Mercy Geresoni	íц,	49	0.5 acre
14	Mtsinje Kanguwe	Σ	Unknown	No land	Ochibinazi Kaziputa	ĥæ,	Unknown	l acre
15					Mdadzauyipa Masanda	ĹĿ	Unknown	No land
16					Cecilia Mwanjira	í.	21	No land
17					Enita Joviara	ц	32	No land
8					Zelifa Jakison	Ĺ	30	No land
19					Mthalu Chinkheni	ĹŢ.	Unknown	1 acre
20					Salome Laison	Έ	23	No land
21					Muthawa Mdzeka	ţL	32	0.5 acre
22					Mwatha Kafumbwa	أستم	34	0.4 acre

		Schedule /		Who	Who is	Locally Available	Other Tools and	Comment /
ю́	Activity	When	Quantity	Participate	Responsible	Material and Tools	Material	Remarks
*	Measuring line of canal	From June 19 to June 27, 2003	180m (finished by June 19) +200m	Farmers	AEDO	Strings, Hoes, Pangas, Threshers, Sickles, pegs	Land level, Strings, Measuring tape	
2	Digging canal	3 weeks from June 23, 2003	70m /week	Farmers	AEDO	Hoes, Axes, Pangas, Sickles	Picks, Shovels, Hammer, Gumboots, Wheelbarrow	
з	Closing water	June 23, 2003		Farmers	AEDO	Hoes, Sacks, Stones, Pegs	Shovels, Wheelbarrow, Sacks	
4	Clearing site	From July 1 to July 5, 2003	5 ha	Farmers	AEDO	Hoes, Axes, Sickles	Threshers, Hoes	
ъ	Ploughing	From July 5 to July 12, 2003 (1 week)	5 ha	Farmers	AEDO	Hoes, Axes, Sickles	Gumboots	When sombody is sick or there is
9	Leveling	From July 14 to July 15, 2003 (2 days)	5 ha	Farmers	AEDO	Hoes, Axes, Sickles		funeral, they cannot work.
7	Bed construction	From July 16 to July 18, 2003 (3 days)	5 ha	Farmers	AEDO	Strings	Measuring tape	
8	Digging planting station	July 19, 2003 (1 day)	5 ha	Farmers	AEDO	Hoes	I	
6	Manure application	July 21, 2003 (1 day)	5 ha	Farmers	AEDO	Plates, Sacks, Buckets, Baskets	Wheelbarrow, Shovels	
10	Planting	July 22, 2003 (1 day)	5 ha	Farmers	AEDO	Small hoes, Plates		

4-3 Action Plan of Chimphonongo Club (1-4), Mpenu EPA, Lilongwe East RDP, Lilongwe ADD (June 24, 2003)

Γ					ſ	Position at						Position at
No.	Name	Sex	Age	Village Name	Acreage	Committee	Name	Sex	Age	Village Name	Acreage	Committee
_	Jastin Jekem	Μ	20	Chilimanguwo	0.25	Secretary	Rahabe William	<u>г</u> т.	21	Nkhwizi Kunsi	0.25	Chairman's Wife
7	Lukasi Zikati	Σ	30	Mitima	No land		Titani Yuwiti	ĹĿ.,	20	Madula	No land	
m	V.H Chiphonongo	Σ	99	Chiphonongo	0.3	Member (V.H.)	Velina Notice	11	22	Madula	No land	
4	V.H Mambula	Σ	27	Madula	No land	Member	Edesi Kasiya	<u>1</u>	20	Chiphonongo	No land	
S	Chimkapulo	Σ	39	Chilima cha Nsalu	0.2	Member	Tchola Kajola	ír.	48	Madula	No land	
9	K. Chiwala	Σ	23	Chilima cha Nguwo	0.15	Member	Esnati Banda	ĹŢ	20	Chiphonongo	No land	
7	Musa Ching'ona	Σ	52	Mikundi	No land		Grace Kang'a	لئا	43	Chiphonongo	No land	
×	Lazaro Saopa	Σ	18	Nkhwizi	No land		Kondwerani Josamu	Щ	20	Nkhwizi Kunsi	No land	
6	Chibwezeni Folo	Σ	20	Madula	0.15		Delekena Ndemo	щ	51	Chiphonongo	No land	
10	Chalimba Jekenu	Σ	39	Chilimanguwo	0.3		Sisiliya Lameck	щ	21	Chiphonongo	0.15	
Ξ	Wilimu Manso	Σ	33	Chilima cha Nsalu	0.5	Chairman	Bitelesi Anodi	Ľ,	23	Chiphonongo	No land	
12	Lafelo Nkango	Σ	36	Chilima cha Nguwo	0.3	Member	Enita Kondwerani	ц	24	Chiphonongo	0.2	
E	Mlauzi Moyenda	Σ	24	Madula	0.18	Member	Khuma Itoni	щ	38	Madula	No land	
14	Bakison Thepepepa	Σ	26	Chiphonongo	No land		Dina Chimombo	щ	52	Madula	No land	
15	Wilard Ayiton	Σ	17	Madula	No land		Mzapezanji Wilisoni	í۳	24	Chilima	No land	
16	Mulawuzi Ganizani	Σ	20	Chiphangu	No land		Sala Chigayo	۴	21	Chilimansaru	No land	
17	Bulino Davite	Σ	31	Chiphangu	No land		•					
×	Kapinga Mayilosi	Σ	49	Chiphonongo	No land							
19	Gevinala Jombo	Σ	39	Mandula	No land							
20	Gabiyele Kagulo	Σ	18	Chiphangu	No land				·			
21	Emanuelo Chikombe	Σ	24	Kachisi	No land		-					
22	Bikitoni Kango	Σ	40	Chilima cha Nguwo	0.25	Member						
23	Samuel Novisi	Σ	16	Chiphangu	No land							
24	Stanly Bester	Σ	51	Masotuzu	0.3							
25	V.H Chilimanguwo	Σ	73	Chilima	No land							
26	Lenard Chithambo	Σ	54	Kumikundi	No land							
27	V.H Chilimansaru	X	53	Chilima	0.2							

4-4 Participants of Planning Workshop, Chimphonongo Club (1-4), Mpenu EPA, Lilongwe East RDP, Lilongwe ADD (June 24, 2003)

				Who	Who is	Locally Available	Other Tools and	
ů	Activity	Quantity	Schedule	participates	Responsible	Material and Tools	Material	Possible Problem
-	Committee formation	10 committee members	July 3, 2003	40 beneficiaries	Village headman and AEDO	Poles		
2	Committee training	one day	July 7, 2003	40 beneficiaries	Village headman and AEDO			
3	Water closure		July 11, 2003	40 beneficiaries	Village headman and AEDO			
4	Weir construction		July 11, 2003	40 beneficiaries	Village headman and AEDO			Door offendance
5	Canal construction	210m / continuing	July 11-18, 2003	40 beneficiaries	Village headman and AEDO			
9	Crearing the land	14 ha	July 21-24, 2003	40 beneficiaries	Village headman and AEDO			
L .	Plots-formation	14 ha	July 25, 2003	40 beneficiaries	Village headman and AEDO			
×	Tilling	l4 ha	July 26-30, 2003	40 beneficiaries	Village headman and AEDO			
6	Tour		July 31, 2003	20 beneficiaries	Village headman and AEDO			Aready existing sites (Mpenu EPA)
10	Planting	14 ha	August 1-7, 2003	40 beneficiaries	Village headman and AEDO			
Ξ	Weeding	14 ha	August 14-21, 2003	40 beneficiaries	Village headman and AEDO			

4–5 Action Plan of Chikhasu Club (2–1), Kanyama EPA, Dedza Hills RDP, Lilongwe ADD (July 1, 2003)

4-6 Participants of Planning Workshop, Chikhasu Club (2-1), Kanyama EPA, Dedza Hills RDP, Lilongwe ADD (July 1, 2003)

C N	Ncme	, U		Land in the potential			ú		Land in the potential	
.02		0ex	2 RC	aerea (acre)	VIIIage		26X	28C	aerea (acre)	Village
	Yosefe Sachokeka	М	30		Kumadzi	Nalekani Ganda	Ŀ	39	3	Kumadzi
2	Bingo Misideni	Σ	29	No land	Kumadzi	Namachinja Bandolosi	<u>د</u>	40	No land	Kumadzi
ŝ	Katidya Loviyala	Σ	42	No land	Kumadzi	Nasungani Vikitoni	<u>ب</u>	38	m	Kumadzi
4	Lsilodi Misideni	Σ	42	No land	Kumadzi	Adesi Filipo	<u>ن</u> ــ	25	No land	Kumadzi
ŝ	Yohane Kankhwale	Σ	75	7		MesiyaPepala	ы	22	No land	Mphale
9	Josephy Damaziyo	Σ	34		Kamkundi	Marita Mofati	۲	45	No land	Kasumbu
2	Makalani Katidya	Σ	31		Kumadzi	Nachinesi Chadaka	Ľ.	45	No land	Kumadzi
×	Pesani Kapusa	Σ	31	2	Lumwira	Lisineti Bokosi	<u>ب</u>	45	No land	Kumadzi
6	Namapesa Chriyenda	Σ	35		Kasumbu	Christina Lobiamu	[<u></u>	40	2	Kumadzi
10	Mudazionesta Bisimu	Σ	40	ŝ	Kumadzi	Lipoya Lobiam	ĹŦ.			Kumadzi
11	Paulo Folensi	Σ	45	3	Kumadzi		F			

						Locally Available		-
No	Activity	Schedule	Quantity	Who Participate	Who is Responsible	Material and Tools	Other Tools and Material	Comment / Remarks
	Committee Formation	8 AM 16 June 2003	10 Committee Members	100 Beneficiaries Expected	Group Village Headman			
2	Training of Committee Members	20 June 2003	One Day / 10 Committee Members	AEDO, 10 Committee Members	AEDC		Books and Pens	
e	Plot Allocation	24 - 31 June 2003	5 acre and half	100 Beneficiaries and AEDO	Committee Chairman, Village Headmen and AEDO			Refusal of the Owner of the Land / Garden
4	Weir Construction	24 June - 15 July			Committee Chairman,			Shortage of People /
2	Canal Construction	2003 (3 weeks)	III DC7	15 VIIIagers / day	Village Headmen and AEDO			Poor Attendance / Funerals
9	Clearing the Land	16 - 17 July 2003 (2 days)	1.3 ha	100 Beneficiaries and AEDO	Committee Chairman, Village Headmen and AEDO		2 Wheelbarrows, 2 Shovels - 2	
7	Tilling	17 - 31 July 2003 (2 weeks)	1.3 ha	100 Beneficiaries and AEDO	Committee Chairman, Village Headmen and AEDO		Picks, 2 Hammers, 2	
8	Plot Layout	17 - 31 July 2003 (2 weeks)		100 Beneficiaries and AEDO	Committee Chairman, Village Headmen and AEDO	Hoes	Sickles, 2 Slashes and 2 Gum Boots	
6	Making Manure	24 - 31 July 2003 (1 week)	50 heaps of manure	100 Beneficiaries and AEDO	Committee Chairman, Village Headmen and AEDO		rented from Kanyama EPA	
10	Planting	1 - 7 August 2003 (1 week)		100 Beneficiaries and AEDO	Committee Chairman, Village Headmen and AEDO		<u> </u>	
11	Weeding	From 7 August 2003		100 Beneficiaries and AEDO	Committee Chairman, Village Headmen and AEDO			
12	Review Meeting	Early / Middle August 2003		100 Beneficiaries and AEDO	Committee Chairman, Village Headmen and AEDO			
then	n. Some kind of compe	nsation?						- -

4-7 Action Plan of Muchiku Club (2--2), Kanyama EPA, Dedza Hills RDP, Lilongwe ADD (June 12, 2003)

4-8 Participants of Planning Workshop, Mchiku Club (2-2), Kanyama EPA, Dedza Hills RDP, Lilongwe ADD (June 12, 2003)

<u>.</u>	Name	Sex	Age	Acreage in Mchiku	Acreage in Chikasu
1	Isilodi Misiteni (Village Headman Kumadzi)	М	40	No land	No land
5	Mtsunga Bandilosi (Village Headman Lumwilo)	М	Advanced	No land	No land
Э	Pesani Kapusa	Σ	31	Yes	Yes
4	Marita Daviko	Ĺ	Around 47	No land	No land
5	Florence Mateyo	Ĺ	21	0.02 ha	No land
9	Ana Justin	Ĺ	25	No land	No land
~	Namasi Gilibati	Ч	Unknown	No land	0.1 ha
8	Lainesi Zulu	<u>ت</u>	Over 60	Yes (Canal)	No land
6	Solophina Dakwa	۲L,	25	No land	No land
0	Napeta Dalikesi	ц	Unknown	No land	No land
Ξ	Filomina Dalikesi	<u>ل</u> تا	Over 30	No land	No land
12					
3					
14					
15					

							- - -	
No.	. Activity	Quantity	Schedule	wno participates	Who is Responsible	Locally Available Material and Tools	Uther 1 0015 and Material	Possible Problem
-	Committee formation	10 members	28th July 2003	40 members	Village headman and AEDO		Pen and paper	
5	Leadership training	10 members	29th July 2003	AEDO and leaders	Village headman		Pen and paper	
3	Weir construction	40 members	30th July 2003	40 members	Village headman and AEDO	Poles, grass, clay soil, pegs	Pen and paper	
4	Canal alignment	40 members	30th July 2003	40 members	Village headman and AEDO			
5	Canal construction	40 members	30th t0 31st July 2003	40 members	Village headman and AEDO	Hoes		
9	Land clearing	40 members	2nd August 2003	40 members	Village headman and AEDO	Hoes		
7	Plot allocation	40 members	4th to 9th August 2003 (1week)	40 members	Village headman and AEDO	Hoes		
∞	Tilling and levelling	40 members	5th to 9th August 2003 (1week)	40 members	Village headman and AEDO	Hoes		
6	Making ridges	40 members	6th to 9th August 2003 (1week)	40 members	Village headman and AEDO	Hoes		
10	Planting	40 members	10th to 15th August 2003	40 members	Village headman and AEDO			

4-9 Action Plan of Livizi Club (2-3), Kanyama EPA, Dedza Hills RDP, Lilongwe ADD (July 24, 2003)

4–10 Participants of Planning Workshop, Livizi Club (2–3), Kanyama EPA, Dedza Hills RDP, Lilongwe ADD (July 24, 2003)

				Land in the					Land in the	
Na	am	S S	Δue	potential	Docition	Name	202	A 20	potential	Decition
)	Ś	280	aerea			κu D	۵ ۲	aerea	
				(acre)					(acre)	
GVH Nduv	va	Σ	60	l acre	GVH	Merita Ankatamba	F	65	No land	
Goliati Njo	nvu	Σ	56	2 acre		Lesineti Lambulani	ц	25	No land	
Lawrence	Watson	Σ	35	1.5 acre		Nalisafu Jola	Ц	56	1 acre	
Pafmoti Lo	owe	Σ	52	No land		Abeteyana Jola	ĹŢ	45	1 acre	
Chimtali S	auzande	Σ	45	2 acre		Nelesi Fadisoni	ц	19	l acre	
Lambulani	i Nsanjula	Σ	53	No land		Ayelema Mbuzi	ц	35	0.5 acre	
Yohane Ja	mu	Σ	34	No land		Namanje Kambalame	Ц	60	No land	
Lino Chiw	'aya	Σ	45	l acre		Agness Malawulo	Ц	28	1 acre	
Unyolo Vi	elentino	Σ	44	No land		namada Mweziukawala	Į.	28	No land	
Siporonti	Malioni	Σ	19	No land		Selina Kandakena	Ц	44	0.5 acre	
Pepala Jaf	îeti	Σ	55	No land		Alina Laston	ĹĿ	30	No land	
Lusitaliko	Mbozi	Σ	45	No land		Alihanga Lotiyala	μ.	60	l acre	

		_													
		Comment / Remarks				Galley Erosion. Permission from District Road Authority to have canal cross the road.						2			
	Other Tools and	Material		Books and Pens	Magic Pens, Pens, Flip Charts and Notebooks	2 Shovels, 2 Picks, 2 Wheelbarrows, 2 Axes to be rented from EPA	Sacks (Need to be purchased by farmers)				2 Rakes to be rented from EPA				
	Locally Available Material and	Tools	Hoes, Phangas and Pegs	Paper and Pens		Hocs and Phangas	Sand, Sisal, Poles, Bamboo and Cray Soil			Hoes, Phangas and Pegs	1	Seeds	Hoes, Phangas and	Pegs	-
		Who is Responsible	Committee, Four Village Headmen and AEDO	Four Village Headmen	AEDC and AEDO	Two Committee Leaders	and Four Village Headmen		Committee, Four Village Headmen and AEDO	Committee, Four Village Headmen and AEDO	Committee, Four Village Headmen and AEDO	Committee, Four Village Headmen and AEDO	Committee, Four Village Headmen and AEDO	Committee, Four Village Headmen and AEDO	Committee, Four Village Headmen and AEDO
		Who Participate	65 Farmers + AEDO	Villagers of Four Villages (Bisaliyele, Kauya, Phulusa I and Phulusa)	oup Village Headman and	8 person / day x 5 m /	person = 40 m / day	18 Farmers	65 Farmers	65 Farmers	65 Farmers	65 Farmers	65 Farmers	65 Farmers	65 Farmers
		Quantity	0.04 ha / person	11 Committee Members	11 Committee Members, Gr Four Village Headmen	100 m + 90 m + 500 m (Extension will be finalized after they finish 290 m.)	7 m length x 1 m height and 5 m length x 1 m height		0.04 ha / person x (15 + 50) [50 : Across the Road]	2.6 ha					
		Schedule	16 - 17 June 2003	16 - 17 June 2003	30 June 2003	18 June - 8 July 2003 (3 weeks)	18 June - 1 July 2003	By 2nd week of July 2003	20 June - 3 July 2003 (2 weeks)	20 June - 3 July 2003 (2 weeks)	3 - 10 July 2003 (1 week)	3 July - 10 July 2003 (1 week)	10 - 17 July 2003 (1 week)	First Week of August 2003	Second Week of August 2003
		Activity	Plot Allocation	Committee Election	Leadership Training	Canal Digging	Water Diversion	Study Tour	Filling	ump Breaking	3ed Making	Crop Selection	Manual Application	Marking and Plant Station	Sevicw Meeting
Į		o N	-	2	ິຕ	4	ى م	60	-		 ნ	10 (11	12	13]

4-11 Action Plan of Mthethe Club (2-4), Bembeke EPA, Dedza Hills RDP, Lilongwe ADD (June 13, 2003)

4–12 Participants of Planning Workshop, Mthethe Club (2–4), Bembeke EPA, Dedza Hills RDP, Lilongwe ADD (June 13, 2003)

No.	Name	Sex	Age	Mthethe	Remarks
1	Squwe Peter	Μ	21	0.1 ha	Across the Road
7	C. Kadembo (Village Headman Kawiya)	Σ	43	No land	
ŝ	Samuel Bension	Σ	28	0.02 ha	
4	Tomasi MacKenzie	Σ	20	No land	
Ś	Gwelo Loness	Σ	19	No land	
9	Sasekana Fly	Σ	40	0.15 ha	Left Bank (Outside)
~	Ziyenda Seba	Σ	52	No land	0.80 ha in Outside
×	Marko Steven	M	21	0.1 ha	Across the Road
6	Nowa Grandson (Village Headman Phulusa)	Σ	40	No land	
2	Adam Kacanda	Σ	26	0.02 ha	
Ξ	Master Jalata (Village Headman Bizaliele)	Σ	45	No land	
12	Thiendadi Valenji	Σ	23	No land	
13	Matiasi Kalibeni	Σ	26	No land	
14	Kapinga Lice	Μ	55	No land	
15	Boniface Frankson (Village Headman Phulusa I)	Σ	31	No land	
16	Lubano Selemani	Σ	32	No land	
17	Kenati Venali	Σ	23	0.2 ha	
18	Robert Wison	Σ	25	0.08 ha	
19	Tonex Tidyeretu	Σ	32	0.02 ha	
20	Lucia Seba (Wife of Ziyanda Seba)	ы	30	No land	
21	Racael Tafère	Ľ-	23	0.2 ha	Upper Part (Outside)
22	Marita Steven	ц	20	No land	
23	Christina Grandson	Ĺ	32	0.1 ha	Left Bank (Outside)
24	Senia Anderson	Ĺ.	30	0.08 ha	
25	Stelia Yakobe	[1.,	39	0.2 ha	Upper Part (Outside)
26	Seinati Kadembo	ц	24	No land	

				Who	Who is	Locally Available	Other Tools and	
å	Activity	Quantity	Schedule	participates	Responsible	Material and Tools	Material	Possible Problem
1	Canal digging	180 m	June 29-30, 2003	Farmers and AEDO	Committee and 3 village headman	Hoes, Pangas	Tins, Picks, Shovels	Big rock
2	Site clearing / threshing	Acre:	July 5 and 9, 2003	Farmers	Committee and 3 village headman	Hoes, Pangas	Slasher	
3	Weir construction	8.5 m width, 1.3 m depth	July 9 and 11, 2003	40 farmers and AEDO	Committee and village headman	Hoes, Sacks, Pangas, Soil	Shovels, wheef barrow, Pails, Hammer	Leakage
4	Plot allocation	Acre:	July 14, 2003	Farmers and AEDO	Committee and AEDO			
5	Tilling	Acre:	July 14-28, ¹ 03 (2 weeks)	Farmers	Committee and AEDO	Hoes, Panga, Axes		
9	Lamp breaking	Acre:	July 14-28, '03 (2 weeks)	Farmers	AEDO	Hoes		
7	Plot layout	Acre:	August 4, 2003	Farmers	AEDO			
∞	Manure application	Acre:	August 5-7, 2003	Farmers				
6	Sorting and planting	Acre:	August 5-7, 2004	Farmers				
10	Leadership training	10 committee members (3 V.H.)	July 17, 2003	Farmers				
11	Study tour	18 members	July 19, 2003	Farmers	AEDO			
12	Review meeting		4th weeks of August, 2003					

4-13 Action Plan of Mtanda Club (2-6), Bembeke EPA, Dedza Hills RDP, Litongwe ADD (July 11, 2003)

Mtanda Club (2-6), Kanyama EPA, Dedza Hills RDP, Lilongwe ADD	(July 11, 2003)
4-14 Participants of Planning Workshop,	

L										
				Land in the	_				Land in the	
No.	Name	Sex	Age	potential	Position	Name	Sex	Age	potential aerea	Position
				(acre)					(acre)	
-	Chinjitsani Chaonalne	Μ	32	No land	Treasurer	Masutuka Mapira	ц,	25	No land	
2	Chinseu Kadembo	Σ	35	No land	_	Nafileta Josiya	ц	30	No land	
ŝ	Chisanu Wilibasi	Σ	36	No land	_	Loveness Simioni	<u>ب</u>	35	No land	
4	Matias Kalibeni	Σ	26	No land	_	Chrissie Ziyenda	<u>ل</u> تر	35	No land	
Ś	Opani Jusiya	X	56	No land	Chairperson	Nathigani Master	<u>ل</u> تا	not known	No land	
9	Master Jalata	Σ	36	No land	_	Nafutanji Layiyeni	щ	59	No land	
2	Patrick Lusi	Σ	24	No land	_	Esnath Kadembo	μ.,	24	No land	Vice-secretary
~	Petros Nyala	Σ	40	No land		Benadetta Thomas	ţı.	37	No land	
6	Idesi Vutikani	Σ	42	No land	-	Eluby Masitoni	ᇿ	32	No land	
10	Katsike Tsokwe	Σ	38	No land	_	Ndzalilanji Jalata	íl,	40	No land	Vice-chairperson
Ξ					_	Nzachotsanji	[14	32	No land	
12				_	_	Naluzani Lingisitala	ţı.	42	No land	
13					_	Maria Black	ц	28	No land	
14					_	Napezani Lomoya	ц	63	No land	
15					_	Natolani Chiphlvwa	ГL,	39	No land	
16					_	N'dzaeinanji Samuel	[Ι.,	50	4 acres	
17					_	Namamverana Mfitidzalimba	ц	45	No land	
18					_	Mhonekeranji Kahbeni	ц	47	No land	
19					_	Nd'zayanjanabe Phenius	ц	48	No land	
20					_	Agness Mawudzu	ц	25	No land	
21					_	Sofeleni Tsoka	Ц	30	No land	
22					_	Dandipita Zidatha	ц	not known	No land	
53					_	Nadikani Gamulani	ц	42	No land	
24					_	Christina Makwa	ц	20	No land	
25					_	Mulindani Zitha	íL,	not known	No land	
26					_	Maggie Njuchi	Ŀ	28	No land	
27					_	Nadzutsa Kwadulanj	<u>ل</u> تر	42	No land	
28				-	_	Fenita Dondo	(I.,	30	No land	Secretary
29					_	Kalangi Samueli	(ب	not known	No land	
30					_	Christina Chalesi	í.ı.	20	No land	
<u></u>					-	Christina Chinonga	ţ٢.	37	No land	
32					-	Namanyasitsa Chadnaine	ц	30	No land	
8					_	Lesitina Chaputuwa	եւ	not known	No land	
34					_	Yosofina Wailesi	í4	not known	No land	
35					_	Joyce Chapendeka	£1.,	not known	No land	
36					_	Mzalotanzi Dzuwa	μ.,	not known	No land	
37					_	Mziwalabwanji Jalata	ы	50	No land	
38					_	Emily Gamulani	ы	30	No land	

4-15 Action Plan of Namanolo Club (2-7), Bembeke EPA, Dedza Hills RDP, Lilongwe ADD (July 17, 2003)

No.	Activity	Schedule	Quantity	Who Need to be Involved	Who is Responsible	Locally Available Material	Other Tools and Material	Possible Problems
	Nomination of 1 Leadera	22nd July 2003	1 committee (9 members)	Chiefs and Farmers	Village headman, AEDO,H2O	Book and Pen	Flip chatrs, Pental pei	Diseases and Funerals
1			2 v/h . 9 committee					
	2 Leadership Training	25th July 2003	members (1day)	Chiefs and Farmers	RDP	Book and Pen, food	m/tape	Diseases and Funerals
					AEDO, VGH,	Hoes Axes, Pangas and	Picks 2, 2 shovels	
	3 Digging Canal	25th July 2004	401.1m {3 days}	30 farmers,5m / day	Committee	food	gunmboot 2 pairs	Diseases and Funerals
	-				AEDO, VGH,			
	4 Construction of Weir	25th July 2005		30 farmers a day	Committee	Hoes/ water	Gumboots	Diseases and Funerals
	5 Plot allocation	28th July 2003	300sqm / person	Committee / farmers	Committee, VGH	Hoes, ropes		Diseases and Funerals
	6 Land clearing Tilling	30th July 2003	300sqm / person	Committee / farmers	Committee, VGH	Hoes/ Slasher		Diseases and Funerals
	10		30 farmers, committee,			Book and Pen	Vehícle	- - -
	/ study tour	BnA-8	VGH and AEDO					Diseases and ⊱unerals
	8 Seed selection	25th July 2003	Variety	Farmers	Committee, AEDO			Diseases and Funerals
	9 Preparing beds / ridges	25 / 28 July 03	300sqm /person	Farmers	Committee, AEDO	Hoes	Rake, Tape,	Diseases and Funerals
	10 Transpoting manure	25 / 28 July 03		Farmers	Committee, AEDO	Sacks, pails	Oxcart,shovels, Wheelabrrow	Diseases and Funerals
<u>`</u>	11 Applying manure	30th July 2003		Farmers	Committee	Hoes, shovels		Diseases and Funerals
	12 Planting	1 - 8 th August 2003		Farmers	Committee	Hoes		Diseases and Funerals
	13 Review meeting	10 August 2003		Farmers	AEDO, VGH, Committee	Book and pens		

Attendance

23 (16 men and 9 women

				Who Need to be	Who is	Locally Available		Possible
Ś	Action	Quantity	Schedule	Involved	Responsible	Material	Other Tools and Material	Problems
-	Training on Leadership	One Day	9-Jun-03	AEDO, Member of Tikolore Club	AEDC			
2	Canal Digging	2 lm	10 - 30 June	Member of Tikolore	Chairman of Tikolore	Poles, Bamboos and	2 Shovels, 2 Wheelbarrows, 2	Encountering Big
З	Close the River (Weir Construction)		2003 (3 weeks)	Club	Club	Grass	Picks and 2 Files Rented by	and Funeral
4	Tilling the Land & Ploughing	10 110040000	1-14 June 2003	Member of Tikolore	Chairman of Tikolore			
ъ	Plot Layout	IV mectares	(2 weeks)	Club	Club			
9	Training on Manure Making	One Day	13-Jun-03	AEDO, Member of Tikolore Club	AEDC			
7	Manure Making	150 pits	16 - 20 June 2003	AEDO, Member of Tikolore Club	Chairman of Tikolore Club			
8	Training on Planting Crops	One Day	1-Jul-03	AEDO, Member of Tikolore Club	AEDC			
6	Planting		2 - 14 July 2003 (2 weeks)	Member of Tikolore Club	Chairman of Tikolore Club			
10	Review Meeting		Early August	AEDO, Member of Tikolore Club	AEDC			
F	Fencing							
12	Training on Sowing Seeds on Nursery			AEDO				
13	Sowing Seeds on Nursery Beds							
14	Conserving Land by Ridging							
15	Use of Vetiva							
16	Discovering Seeds of Certain Trees							
17	Training on How to Protect Crops from Diseases							
2	Protecting Crops from Diseases							
19	Training on How to Find Market							
20	Farmer-to-farmer Visit (Field Day)							

4-16 Action Plan of Tikolore Club (3-1), Fandani Village, Mvera EPA, Dowa RDP, Kasungu ADD (6 June 2003)

4–17 Participants of Planning Workshop, Tikolore Club (3–1), Fandani Village, Mvera EPA, Dowa RDP, Kasungu ADD (June 6, 2003)

	:			Tikolore	Land at	-	(Tikolore	Land at
	Name	Sex	Age	Club	Tikolore Site	Name	Sex	Age	Club	Tikolore Site
_	Richard Chiyazu	Σ;	<u> </u>	Chairman	2 acre	Meselina Gift	ш, I	56	Vice-Chairman	0.1 ha
	esau Karata	Σ;	57	Secretary	0. Lacre	Efelo Sundwa	ц (74	I reasurer	No Land
<u> </u>	jVH Kachulu Mastoni	Σ	20	Member	0.2 ha	Agnesi Phalamushupa	<u>ب</u> ر	32	Treasurer	No Land
	emekezasi Sole	Σ	35	Member	l acre	Mkwatinena Maziayenda	(Li,	N.A.	Member	No Land
<u> </u>	divaison Kenamu	Σ	%	Member	0.5 acre	Agnes Yada	ц	30	Member	No Land
<u> </u>	eturo Msala	Σ	40	Member	No Land	Aness Lingisoni	і ц	N.A.	Member	No Land
≤	Aoyo Khwaule	Σ	26	Member	No Land	Fritoni Dzamangaliti	ц	40	No Member	No Land
<u> </u>	Pesulani Tauka	Σ	23	Member	1.5 acre	Chosadziwa Kasoya	ц	25	No Member	No Land
-	Aakisi Zaya	Σ	33	Member	No Land	Jambo Zitcheni	н	28	Member	No Land
<u> </u>	Cathenga Kanesa	Σ	3	Member	0.1ha	Samajani Kuwi	۲) ا	24	Member	No I and
<u>~</u>	hikaiko Lizawe	Z	2	Member	No I and	Linoison Sauzande	, [x		Member	No I and
	Condwani Petulo	Z	2	Member	No Land	Agnesi Chiwadya	, р.	2	Member	NoLand
	Caiondurae Lecitala	Σ	, ç	Member	No I and	Abiti Nthenga	ч, г	5	Member	0.2 ha
1 2	Neigauace posinia Neignini Elica	Z	15	Mamber	No Land	Tomala Dobat	ц ц	16	Mambar	No 1 and
	outopuit Litea	Z	14	Manhai		Matter Dates	- 6	4 5		
		22	1 6	IADUIAN	NO LAND		L [t (Member	
		Ξ.	26	Member	0.1N2	Namainki Osala	ц (33	Member	No Land
	samisoni Chikoya	Σ	3	Member	No Land	Nambewe Kaiguduze	Ъ	7	Member	No Land
	Satini Baiton	Σ	35	Member	0.3 acre	Nasikelo Bvungula	ц	58	Member	No Land
	Khiri Nyanda	Σ	22	Member	No Land	Nabanda Msewu	ц	4	Member	0.09 ha
<u>.</u>	Jakisoni Kamchamba	Σ	35	Member	lacre	Jonesi Sara	ц	28	Member	No Land
	Yudasi Jailosi	Σ	38	Member	2 acre	Delifa Chaputumuka	ц	25	Member	No Land
	Josamu Namoni	Σ	28	Member	No Land	Maria Chivazu	ы	30	Member	No Land
• -	Steven Zava	Σ	29	Member	No Land	Nasitafu Thengagule	Ч	32	Member	No Land
• •	Sefani Folopezi	Σ	40	Member	lacre	Veletia Manduwani	ĹĽ.	34	Member	No Land
	Zuze Namoni	Z	35	Member	No Land	Khilisitina Moses	[11	28	Member	No Land
_	Gift Feniasi	≥	28	Member	No Land	Efelina Seza	ĹĿ	30	Member	0.2 ha
_	Foster Divala	Σ	49	Member	No Land	Ishinati Kantengo	, (r.	33	Member	0.1 ha
	^b atulani Maulidi	Σ	11	Member	No Land	Naniekeva Mapulanga	fr.	38	Member	No Land
	Maliseni Chimkwamawa	Σ	26	Member	Noland	Jeneti Kuwi	, (II.	22	Member	No Land
_	Sohert Nvanda	Σ	22	Memher	No Land	Junisi Msala	, (r	6	Memher	01 ha
	^z atsani Goliat	≥	30	Member	2. acre	Dalitso Fenias	ı fır	25	Memher	No Land
-	Chwaule Kamnvamata	Σ	48	Member	No I and	Naliweva Moowo	, [1	14	Member	0 1 ha
	Vickison Masina	Σ	2	Member	No Land	Selina Sefasi	, (II	26	Member	No Land
	<a>A anata Wiliton	Z	i 4	Member	No Land	Naomi Vinoula	, [x	× Z	Member	No I and
	Dingeni Nyanda	2	; ;	Member	0 lacre	Alikina lere	. (x	54	Member	No I and
	Cosmaci Mervin	2	12	Member	0.2 ha	Nalisiti Sauzande	, ц	2	Member	No Land
	Chanulumuka Divala	Z	- -	Member	0 lacre	Nalisi Steven	, <u>r</u> ı	36	Member	No I and
<u> </u>	Chikhasu Sole	Z	505	Member	0.2 ha	Satina Masina	, [1	15	Member	03 ha
	Tenvani Tchaniso	Σ	28	Member] arre	Fuledi Chimini	11	20	Memher	No I and
~	Mechica Satini	2	9	Member	0.7 ha	I oveness Sanzande	, µ	5	Member	No I and
	Caneco Thanks	22	25	Mambar		Deronhy Varana	. р	16	Mamber	No Lond
	Napesa menga	ž 2	2 2	Nicitudi Nember	1 2010	Notivity Nazepa			Mambar	No Land
	Pepulaia Ualiulwe	≤ >	2			Narkiwewi Muchucia	L (NU LAIIG
-	Valisofi Iviscu	Z	39		0.1 acte			n e		
	Soko Salmon	22	₹	Member	z acre	Mama Uniponda	цĹ	38	Member	No Land
-		22	5	Member	U.I acre	Anesi Juliasi	цĻ	76	Member	NO LANO
~ •	Viayinolo Cavelii Malimooi Chinololo	22	55	Manber		DABIDNI DUSHIDAU	L,	Λc	INIGILIDAL	NO LADU
	velinasi Chipalala	Σ	77	Member	No Land				•	
_										
_										

4-18 Action Plan of Tilime Club (3-2), Mvera EPA, Dowa RDP, Kasungu ADD (June 29, 2004)

HOW TO IMPROVE IRRIGATION AND AGRICULTURE

Priority	ISSUE		CONSTRAINTS	
	Overall Issue	Cooperation among farmers	Should listen to AEDO	
-	Manure Making	Laziness because they were not working as a group	Ignorance	No Cattle to pull ox
c		There was no canal	There was no technology	JICA came late
N	Crup twice in a year	Did not know that they can grow crops twice a year	Did not know that river diversion can make crops grow	Did not know that they can divert river to hilly places for irrigation
3	When we sell twice we will be able to keep money in bank	Because of Hunger they could not think of this idea	We can buy cart with the money we realise	Some did not know to keep money in the bank
4	We will be able to drill a borehole with the money we realise	Lack of money	No AEDOs to tell us about boreholes	

ZOIPA ZOMWE TIDAKUMANA NAZO PA	ZABWINO KAPENA ZOKOMA
ULIMI WOTHILIRA CONSTRAINTS OF	TIDAWONA NDI ULIMI WOTHILIRA.
IRRIGATION FARMING	BENEFITS OF IRRIGATION FARMING
Kukumba ngalande chifukwa kudali	
koyamba ngakhale kudali zida	Kukolola chimanga chosayembezera
Digging canal for the first time was difficult	They did not expect the harvest
Kupanga mabedi wozama kudali kuyamba	Tidapuma Kheni
Making sunken bed for the first time	Relieved from using water can
Manda wunali wovuta pomanga mbuzi	
zitayamba kudya mbeu	Pazokolola tidapezako ndatama
Plot invaded, no fence at first	Income from harvest
Kunyamula miyala yotetezela ngalande	Tidapeza ndiwositimapita ku msika
	We no longer go to the market because we
Collecting stones for channel	have enough relish
	Titagulitsa tinapeza feteleza
	After sales we bought fertilizer
	Titagulitsa tinagulako Radio
	After sales we bought Radio

4-19 Participants of Planning Workshop, Tilime Club (3-2), Mvera EPA, Dowa RDP, Kasungu ADD (June 29, 2004)

DZINA	SEX	MEMBALA	ZOKOLORA	DZINA <i>NAME</i>	SEX A	GE MEMBALA MEMBERSHIP	ZOKOLORA HARVEST	DZINA NAME	SEX /	IN MEMBALA	ZOKOLORA HARVEST
Elias Mwanza	Male	Komiti Membala	Half oxcart	Rote Garamu	male	20 Komiti Membata	Not a member last year	Binati Moliyati	male	60 Non member	
Bannet Chunga	Male	Komiti Membala	4 50kg bags	Karaya Mbendera	male	50 Member	Not a member last year	Ndasauka Ngoma	Femal	Komiti 62 Member	2 bags
Kubala Mwale	Male	Komiti Membala	Not a member last yea	Khristina Gudubu	Female	Member Chikungu 28 Club	4 50kg bags	Bokosi Chiwocha	male	Komiti 21 Member	1.5 bags
Chidzalo Kawewera	Female	Komiti Membala	3 50kg bags	Mangeni Maliko	male	15 Komiti Membala	Not a member last year	Kaifa Dalikeni	Femal	65 Non member	
Sixpence Paponda	Male	Komiti Membata	4 50kg bags	Msupa Mapulanga	Female	Chairlady Chikungu 40 Club	5 bags	Sekani Chakana	male	Komiti 28 Member	3 bags
Arafat Kathemba	Male	Komiti Membala	Not a member last yea	Magolowondo Kapond	male	50 Amfumu (Chief)	No Land	Patrick Katayi	male	Non member 45 last year	
Udasi Potilosi	Male	Komiti Membala	3 50kg bags	Agness Dickson	Female	34 Komiti Membala	4 bags	Bikisoni Mazinda	male	27 Member	Not a member last year
Naphini Ekeleni 40 years	Female	Komiti Membala	Not a member last yea	Joice Bikosi	Female	Vice Secretary 35 Chukungu Club	4 bags	Sayinani Mzukira	male	30 Member	
Maupo Kangwanda 27 years	Male	Komiti Membala	Not a member last yea	Giriyanu Chisale	male	25 Member	3 bags	Kaponda Sinkanaki	male	40 Member	11 bags Bigest plots (2)
Mauachotsa Nickson 33 yean	Female	Komiti Membala	4 50kg bags	Khinda Garamu	male	Treasure Naphini 30 club	3 bags	Layisoni Sinkanako	male	35 Member	12.5 bags (4 Plots)
Lezitiya Lubeni 40 years	Female	Chairlady wa Gulu la Katondo	Husband Here	Letifa Mwanza	Female	24 Komiti Membata	Husband here				
Mariko Kathewera	Male	Vice Chairman Tilime	5 50kg bags	Chapitapansi Ajison	male	50 Komiti Membala	Not a member last year				
Furegison Matchava 20 years	Male	Club	3 50kg bags	Lizinesi Limison	Female	45 Komiti Membala	3 bags				
Pitilosi Matchava 20 years	Male	Komiti Membala	3 50kg bags	Ketrina Matchova	Female	60 Komiti Membala	4 bags				
Rivason Fariyoti 35 years	Male	Treasure Chikungu Club	6 50kg bags	Mfferamwemo Chifunde	Female	60 Member	Not a member last year				
Limbikani Kanyamata 40 year	Male	Komiti Membala	Not a member last yea	Galamu Malambita	male	60 Member	Not a member last year				
Zikiyere Mpuranga 12 years	Male	Komiti Membala	Not a member last yea	William Chimsasa	male	Secretary Chikungu 26 Club	4.5 bags				
				Chiponda Kamnyamat	male	25 Club	3 bags				

4-20 Action Plan of Loyi Club (3-3), Mvera EPA, Dowa RDP, Kasungu ADD (July 8, 2003)

No.	Activity	Quantity	Schedule	Who needs to be involved	Who is Responsible	Locally Available Material and Tools	Other Tools and Material	Possible Problem
-	Threshing along canal	1.5km Left bank 1.5km Right bank	July 9, 2003	Farmers	Chairlady and committee members, AEDO	Threshers (big) Sickles	Threshers, sickles, Pangas	
5	Training for compost making	3 types	July 15, 16, 23, 2003	AEDO, Farmers	AEDO	Hoes	Pangas, Hoes, Shovels	
ς	canal construction	1.5km Left bank 1.5km Right bank	July 9 to July 29, 2003	Farmers	Chairlady and committee members, AEDO	Hoes	Picks, Hammers, Shovels	Hard Rocks hinder the work
4	Construction of weir	one	July 11, 2003	Farmers	Chairlady and committee members, AEDO	Wood, Grass, Soil	Wheel barrows, Pangas, Hammers, Hoes, Picks, Sickles, Shovels	
ŝ	sharing of land	3.0 ha Left bank 2.5 ha Right bank	July 30, 2003	Village headman AEDO	Village headman	Hoes	Measuring tape, Hoes, Threshers	
9	Threshing plots	3.0 ha Left bank 2.5 ha Right bank	August 1 to August 2, 2003	Farmers	Chairlady and committee members, AEDO	Threshers (big)	Sickles, Pangas, Threshers	
7	Tilling	3.0 ha Left bank 2.5 ha Right bank	August 2 to August 11, 2003	Farmers	Chairlady and committee members, AEDO	Hoes, Axes	Picks, Paangas	
~	Manure making	30 farmers Left bank 50 farmers Right bank	July 16 to July 25, 2003	Farmers	Chairlady and committee members, AEDO	Hoes	Pangas, Hoes, Shovels	
6	Plot layout	900 beds Left bank 1,500 beds Right bank	August 6 to August 9, 2003	Farmers	Chairlady and committee members, AEDO	Hoes	Measuring tape, Ropes, Hoes	
10	Manure application	3.0 ha Left bank 2.5 ha Right bank	August 10 and 11, 2003	Farmers	Chairlady and committee members, AEDO	Pail (container)	Shovels, Wheel barrows	
=	Planting	3.0 ha Left bank 2.5 ha Right bank	August 11 to August 15, 2003	Farmers	Chairlady and committee members, AEDO	Hoes	Measurement	

				Land in th ae	e potential rea					Land in th aei	e potential rea	Position at Committee
			<u>ا</u>		Right/Left	Position at					Right/Left	
Å	Name	Sex	Age	Area	Bank	Committee	Name	Sex	Age	Area	Bank	
	Madziada Damba	М	78	No land			Lidesi Gidala	Ľ.	42	0.1 ha		
2	Lemekezani Biwi	Z	42	No land			Mtsanu Mwale	ĹĽų	32	0.25 ha		
ŝ	Dixon Chitsamba	Σ	22	0.2 ha	Right		Emilida Dikisoni	ц	20	0.2 ha		
4	German Katamanda	Σ	25	No land			Gladyse Lameki	Ц	22	0.2 ha		
Ś	Zitupa Laliyo	Z	not known	0.75 ha	Right		Nasineli Fulani	[بتير	20	No land		
9	Mtalanje	Z	39	0.2 ha	Right	Village headman	Tiankhulenji Jamitoni	ĹĿ,	25	0.25 ha		
r~-	Chipeni Njolo	ž	not known	No land			Namaziya Simiyoni	ĹĿ	40	No land		
œ	Kadyankena Pheleni	Σ	38	0.4 ha			Sitiveria Chilikutsangwe	Ĺ-L.	25	No land		
6	Stanicl Makasiko	Σ	38	0.2 ha			Naphiri Damba	ĹĨ.	22	No land		
10	Leonad Mbalame	ž	53	0.4 ha	Right		Aleneti Levisoni	لتم	26	No land		
Ξ	Biwi Chimdidi	Σ	74	No land			Nasibeli Masikolo	<u>ا</u> ت.	not known	0.2 ha		
12	Sinoya Wilson	ĭ	28	0.2 ha	Right		Milika Kamkhokho	Ļ	62	No land		
13	Saukani Gaveni	Σ	21	No land			Mtata Chunga	ĹŦĸ	not known	No land		
4	Gaven Fulu	Σ	58	0.8 ha			Adinesi Mbalani	ليت	40	No land		Chairperson
15	Filipo Gidala	ž	42	0.6 ha	Right		Bezita Mtata	<u>بنب</u> ر	38	No land		
16	Maxwel Chipeta	Σ	40	No land	•	Committee member	Anesi Mtalanje	ч	27	No land		
17	Peter Banda	Σ	32	No land		Vice-chairperson	Velonika Binisoni	щ	26	No land		Treasure
18	Master Kafumphe	Σ	24	No land		Vice-secretary	Dinesi Miti	ц	32	0.4 ha		
19	Yosofati Chimonjo	Σ	20	No land			Geveleti Mtemangombe	۲	30	I ha		
20	Basikolo Binisoni	Σ	23	No land			Lesita Kamkamba	Щ	41	No land		
21	Damba Madziyada	Σ	33	0,2 ha		-	Betelesi Black	ц	42	0.3 ha	Right	
22	Black Gidala	Σ	59	No land			Falesi Biwi	ц	54	No land		
23	Lameki Aliki	Σ	not known	No land			Deliya Chataika	لتم	22	0.8 ha		
24	Chitanje Banda	Σ	36	0.2 ha			Mary Kachingala	щ	28	No land		
25	Benson Madziada	Σ	21	No land			Naomi Dyson	ц	50	0.4 ha		
26	Lekezani Zomba	Σ	not known	0.2 ha			Msankulana Simeon	ίĿ	42	0.2 ha		
27	Gonthi Samsoro	Σ	60	0.8 ha			Anesi Zinaumalcka	ц	not known	0,2 ha		
28	Richard Mafiyo	Σ	27	0.2 ha			Nasiyani Majiga	щ	32	No land		
29	Jabesi Pitala	Σ	25	No land			Rhoda Kampheta	ц	24	No land		
30	Kalembo Pitala	Σ	20	No land			Agnes Sinoya	ц	31	0.25 ha		
31	Nyadani Zikati	Σ	39	0.2 ha			Nolisi Devisoni	۲L	not known	No land		
32							Ireen Folopezi	ц	. 20	No land		

4–21 Participants of Planning Workshop, Loyi Club (3–3), Mvera EPA, Dowa RDP, Kasungu ADD (July 8, 2003)

Kasungu ADD	
22 Action Plan of Gontha Club (4–2), Kalira EPA, Ntchisi RDP, I	(10 June 2003)
4	

				Who Need to		Locally Available	Other Tools and	Possible
ž	Activity	Indicator	Schedule	be Involved	Who is Responsible	Material	Material	Problems
-	Site Verification	2 ha	May 2003					
2	Pegging and Marking the Channel	600 m	4 June 2003					
ς Υ	Planning Workshop	67 members	10 June 2003					
4	Threshing / Site Clearing	2 ha	16 June 2003	67 Members	Members, Village	All Material. Hoes.	z shovers, z r reks, z Slashes, 2	
5	Construction (Canal / Weir)	600 m	(15 days)	67 Members	ABDO, To commuce Members, Village	Phanga and Axes	Wheelbarrows and 2 Hammers will be rented	
9	Tilling	2 ha	30 June 2003 (3 days)	67 Members	AEDC, To commutee Members, Village		trom k alita h P A	
7	Lump Breaking	2 ha	1st week, July 2003	67 Members	AEDO, To commu ce Members, Village	5		
8	Plot Layout	2 ha	2ns week, July 2003	67 Members	AEDO, TO COMMUNE Members, Village			
б	Basin Making	2 ha	2nd week, July 2003	67 Members	AEDC, To commute Members, Village			
10	Manure Application	2 ha	3rd week, July 2003	67 Members	AEDC, TO COMMITE Members, Village			
7	Demonstration on Planting of Crops	2 Basins (1.2 x 3 m)	3rd week, July 2003	67 Members	AEDO, To commuce Members, Village			
12	Planting	2 ha	4th week, July 2003	67 Members	AEDO, TO COMMITCE Members, Village			
13	Review Meeting	67 members	Early August 2003	67 Members	AEDO, TO COMMUNES Members, Village			

4–23 Participants of Planning Workshop, Gontha Club (4–2), Kalira EPA, Ntchisi RDP (June 10, 2003)

										Gontha		
° No	Name	Sex	Age	Gontha East	Acreage	No.	Name	Sex	Age	West	Acreage	
-	Jaziyele Enock Sckitale	Σ	31	Menber	1/2 acre	1	Mozani Aron	Μ	49	Member	l acre	
2	Chitimbe Banda	Σ	52	Member	2 acre	2	Solomoni Chinkande	Σ	4]	Secretary	1.5 acre	
r)	Chief Pondani Mansaalusd	Σ	61	Member	1 acre	ŝ	Velisoni Kalimanthaka	Σ	72	Member	0.5 acre	
4	Lyson Enoki	Σ	62	Member	0.6 ha	4	Katela Petulo	Σ	57	Member	0.10 ha	
ŝ	Mackson Nyongani	Σ	30	Member	0.6 ha	ŝ	Izikiya Nkhoma	Σ	26	Member	l acre	
9	Joni Bwanausi	Σ	51	Member	l acre	9	Chikangwa Banda	Σ	32	Member	1.5 acre	
r~	Jemusi Binalisoni	Σ	56	Member	I.5 acre	~	Amon Lingisani	Σ	23	Member	0.2 ha	
00	Mozesi Ngwata	Σ	49	Member	1 acre	~	Malita Banda	ц	21	Member	l acre	
6	Mpondaguta Mwale	Σ	29	Member	1 acre	6	Judisi Phiri	ц	32	Member	l acre	
01	Nkhoma Maseleka	Σ	24	Member	0.2 ha	10	Mere Luka	ц	24	Member	1 acre	
Ξ	Bwando Chinseu	Σ	35	Member	1 acre	Ξ	Mere Labisoni	н	42	Member	1.5 acre	
12	Zelesi Aron	Σ	56	Member	0.4 ha	12	Teleza Mbewe	ĹŦ	24	Member	1 acre	
1	Jolex Banda	Σ	31	Member	l.5 acre	Ē	Agatha Banda	ц	22	Member	0.2 ha	
4	Pritiani Nkhoma	Σ	28	Member	l acre	4	Vegilina Gaweni	ц	53	Member	0.4 ha	
15	Nikolasi Mpofo	Σ	39	Member	2 acre	15	Vesita Nkhata	н	42	Member	1.5 acre	
16	Posiyano Mndele	Σ	31	Menber	l acre					Gontha East		
1	Makisiwelo Vula	Σ	47	Member	l.5 acre	Š	Name	Sex	Age	/ West	Acreage	
18	Bibi Phiri	Σ	47	Member	1.5 acre		Samson Phiri	Σ	32	Member	No land	
61	Mazengela Jenusi	Σ	29	Member	1.5 acre	7	Mateyo Jolobeni	Σ	41	Member	No land	
20	Patiriki Falisoni	Σ	32	Member	1.5 acre	m	Gift Mpofu	Σ	24	Member	No land	
7	Kalonga Chunga	Σ	30	Member	1.5 acre	4	Gaveni Nathaniel	Μ	43	Member	No land	
22	Perekani Nkhoma	Σ	22	Member	0.2 ha	ŝ	Kumbukani Banda	Χ	22	Member	No land	
23	Moffat Pingama	Σ	22	Member	0.4 ha	9	Patson Lukiyo	χ	29	Member	No land	
2	Jakisoni Bwanausi	Σ	22	Member	l.5 acre	1	Maxwel Nanzolo	Χ	43	Member	No land	
25	Kanyenda Faniwelo	Σ	32	Member	I.5 acre	~	Jupitoni Chunga	X	36	Member	No land	
26	Petulo Banda	Σ	60	Member	1 acre	6	Hatoni Nazolo	Z	34	Member	No land	
27	Solomoni Tembo	Σ	30	Member	1.5 acre	01	Chikoti Aaron	Σ	42	Member	No land	
28	Mose Nkhoma	Σ	16	Member	1.5 acre	Ξ	Judith Mwale	н	25	Member	No land	
23	Samuyele Pondabwino	Σ	17	Member	1.5 acre	12	Malita Bulakafesi	ц	24	Member	No land	
30	Tezanji Ezekia	щ	21	Member	2 acre							
3	Monika Matiki	ц	23	Mcmber	l acre							
32	Mere Pawulo	ц	24	Member	1.5 acre							
33	Veronica Ngalande	ഥ	30	Member	1.5 acre							
34	Malira Nsokoneza	[J.,	23	Member	1.5 acre							
35	Elizabeth Yosefe	<u>ل</u> ت	32	Member	1.5 acre							
36	Malita Kamtoma	í.	42	Member	1.5 acre							
37	Jesi Jizasi	Ľ.	24	Member	1.5 acre							
38	Kalengo Tembo	£34	67	Member	L.5 acre							
39	Yamikani Matiya	ц	25	Member	1.5 acre							
40	Joisi Phiri	ц	25	Member	I.5 acre							

4-24 Evaluarion at Katema Club (4-3), Kalira EPA, Ntchisi RDP, Kasungu ADD (July 14, 2004)

ž	ADVANTAGES	PROBLEMS
	l Reduced hunger	Hard work for clearing the bush
	2 Source to income	Weir construction
	3 Learn to work in groups	Digging of the canal, some times they have to dig very
	4 They have learnt that applying manure grow maize well	Carrying manure to the field
	S Known other farmers doing irrigation in other site	High price of fertilizer
	5 Through ST learning like JIKO	

4-25 Action Plan at Katema Club, Kalira EPA, Nchisi RDP, Kasungu ADD (July 14, 2004)

SOLUTIONS	- Crop diversification	- Compost manure	 Fund raising 	 Money contribution 	- No hunger problem	- Crop diversification	- Start making earlier	- Already done	- done
PROBLEMS	- Expensive	- No market to	sell produce so could not get		 Did not know the goodness of cooperation 	- They wanted food security first	- We started late	- Started late	
) WHAT IS NEED	1 Buy fertilizer				2 Cooperation	3 Growing different type of crops so that they can be selling some products to buy fertilizer	4 Should be making compost manure	5 Expanding service area	6 Planting early so that they can be planting twice a year
20									

DIFFERENT TYPES OF CROPS	COMPOST MANURE
CROPS	KIND
1. Irish potatoes	Pits
2. 1011atucs 3. Cabbage 4. Rape vegetables	HOW TO INCREASE
WHERE TO SELL	1
l. Vendors	WHEN TO INCREASE
HOW TO GET SEEDS	After cultivating new areas
	TARGETS
WHEN TO START	105 Hips

Next year is when they will do group work for different crops growing
 This year they will do individual for growing different types of crops.

	HARVEST	4 pails	2 pails		5 pails	5 pails	5 pails		5 pails	10 pails	5 pails	10 pails		7 pails	5 pails	
	NOILISOA	Member	Member	New member	Secretary			New member					New member	Committee		New member
	SEX	Female	Male	Male	Male	Male	Male	Female	Female	Female	Female	Female	Female	Male	Male	Male
	AGE	32	25	62	24	31	30	50	52	24	24	28	18	37	31	69
	NAMES	Esnat Otchimani	Bezai	Kambandil	Thomson	Alfred	Reuben	Ezilida	Grolia	Dina	Eliza	Elita	'Malita	Titani	Staniel	Jelimoti
	<u>0</u>	16	1	18	61	20	21	22	23	24	25	26	27	28	29	30
	HARVEST	1 ½ 90 kgs	1/4 of 90 kgs	4 Pails	4 Pails	6 Pails	4 Pails	5 Pails	4 Pails	7 pails		10 Pails	5 Pails	4 pails	6 Pails	5 Pails
	NOILISOA	Chairman	Committee	Member	Member	Member	Member	Committee	Member	Member	New Member	Member	Member	Committee	Member	Member
	SEX	Male	Male	Male	Male	Male	Male	Female	Female	Female	Female	Male	Male	Male	Female	Female
	AGE	31	21	24	57	39	49	26	27	55	28	23	55	33	29	20
articipants	<u>O</u> <u>NAMES</u>	1 Mateyo Manuel	2 Zelu Kayini	3 Lukes Kakhumbu	4 Mateyo Dick	5 Solomoni Yuda	6 Otchimani Geniyasi	7 Elita Staniel	8 Chrissy Lukas	9 Christina Chaola	10 Rute Windimani	11 Biziwick Misengo	12 AlickiponYuda	13 Masinalo Choso	14 Lezita Alfred	15 Mary Nyamulani
ב						[

4-26 Participants of Workshop at Katema Club, Kalira EPA, Ntchisi RDP, Kasungu ADD (July 14, 2004)

				Who needs to		Locally Available	Other Tools and	Possible
No.	Activity	Indicator	Schedule	be involved	Who is Responsible	Material and Tools	Material	Problem
	Manure-making (Training)	3 types	July 3	50 member	Committee, Village headman, AEDO		- - -	
5	Land crearing	2 km	July 7 -12	50 member	Committee, Viilage headman, AEDO			
3	Excavation of canals	2 km	July 13-20	50 member	Committee, Village headman, AEDO			
4	Weir construction		July 13-20	50 member	Committee, Village headman, AEDO			Sickness and funeral
5	Drainage	1 km	July 21-23	50 member	Committee, Village headman, AEDO		Shovels, Picks, Hammers,	Difficult to buy
9	Tilling	20 ha	July 24-31	50 member	Committee, Village headman, AEDO	Hoes, Grass, Trees, Sands, Bamboo	Wheelbarrows, Pangas, Sickles,	umproved maize seeds
7	Breaking big soils	20 ha	August 1 -3	50 member	Committee, Village headman, AEDO		for crossing	Hunger
8	Plot layout	20 ha	August 4-7	50 member	Committee, Village headman, AEDO			Water volume will be reduced
6	Basin (Bed) making	20 ha	August 4-7	50 member	Committee, Village headman, AEDO			
10	Manure-application	400 ox-carts	August 8-9	50 member	Committee, Village headman, AEDO			
11	Planting	20 ha	August 10	50 member	Committee, Village headman, AEDO			

				Land in the					Land in the		
				potential	Position at				potential	Position at	
ź	Name	Sex	Age	aerea	Committee	Name	Sex	Age	aerea	Committee	
-	Yohane Kadzulo	M	27	Yes		Mary Dagiya	F	25	Yes	Secretary	
7	Yolamu Chqalawanda	Σ	65	Yes		Everesi Khaniziimantha	ц	47	Yes	Treasurer	
ŝ	Dagia Ciliamu	Σ	70	Yes		Aness Kachedwa	ĹŢ.	33	Yes		
4	Brighton Chathyoka	Σ	34	Yes		Ana Davide	ц	27	Yes		
ŝ	kawayula Gondolowi	Σ	56	No	Groug V.H.	Mary Bisalomo	Ц	31	Yes		
9	Jeremani Mvula	Σ	40	Yes		Everess Sonesi	Ĺ.	49	Yes		
5	sandałamu Chikunumbulo	Σ	31	Yes		Maria Tembo	ĹŢ,	27	Yes		
×	Biliam Kachedwa	Σ	39	Yes		Manyuwe dagiya	ц	48	Yes		
6	Chalika Kalimadzi	Σ	28	Yes		Teleza Josephug	j۲.,	25	Yes		
10	Ndaiwala Banda	¥	21	Yes		Nalien Chanthyoka	ĹIJ.	33	Yes		
Ξ	Elias Chimbalu	Σ	26	Yes		Nasilia Bizisjizk	í.	48	Yes		
12	Livitiko Famlel	Σ	36	Yes		Robert Mpumnlo	íı.	24	Yes		
13	David Dagiyo	Σ	28	Yes							
14	Wosifeni Machila	Μ	25	Yes							
15	Chivsiwa Banda	Σ	37	Yes							
16	Benisoni Mbewe	Σ	27	Yes							
17	Kachivapa Kalinadzi	Σ	41	Yes							
18	Dayitoni Sanikond	Σ	47	Yes							
19	Antoni Naherere	Σ	22	Yes							
20	Davide Chimwala	Σ	45	Yes							
21	Sulani Dayitoni	Σ	18	Yes							
22	Gwireni Biziyele	Σ	40	Yes							
23	Kapiscni Petulo	Σ	28	No							
24	Manja K. Biziyele	Σ	24	Yes	Chairman						
25	Tchale Kapiseni	Σ	65	Yes							
26	Andulu Elias	Σ	24	Yes							
27	Kafele Kawayula	Σ	21	Ycs							
28	Hardwick Tembo	Σ	39	Yes							
29	Robert Kamfosi	Σ	32	Yes							_

4-28 Participants of Planning Workshop, Kasangadzi Club, Karila EPA, Ntchishi RDP, Kasungu ADD (July 1, 2003)

Mtuwanjovu Club, Mpenu EPA, Lilongwe RDP

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1. V.H. Mwase	2. Mr. Fikiyala Joswa (Chairman)	3. Mr. Bison Kuma	4. Mir. Resiyamu Fikiyala (Chairman's con Right)
		(Secretary)	(Onairman's son, rught)
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5. Mr. Nkhokonba			
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1. V.H. Mkuntha	2. Mr. Takumana Chadika	3. Mr. Langani Kanyamata	
Ngoni Club, Mnenu EPA	Lilongwe RDP	· · · · · · · · · · · · · · · · · · ·	
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	2 Mr. Shome Masilia		
1. V.H. Kufarkwanthu	(Chairman)	3. Mr. Yobu Chinthuza	4. Mr. Yamikani (Left)
		CONTRACTOR AND A CONTRACTOR	
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V H Kufarkwanthu)	6. Mr. Kang'ono	7. Mr. Masalimo Kari	(Center)
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Mtanda Club, Bembeke EPA, Dedza RDP



Tikolore Club, Mvera EPA, Dowa RDP



Bvunganjati Club (Yapola Village), Mvera EPA, Dowa RDP



Katema Club, Kalira EPA, Ntchisi RDP



APPENDIX-4 AGRICULTURE DEVELOPMENT

lab.No. Origin	Hd	N%	<u>Ч%</u>	У%	%Ca	%Mq	S%	nZ maa	ppm Cu
COMPOST						>			
29273 Masambaimfa compost	8.1	1.93	0.04	0.43	0.45	0.14	0.01	98.74	122.65
29274 Masambaimfa compost	7.5	1.75	0.11	0.45	0.32	0.24	0.01	87.67	47.62
29275 Katema Khola	8.7	1.85	0.02	1.25	0.94	0.16	0.01	54.43	35.20
29276 Gontha compost	8.5	1.83	0.16	0.34	1.07	0.31	60.0	78.60	73.49
29277 Kasangazi khola	8.5	1.80	0.17	0.69	0.56	0.20	0.02	130.94	25.67
29278 Chikhasu compost	7.4	2.26	0.13	0.64	0.81	0.30	0.03	105.78	23.76
29279 Chikhasu compost	6.7	2.53	0.30	0.26	0.42	0.16	0.02	58.46	76.37
29280 Chikhasu khola	7.2	2.73	0.29	0.55	0.39	0.09	0.07	99.75	97.54
29281 Chimphonongo khola	8.8	2.19	0.13	0.48	0.46	0.11	0.06	92.70	79.25
29282 Balan'gombe chimato compost	8.5	1.99	0.01	1.22	0.59	0.12	0.02	90.691	37.11
29283 Balan'gombe compost	7.3	2.12	0.07	0.71	0.27	0.19	0.06	96.73	43.80
29284 Tigwirizane Club chimato	8.0	2.14	60.0	0.67	0.88	0.15	0.02	59.47	75.41
29285 Nsanja chimato	8.3	2.12	0.21	1.07	0.94	0.11	0.04	100.75	40.93
29286 Nsanja Khola	8.6	2.18	0.22	0.39	0.41	0.03	0.01	57.45	74.45
29287 Llivizi	6.8	2.05	0.10	0.35	0.36	0.13	0.30	87.67	58.14
29288 Nsanja compost	8.3	2.15	0.26	1 18	0.87	0.16	0.02	59.47	79.25
29289 Tikolore copmpost	9.4	1.92	0.18	0.72	5.52	0.06	0.12	157.08	36.16
29290 Kadiwa compost	8.4	1.90	0.35	0.81	0.49	0.15	0.30	69.06	56.23
Aveage	8.06	2.08	0.16	0.68	0.87	0.16	0.07	89.28	60.17
BOCASHI									
lab.No. Origin	Hd	N%	Ч%	У%	%Ca	6M%	S%	ppm Zn	ppm Cu
29292 Heap 1 chibuku (first sampling)	8.7	1.92	0.12	0.52	0.68	0.12	1.20	91.69	36.16
29293 Heap 2 masese	7.8	2.00	0.13	0.26	0.98	0.54	0.76	72.56	54.31
29294 Heap 3 fermented gaga	8.2	2.01	0.15	0.51	1.22	0.19	0.04	221.37	78.29
29295 Heap 4 chibuku, masese, gaga	7.8	2.13	0.01	0.36	1.45	0.17	0.01	59.47	37.11
29296 Heap 5 napier grass masese	8.1	1.99	0.16	0.42	1.40	0.08	0.03	130.94	36.16
average	8.12	2.01	0.12	0.41	1.15	0.22	0.41	115.21	48.41
29297 Heap 1 chibuku (second sampling)	0.6	2.08	0.16	0.61	0.68	0.03	0.06	56.45	33.29
29298 Heap 2 masese	8.5	2.03	0.11	0.43	1.47	0.35	0.04	179.19	59.10
29299 Heap 3 fermented gaga	8.1	1.99	0.16	0.27	1.11	0.08	0.04	132.95	36.16
29300 Heap 4 chibuku,masese,gaga	8.2	2.05	0.12	0.37	1.97	0.97	0.06	81.63	19.00
29301 Heap 5 napier grass masese	8.4	2.15	0.10	0.39	1.01	0.16	0.06	177.18	114.91
average	8.44	2.06	0.13	0.42	1.25	0.32	0.05	125.48	52.49
29302 Heap 1 chibuku (third sampling)	9.1	2.12	0.02	0.49	0.76	0.06	0.03	38.31	43.80
29303 Heap 2 masese	8.5	2.34	0.01	0.46	1.27	0.15	0.09	77.60	25.67
29304 Heap 3 fermented gaga	8.0	1.82	0.14	0.27	1.13	0.10	0.03	130.94	38.06
29305 Heap 4 chibuku,masese,gaga	8.2	1.88	0.02	0.42	4.01	3.04	0.17	121.88	50.49
29306 Heap 5 napier grass, masese	8.4	2.08	0.02	0.50	1.33	0.28	0.63	169.14	61.02
average (applied in calculation	a) 8.44	2.05	0.04	0.43	1.70	0.73	0.19	107.57	43.81
Average	8.33	2.04	0.10	0.42	1.36	0.42	0.22	116.09	48.24
Local Name	Botanical Name	Remarks							
--------------------------	-----------------------	---							
Jerejere	Sesbania sesban	Maize stalk borer							
Katupe	Tephrocia vagilii	Maize stalk borer							
India	Melia azaderch	Maize stalk borer, big tree							
Dema		Maze stalk borer							
Futsa	Veranori amygdai line	Maize stalk borer, very often found							
Flowery Bunda		Used for scabies							
Marry Gold		Works on nematode							
Mpungabwi, Kaphavumba		Mosquito repellant called wild bagili							
Onion		Repellant							
Garlic		Repellant							
Nsatsi		Very strong called caster oil plant							
Nkhadze	Uopli??	Very often found in graveyard and very sticky (called rubber tree), may not be suitable as natural pesticide due to the stickiness.							

2. List of Botanical Pesticide

3. Elements of	Botanical Pesticik	des								
lab. No.	Origin	N%	ч%	Ж%	%Ca	%Mg	S%	ppm Zn	Cu ppm	ppm Fe
29373	Dema	0.05	0.43	1.31	1.6	1.26	2.02	73.07	42.00	285.23
29374	Kangaluche	0.03	0.08	0.61	1.61	0.74	1.63	65.38	65.00	1954.45
29375	Mphanjovu	0.23	0.15	1.11	1.54	0.4	1.45	59.63	59.00	747.14
29376	Somphole	0.2	0.16	1.13	1.27	0.28	1.3	62.07	76.00	5010.05
29377	Tephrosia	1.23	0.26	1.48	2.29	0.44	1.93	102.96	82.00	327.54
29378	Nimu	0.36	0.19	2.10	5.42	0.68	5.44	179.79	84.00	714.95
29379	India	1.03	0.23	1.70	5.92	0.23	2.19	129.10	81.00	747.14
NILLS TLS LSL	I alter a contra d'activity	1.								

Note: The test was carried out in June/ July 2004 at Chitedze Research Center.

4. EPA Code and Name, and Location Maps

EPA NAME	EPA No.	EPA NAME	EPA No.	EPA NAME	EPA No.
Bazale	1	Khosolo	55	Muhuju	109
Bembeke	2	Linga	56	Mulanje South	110
Bilira	3	Linthipe	57	Mulanje West	111
Bolero	4	Lirangwe	58	Mvera	112
Bowe	5	Lisasadzi	59	Mwamkumbwa	113
Bulala	6	Lisungwi	60	Mwansambo	114
Bwengu	7	Livunzu	61	Mwanza	115
Chafumba	8	Lobi	62	Nachisaka	116
Chamama	9	Lufita	63	Nakachoka	117
Champhira	10	Lungwena	64	Naminjiwa	118
Chigonthi	11	M'ngwangwa	65	Namkumba	119
Chikweo	12	Madisi	66	Nampeya	120
Chikwina	13	Magoti	67	Nanyumbu	121
Chilaza	14	Maiwa	68	Nasenga	122
Chilipa	15	Makhanga	69	Neno	123
Chingale	16	Malomo	70	Njolomole	124
Chinguluwe	17	Malosa	71	Nkhatabay Boma	125
Chintheche	18	Manjawira	72	Nkhulambe	126
Chioshya	19	Manyamula	73	Nkhunga	127
Chipoka	20	Masambanjati	74	Nsanama	128
Chipuka	21	Masuku	75	Nsanje	129
Chisenga	22	Matapwata	76	Nsipe	130
Chisepo	23	Mayaka Ngwerero	77	Ntchenachena	131
Chitekwele	24	Mayani	78	Ntchisi Boma	132
Chitheka	25	Mbawa	79	Nthondo	133
Chitsime	26	Mbewe	80	Ntiya	134
Chivala	27	Mbonechera	81	Ntonda	135
Chiwamba	28	Mbwadzulu	82	Ntubwi	136
Chulu	29	Mikalango	83	Nyachilenda	137
Demela	30	Mikundi	84	Nyambi	138
Dolo	31	Ming'ongo	85	Nyanja	139
Dzaone	32	Misuku	86	Phalula	140
Emfeni	33	Mitole	87	Santhe	141
Eswazini	34	Mjinge	88	Sharpevale	142
Euthini	35	Mkanda	89	Sinyala	143
Golomoti	36	Mlomba	90	Tamani	144
Kabwazi	37	Mlonyeni	91	Tembwe	145
Kalambo	38	Mndolera	92	Thondwe	146
Kalira	39	Mombezi	93	Thumbwe	147
Kalulu	40	Mpamba	94	Thyolo Boma	148
Kaluluma	41	Mpatsa	95	Tsangano	149
Kambanizithe	42	Mpenu	96	Ukwe	150
Kandeu	43	Mpherembe	97	Ulongwe	151
Kanyama	44	Mphompha	98	Waruma	152
Kaphuka	45	Mpilipili	99	Zidyana	153
Kaporo North	46	Mpilisi	100	Zombwe	154
Kaporo South	47	Mpinda	101		
Karonga Central	48	Mpingu	102		
Karonga South	49	Mpokwe	103		
Kasongo	50	Mponela	104		
Kasungu Chipala	51	Msitu	105		
Katuli	52	Msondole	106		
Kavukuku	53	Mtakataka	107		
Khombedza	54	Mtiramanja	108		

Note: This table was provided by Agriculture Extension Serves on December 3 2004, showing 154 EPAs in total. While, it is said that there are 186 EPAs throughout the country, and an inventory survey carried out under this Study has received 178 EPAs results. Though information is not consistent, there must be over 180 EPAs throughout the country.

EPA NAME		
EPA	RDP	ADD
BAZALE	BALAKA	MACHINGA
MPILISI	BALAKA	MACHINGA
PHALULA	BALAKA	MACHINGA
ULONGWE	BALAKA	MACHINGA
BILIRA	BWANJE VALLEY	SALIMA
CHILIPA	BWANJE VALLEY	SALIMA
GOLOMOTI	BWANJE VALLEY	SALIMA
ΜΤΑΚΑΤΑΚΑ	BWANJE VALLEY	SALIMA
NAMKUMBA	BWANJE VALLEY	SALIMA
SHARPEVALE	BWANJE VALLEY	SALIMA
BULALA	C. MZIMBA	MZUZU
ESWAZINI	C. MZIMBA	MZUZU
EUTHINI	C. MZIMBA	MZUZU
MANYAMULA	C. MZIMBA	MZUZU
MJINGE	C. MZIMBA	MZUZU
DOLO	CHIKWAWA	SHIRE VALLEY
KALAMBO	CHIKWAWA	SHIRE VALLEY
LIVUNZU	CHIKWAWA	SHIRE VALLEY
MBEWE	CHIKWAWA	SHIRE VALLEY
MIKALANGO	CHIKWAWA	SHIRE VALLEY
MITOLE	CHIKWAWA	SHIRE VALLEY
CHISENGA	CHITIPA	KARONGA
ΚΑΥŪΚŪΚŪ	CHITIPA	KARONGA
LUFITA	CHITIPA	KARONGA
MISUKU	CHITIPA	KARONGA
MWAMKUMBWA	CHITIPA	KARONGA
BEMBEKE	DEDZA HILLS	LILONGWE
KANYAMA	DEDZA HILLS	LILONGWE
KAPHUKA	DEDZA HILLS	LILONGWE
MAYANI	DEDZA HILLS	LILONGWE
CHIVALA	DOWA EAST	KASUNGU
MVERA	DOWA EAST	KASUNGU
NACHISAKA	DOWA EAST	KASUNGU
BOWE	DOWA WEST	KASUNGU
CHISEPO	DOWA WEST	KASUNGU
MADISI	DOWA WEST	KASUNGU
MNDOLERA	DOWA WEST	KASUNGU
MPONELA	DOWA WEST	KASUNGU
KAPORO NORTH	KARONGA	KARONGA
KAPORO SOUTH	KARONGA	KARONGA
KARONGA CENTRAL	KARONGA	KARONGA
KARONGA SOUTH	KARONGA	KARONGA
СНАМАМА	KASUNGU	KASUNGU
CHULU	KASUNGU	KASUNGU
KALULUMA	KASUNGU	KASUNGU
KASUNGU CHIPALA	KASUNGU	KASUNGU
LISASADZI	KASUNGU	KASUNGU
SANTHE	KASUNGU	KASUNGU
CHIKWEO	KAWINGA	MACHINGA
MBONECHERA	KAWINGA	MACHINGA
NAMPEYA	KAWINGA	MACHINGA
NANYUMBU	KAWINGA	MACHINGA
NSANAMA	KAWINGA	MACHINGA
NYAMBI	KAWINGA	MACHINGA
CHIGONTHI	LILONGWE EAST	LILONGWE
CHITEKWELE	LILONGWE EAST	LILONGWE

EPA NAME		
EPA	RDP	ADD
CHITSIME	LILONGWE EAST	LILONGWE
CHIWAMBA	LILONGWE EAST	LILONGWE
MPENU	LILONGWE EAST	LILONGWE
NAKACHOKA	LILONGWE EAST	LILONGWE
NYANJA	LILONGWE EAST	LILONGWE
CHILAZA	LILONGWE WEST	LILONGWE
DEMELA	LILONGWE WEST	LILONGWE
KAMBANIZITHE	LILONGWE WEST	LILONGWE
MING'ONGO	LILONGWE WEST	LILONGWE
MLOMBA	LILONGWE WEST	LILONGWE
M'NGWANGWA	LILONGWE WEST	LILONGWE
MPINGU	LILONGWE WEST	LILONGWE
NTHONDO	LILONGWE WEST	LILONGWE
SINYALA	LILONGWE WEST	LILONGWE
UKWE	LILONGWE WEST	LILONGWE
LUNGWENA	MANGOCHI	MACHINGA
MAIWA	MANGOCHI	MACHINGA
MBWADZULU	MANGOCHI	MACHINGA
MPILIPILI	MANGOCH	MACHINGA
MTHIRAMANJA	MANGOCHI	MACHINGA
NASENGA	MANGOCHI	MACHINGA
CHIOSHYA	MCHINJI	KASUNGU
KALULU	MCHINJI	KASUNGU
MIKUNDI	MCHINJI	KASUNGU
MKANDA	MCHINJI	KASUNGU
MLONYENI	MCHINJI	KASUNGU
MSITU	MCHINJI	KASUNGU
MULANJE SOUTH	MULANJE	BLANTYRE
MULANJE WEST	MULANJE	BLANTYRE
LISUNGWI	MWANZA	BLANTYRE
MWANZA	MWANZA	BLANTYRE
NENO	MWANZA	BLANTYRE
KATULI	NAMWERA	MACHINGA
MASUKU	NAMWERA	MACHINGA
NTIYA	NAMWERA	MACHINGA
CHIKWINA	NKHATABAY	MŽUZU
CHINTHECHE	NKHATABAY	MZUZU
CHITHEKA	NKHATABAY	MZUZU
МРАМВА	NKHATABAY	MZUZU
ΝΚΗΑΤΑΒΑΥ ΒΟΜΑ	NKHATABAY	MZUZU
LINGA	ΝΚΗΟΤΑΚΟΤΑ	SALIMA
MWANSAMBO	ΝΚΗΟΤΑΚΟΤΑ	SALIMA
NKHUNGA	ΝΚΗΟΤΑΚΟΤΑ	SALIMA
ZIDYANA	ΝΚΗΟΤΑΚΟΤΑ	SALIMA
MAGOTI	NSANJE	SHIRE VALLEY
MAKHANGA	NSANJE	SHIRE VALLEY
MPATSA	NSANJE	SHIRE VALLEY
NSANJE	NSANJE	SHIRE VALLEY
NYACHILENDA	NSANJE	SHIRE VALLEY
KANDEU	NTCHEU	LILONGWE
MANJAWIRA	NTCHEU	LILONGWE
NJOLOMOLE	NTCHEU	LILONGWE
NSIPE	NTCHEU	LILONGWE
TSANGANO	NTCHEU	LILONGWE
СНІРИКА	NTCHISI	KASUNGU
KALIRA	NTCHISI	KASUNGU

EPA NAME		
EPA	RDP	ADD
MALOMO	NTCHISI	KASUNGU
NTCHISI BOMA	NTCHISI	KASUNGU
KASONGO	PHALOMBE	BLANTYRE
MPINDA	PHALOMBE	BLANTYRE
NAMINJIWA	PHALOMBE	BLANTYRE
NKHULAMBE	PHALOMBE	BLANTYRE
TAMANI	PHALOMBE	BLANTYRE
WARUMA	PHALOMBE	BLANTYRE
BOLERO	RUMPHI	MZUZU
BWENGU	RUMPHI	MZUZU
MPHEREMBE	RUMPHI	MZUZU
МРНОМРНА	RUMPHI	MZUZU
MUHUJU	RUMPHI	MZUZU
NTCHENACHENA	RUMPHI	MZUZU
ZOMBWE	RUMPHI	MZUZU
CHAMPHIRA	S. MZIMBA	MZUZU
EMFENI	S. MZIMBA	MZUZU
KHOSOLO	S. MZIMBA	MZUZU
MBAWA	S. MZIMBA	MZUZU
CHINGULUWE	SALIMA	SALIMA
СНІРОКА	SALIMA	SALIMA
KHOMBEDZA	SALIMA	SALIMA
TEMBWE	SALIMA	SALIMA
LIRANGWE	SHIRE HIGHLANDS	BLANTYRE
MASAMBANJATI	SHIRE HIGHLANDS	BLANTYRE
MATAPWATA	SHIRE HIGHLANDS	BLANTYRE
MOMBEZI	SHIRE HIGHLANDS	BLANTYRE
NTONDA	SHIRE HIGHLANDS	BLANTYRE
THUMBWE	SHIRE HIGHLANDS	BLANTYRE
THYOLO BOMA	SHIRE HIGHLANDS	BLANTYRE
CHAFUMBA	THIWI LIFIDZI	LILONGWE
KABWAZI	THIWI LIFIDZI	LILONGWE
LINTHIPE	THIWI LIFIDZI	LILONGWE
LOBI	THIWI LIFIDZI	LILONGWE
CHINGALE	ZOMBA	MACHINGA
DZAONE	ZOMBA	MACHINGA
MALOSA	ZOMBA	MACHINGA
MAYAKA NGWERERO	ZOMBA	MACHINGA
MPOKWE	ZOMBA	MACHINGA
MSONDOLE	ZOMBA	MACHINGA
NTUBWI	ZOMBA	MACHINGA
THONDWE	ZOMBA	MACHINGA





Source: FEWS Net/Malawi

5. LGB Survey and Improved Storage

5.1 Results of The Larger Grain Borer Survey

RDP: Ntchisi

EPA Kalira

Location:	Kalira EPA Office
Result:	500 Larger Grain Borer in Five (5) days
Trap was set:	October - November and December, 2003

RDP: Ntchisi EPA Kalira Location: Kasangadzi Results: 350 Larger Grain Borer in Five (5) days Trap was set: October – November and December, 2003

RDP: Dowa

EPA Mvera Location: Mpenu EPA Office Result: The trap was not well taken care of.

Trap was set: October – November and December, 2003

RDP: Dowa EPA Mvera Location: Tikolore Result: The trap was not there hence any result. Date trap was set: October – November and December, 2003

RDP: Dedza

EPA Kanya	ma
Location:	Kanyama EPA Office
Result:	253 Larger Grain Borer in Five (5) days
Trap was set:	October – November and December, 2003

RDP: Dowa

EPA Bembeke

Location:Bembeke EPA OfficeResult:Three traps were said to have being sent to Chitedze but by the time of
the report, there was nothingTrap was set:October – November and December, 2003

RDP: Lilongwe East

EPA Mpenu

Location: Mpenu EPA Office

Result: 270 Larger Grain Borer but the trap was put high above the standard height of not more than 2 metres.

Trap was set: October – November and December, 2003

5.2 Information for the Improved Storage (mud plastered Nkhokwe)

EPA: Mvera Location Tikolole site Date Constructed 10 / 11 / 2003 No. of Participants: 15 (11 males and 4 females)

EPA: Mvera Location Kambware site Date Constructed 14 / 11 / 2003 No. of Participants: 10 (7 males and 3 females)

EPA: Kalira Location Kasangadzi site Date Constructed 27 11 / 2003 No. of Participants: 22 (15 males and 7 females)

EPA: Bembeke Location Namanolo site Date Constructed 21 / 03 / 2004 No. of Participants: 32 (20 males and 12 females)

EPA: Kanyama Location Livizi site Date Constructed 25 / 04 / 2004 No. of Participants: 15 (8 males and 7 females)

EPA: Mpenu Location Zakumva site Date Constructed 25 / 04 / 2004 No. of Participants: 23 (14 males and 9 females)



In Zakumba site, there is a common field to which the villagers contribute money from being engaged in road work, piece work, etc. The harvest of 2003/04 from the common field has been stored in the storage. Aside from this case, not many people may be interested in such storage except hot LGB areas since nowadays many people tend to store their maize in plastic bags placed in their house.

^{6.} Meteorological Data in Central Region NTCHISI ADMARC(Malomo for 2002/0382003/04): MONTHLY AND SEASONAL RAINFALL TOTALS (mm)

YEARS	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANNUAL	%/average
1988/89	0.0	0.0	0.0	37.1	44.8	167.9	545.4	270.0	878.5	65.0	2.4	0.0	2011	182
1989/90	0.0	0.0	0.0	0.0	151.6	307.5	292.2	215.2	151.3		40.0	0.0	1158	105
1990/91	0.0	0.0	4.4	. 0.0	5.2	133.9	399.4	128.4	200.0	92.5	0.0	0.0	964	87
1991/92	8.1	0.0		0.0	23.5	161.0	120.7	217.1	94.1	19.6	37.3	0.0	681	62
1992/93														
1993/94														
1994/95						95.7					0.0			
1995/96	0.0	1.2	0.0	0.0	0.0	199.8		310.2	222.4	6.7	0.0	3.8		
1996/97	0.0	0.0	0,0	0.0	0.0	210.0	179.4	229,6	104.8	90.5	0.0	0.0	814	74
1997/98	9.9	0.0	1.7	19.0	60.1	754.1	394.8	208.8	206.1	74,9	0.0	0.0	1729	157
1998/99	0.0	0.0	0.8	39.3	16.8	106.3	310.7	309.9	260.5	52.3	0.0	0.0	1097	99
1999/00	0.0	0.0	0.0	0.0	0.0	51.0	152.4	210.8	184.6	22.6	0.0	0.0	621	56
2000/01	0.0	0.0	0.0	1.5		152.4	193.6	407.9	376.2	116.4	0.5	0.0	1249	113
2001/02	0.0	0.0	0.0	0.0	17.5	104.2	287.5	255.0	124.0	96.0	0.0	0.0	884	80
2002/03				0.0	0.0	168.7	272.3	275.5	310.2	44.9	0.0	0.0	1072	97
2003/04				0.0	10.7	161.6	136.1	165.6	124.0	360.8	0.0		959	87
AVERAGE	1.6	0,1	0.7	7.5	27.5	198.2	273.7	246.5	249.0	86.9	5.7	0.3	1103	100

YEARS	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANNUAL	%/average
1988/89	0.0	0.0	0,0	15.4	40.6	145.0	343.9	248.6	335.6	14.8	2.9	0.0	1147	130
1989/90	0.0	0.0	0.0	0.0	119.7	200.3	257.6	213.6	16.1	13.0	19.7	0.0	840	95
1990/91	0.0	0.0	0.0	0,0	4.4	90.3	320.2	109.1	127.6	44.3	0.0	0.0	696	79
1991/92	3.1	0.0	0.0	6.9	37.8	164.8	105.1	121.3	165.2	0.0	0.0	0.0	604	68
1992/93	0.0	0.0	0.0	0.0	26.4	139.0	187.4	225.1	227.3	40.3	6.1	0.0	852	96
1993/94	0.0	0.0	0.0	0.0	29.3	14.7	192.8	156.6	102.0	19.0	0.0	0,0	514	58
1994/95	0.0	0.5	, 0.0	0.0	25.8	51.5	85.1	370.8	129.2	44,4	0.5	0.0	708	80
1995/96	0.0	0.0	0.0	0.0	0.0	131.8	249.0	263.9	263.5	0.0	10.6	0.0	919	104
1996/97	0.0	0.0	0.0	0.0	1.2	242.1	158.0	176.9	84.6	49.4	0.0	0.0	712	81
1997/98	2.7	0.0	1.6	28.6	160.4	463.6	313.7	191.2	115.6	32.8	0.0	0.0	1310	148
1998/99	0.0	0.0	0.0	9.8	29.4	115.4	163.9	261.9	281.0	50.9	0.0	25.6	912	103
1999/00	0.0	0.0	0.0	0	35.7	70.6	188.7	196.3	211.1	15	0.0	0.0	717	81
2000/01	0.0	0.0	0.0	25.8	89.3	131.6	116.0	295.5	940.6	38.2	0.0	0.0	1637	185
2001/02	0.0	0.0	0.0	1.3	16.9	155.5	280.2	242.7	13.6	82	0.0	0.0	792	90
2002/03	0.0	0.0	0.0	0.0	D.0	261.1	145.1	258.6	269,9	55.6	0.0	0.0	990	112
2003/04	0.0	0.0	0.0	0.0	1.2	116.5	198.9	312.6	112.6	53.1	0.0	0.0	795	90
AVERAGE	0.4	0.0	0.1	5.5	38.6	155.9	206.6	227.8	212.2	34.6	2.5	1.6	884	100

	LILONGW	E INTL AII	RPORT: M	ONTHLY A	ND SEAS	ONAL RAII	VFALL TOT	'ALS (mm)						
YEARS	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANNUAL	%/average
1988/89	0.1	0.0	0.0	16.0	14.8	89.9	374.9	195.7	360.5	13.0	5.2	0.0	1070	124
1989/90	0.0	0.0	0.0	0.0	108.0	249.8	233.2	137.8	25.7	79.9	28.4	0.0	863	100
1990/91	0.2	0.2	0.0	0.0	71.9	71.1	320.6	180.6	104.1	25.0	2.4	0.0	776	90
1991/92	0.0	0,0	6.0	18.6	44.4	200.2	142.2	117.6	144.4	5.0	8.3	1.7	688	80
1992/93	0.0	0.4	0.0	0.0	23.1	262.0	205.2	201.3	271.2	1.1	0.8	9.0	974	113
1993/94	0.2	3.6	0.0	0.0	17.4	30.1	353.5	197.6	27.0	3.0	0.0	0.0	632	73
1994/95	0.0	0.0	0.0	17.1	6.6	151.2	245.5	173.5	16.3	1.0	0.0	0.0	611	71
1995/96	0.0	0.0	0.0	18.3	9.0	131.2	218.1	423.9	284.8	2.1	15.2	0.0	1103	128
1996/97	0.0	0.0	0.0	3.9	14.0	324.0	154.6	226.4	50.3	119.5	0.5	0.0	893	104
1997/98	0.0	0.0	0.0	24.8	132.6	215.0	195.3	203.0	81.6	37.0	0.0	0.0	889	103
1998/99	0.0	0.0	0.0	9.5	76.3	137.6	263.0	187.4	264.0	29.8	0.0	2.1	970	113
1999/00	0.0	0.0	1.0	. 0.0	43.7	70.3	140.6	255.8	137.2	6.4	0.0	0,7	656	76
2000/01	1.6	0.0	0.0	39.3	74.4	83.7	190.2	235.5	167.1	8.5	0.0	0.0	800	93
2001/02	0.4	0.0	0,0	11.5	30.0	479.7	238.9	182.0	71.3	48.7	0.0	7.0	1070	124
2002/03	0,0	.00	11.7	1.7	15.2	230.9	337.9	250.8	263.1	11.1	0.0	0.0	1122	130
2003/04	0.0	3.1	0.8	4.4	38.2	202.7	193.1	103.1	83.3	33.8	0.0	0,0	663	77
AVERAGE	0.2	0.5	1.2	10.3	45.0	183.1	237.9	204.5	147.0	26.6	3.8	1.3	861	100

	CHITEDZE	E: MONTH	LY AND SI	EASONAL	RAINFALL	. TOTALS ((mm)							
YEARS	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANNUAL	%/average
1988/89	0.0	0.0	0.0	43.1	7.0	102.2	358.6	270.7	267.8	12.3	11.3	3.7	1077	123
1989/90	0.0	0.0	0.0	2.4	209.9	217.2	326.7	149.1	88.1	51.9	79.8	0.0	1125	129
1990/91	0.0	1.1	0,0	0.5	81.5	58.5	228.6	169.7	80.4	29.7	5.0	0.7	656	75
1991/92	1.1	0.0	23.0	1.1	108.9	176,9	131.5	20.7	147.3	11.1	0.6	0.3	623	71
1992/93	0.0	0.0	0.0	0.0	44.7	184.5	207.5	266.8	187.4	5.2	0.0	0.0	896	102
1993/94	0.0	0.0	5.0	1.2	60.0	42.1	380.8	66.2	39.6	3.7	0.0	0.0	599	68
1994/95	0,0	0.0	0.0	36.4	18.0	142.0	151.6	118.0	10.4	2,1	0.0	0.0	479	55
1995/96	0.0	0.0	0.0	0.0	0.0	289.9	123.6	349.6	228.5	47.4	9.7	0.0	1049	120
1996/97	0.0	0.0	0.0	3.2	10.3	184.7	257.1	139.5	60.2	131.5	9.7	0.0	796	91
1997/98	0.3	0.0	0.2	43.7	180.4	281.3	330.5	215.6	101.0	2.6	1.1	0.0	1157	132
1998/99	0.0	0.2	0.0	11.9	29.4	245.7	336.1	216.1	392.5	46.4	0.0	6.8	1285	147
1999/00	0,3	1.0	0.1	0.0	99.2	53.7	195.8	131,0	141.6	46.0	0.0	0.0	669	76
2000/01	0.0	0.0	0.0	17.3	148.4	79.8	316.8	234.5	174.4	16.5	0.0	0.0	988	113
2001/02	0.8	0.0	0.0	2.0	60.9	194.3	229.5	217.2	80.6	0.6	0.0	1.2	787	90
2002/03	0.0	0.0	8.4	0.1	53.3	206.5	324.7	209.2	230.8	5.0	0.0	0.0	1038	119
2003/04	0.0	1.7	0.9	0.0	5.4	113.6	222.9	258.3	89.1	83.8	0.0	0.0	776	89
AVERAGE	0.2	0.3	2.4	10.2	69.8	160.8	257.6	189.5	145.0	31.0	7.3	0.8	875	100

	DEDZA: N	MONTHLY /	AND SEAS	ONAL RAI	NFALL TO	TALS (MM	1)							
YEARS	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANNUAL	%/average
1988/89	0.0	0.0	0.0	19.6	15.0	181.6	504.3	321.0	295.5	27.1	3.2	0.1	1367	144
1989/90	2.5	0.0	0.0	1.0	89.5	259.9	288.4	129.2	37.0	39.1	55.1	0.0	902	95
1990/91	0.0	6.1	1.5	0.0	13.1	106.9	269.8	347.6	106.3	102.1	6.7	1.3	961	101
1991/92	4.2	0.0	7.1	2.0	188.2	279.7	202.3	66.8	83.8	43.8	4.8	1.2	884	93
1992/93	0.1	0.2	0.0	0.0	141.5	144.7	179.3	384.3	274.9	103.4	7.8	1.1	1237	130
1993/94	1.4	0.0	0.0	0.5	120.7	111.5	383.6	119.7	54.6	78.2	0.0	0.0	870	92
1994/95	2.3	4.7	0.0	15.1	16.1	176.6	326.0	114.3	36.4	29.3	1.0	0.0	722	76
1995/96	0.0	0,0	0.0	0.0	17.5	110.9	222.2	201.8	300.0	18.5	9.3	0.0	880	93
1996/97	0.6	0.0	0.0	11.2	25.0	266	384.9	358.6	58.6	49.0	0.0	0.0	1154	122
1997/98	6,1	0.0	1.9	70.1	81.5	187.5	200.4	145.7	114.5	65.5	1.0	0.0	874	92
1998/99	0.5	0.0	0.0	1.2	39.9	115.5	254.8	163.2	247.5	4.6	0.0	0.0	827	87
1999/00	7.2	0.0	0.0	0.0	40.0	55.5	202.0	243.2	208.1	59.3	2.0	0.0	817	86
2000/01	0.0	0.0	0.0	15.4	179.2	108.6	171.6	203,9	159.9	8.8	0.0	0.0	847	89
2001/02	3.0	0.0	0.0	0.0	29.4	220.6	225.0	233.4	115.6	16.5	0	6.9	850	90
2002/03	1.7	3.3	9.9	1.2	1.3	296.3	538.4	276.7	152.5	7.7	0.3	0.0	1289	136
2003/04	3.3	7.3	0.0	0.0	16,6	142.0	177.2	79.7	131.5	137.5	0.0	0.0	695	73
AVERAGE	21	14	13	8.6	63.4	172.7	283.1	211.8	148.5	49.4	5.7	0.7	949	100



7. Survival strategy during the famine

During the famine 2001-2002, many farmers did not have any food in October 2001-March 2002, especially in January-February 2002, so that they could not cultivate rainy season plots. They had to earn a little money everyday to buy 1 or 2kg of flour.

- Mr. Elias Mwanza, a member of Tilime Club, said "Since we could not eat, we did not cultivate and we worked for others' farms. If you work for a day, you get two plates or about 2kg of maize." "Since only few people were cultivating at that period, many people went to Dowa to find piecework. I think 60% of the villagers failed to cultivate in rainy season 2001-2002. Only one person in the village had enough food." "I was also making charcoal about three times a month. I make 10 bags of charcoal at a time. During the famine, I could sell charcoal only at MK40/bag. Maize costs as much as MK40/kg at that time. Sometimes I had to exchange three bags of charcoal with 3kg of maize."
- Mr. John Chakana, Vice-chairman of Tilime Club, said "Since there was no food to eat, I made charcoal three times a week. I made three bags (90kg) and each bag could be sold at MK100-150."
- Mr. Foster Divala of Tikolore Club said "I made charcoal from January to April 2002. I made 14 bags (50kg)/month and sold at MK40-50/bag."
- Mr. Bison Kuma, Secretary of Mtuwanjovu Club, said "I fetched firewood, made MK50-60 and bought flour at MK40/kg almost everyday."

Survival Strategy during the Famine (such as January - February 2002) (How much work is necessary to buy 20kg of maize flour per month at MK40/kg)

Cahrcoal Working Fetching Small Piecework making in town firewood business Mat. baske Farming Difficult to 3-4 times 3-4 times Everyday 2-4 times Everyday No immidiate cash a month (long-term) a week a week Remarks Option Charcoal making Mk200-300/time. Reliable. More for men. Fetching firewood MK150/week. Reliable. More for women. Small business MK150/week. Reliable. More for women. Piecework As low as MK50-100 and difficult to find in famine. Working in town As low as MK800-1,000 if farmers want to work during famine. Mat, basket etc. making Difficult to sell in famine. Cannot afford if there is no food. Women may remain and continue while men take Farming other options.

Gravity irrigation in dry season increases food security significantly by more production of maize, by more income generation and by harvesting twice not only once. More farmers can concentrate on farming in rainy season and will not be necessary to take other emergency options.

8. Distribution of Maize: from Staple Food to Cash Crop

8.1 Dry maize

The Study Team collected the information of monthly prices of maize at seven sites, namely Mtuwanjovu, Ngoni, Tikorole, Tilime, Mchiku, Namanolo and Katema. The prices of dry maize near Lilongwe such as Ngoni are relatively high, and are MK550-800/50kg during May-July and MK1,000-1,200/50kg from December to the middle of March. These of the sites far from Lilongwe such as Katema are relatively low, and are MK300-450/50kg during May-June and MK600-750/50kg from September to February. The difference between high price at deficient time near the city and low price at harvesting time at far from the city could be three times or four times. (Note: Actual prices are by 20l pail and converted into the prices by 50kg bag for comparison.)



Figure 8.1 Monthly Price of Dry Maize per Bag (50kg) in 2004

The Study Team also found that only some rich farmers in the village sell dry maize by bag right after harvesting time, and most farmers keep the dry maize up to deficient time. Since maize is the staple food, they sell dry maize only when they need cash urgently; for milling dry maize, for daily necessities such as soap, for fertilizer, and for school expenses etc., or when their fellow farmers have run out of dry maize. The surplus of dry maize is kept in the village in this way and distributed to the fellow farmers at deficient time through small trade by 20l pail (15-17kg) or by plate (1kg), through wages for piecework and sometimes through charity. It could be considered as a kind of safety net for the needy.

Also maize of smallholder irrigation comes right at the most deficient time. If they can afford to sell maize in green, they can buy dry maize, which is expensive compared with the price at harvesting time but still much cheaper than the price of green maize. They can eat some green maize and make the rest dry and consume, even if they cannot afford to sell green maize.

8.2 Green maize

Dry season green maize is definitely a cash crop for farmers. The prices of green maize per cob in November 2004 were MK2-6 at Ngoni and MK5-10 at Mtuwanjovu. Both sites are close to Lilongwe, so that the difference seems to come mostly from the quality or the size of maize. Unlike dry maize, quality factor is significant in the pricing of green maize. The difference of quality or size between Ngoni and Mtuwanjovu could be twice and the observations by Ngoni members support the assumption. Mr. Yamikani of Ngoni Club said "We bought new seeds (SC403), doubled the fertilizer and everyone participated better than dry season 2003, yet, the harvest is about a half in dry season 2004." Mr. Shema Masika, Chairman of Ngoni Club, said "The reasons for a poor harvest might be: 1) we planted SC403 too close, 2) we applied fertilizer on one side, not both sides, 3) soil is not good, and/or 4) the quality of seeds is not good. Mr. Yobu Chinthuza said "I could make only a half profit of last season. I think it is because of SC403 and we will use Mashika again in dry season 2005."



Figure 8.2 Monthly Price of Green Maize per Cob in 2004

Mr. Bison Kuma, Secretary of Mtuwanjovu Club, said "The harvest of dry season 2003 is not good because of stalk borer. I could not make any profit. We bought SC403 instead of using reused seeds and there was no stalk borer in dry season 2004. Also the price of maize was good because we could sell earlier. I sold less than half of the harvest at MK2,800."

It is difficult to sell green maize, if the site is far from the market and the quality of the maize is not so good. Mr. Titani Windman of Katema Club said "Only very lucky farmers could sell green maize. A middleman from Mponela came once and bought MK570 from me, MK280 from Manuel and MK300 from Biziweki. He told us to come back again, but he never came."

APPENDIX-5 IRRIGATION DEVELOPMENT

Chapter 1 Examination of Treadle Pump

The Department of Irrigation has identified the treadle pump as an appropriate technology for smallholder irrigation and been promoting it with assistances from foreign donors. In promoting the treadle pump, this Study proposes the way, which the beneficiaries should buy the treadle pump without any subsidies from external agency, for it should be appropriate in terms of not only technically but also financially. If the irrigation using the treadle pump pays farmers, it will not really require the subsidy for farmers, which will make the government finance tight.

On the other hand, it is expected that the benefit from the irrigation during winter season will raise the purchasing power of farmers, leading to increase of government tax revenue. Dry season agriculture can contribute to the national food security, as well. Subsidizing policy could be justified in these senses. But as long as farmers can benefit enough for repaying the investment in the treadle pump, subsidy will not be necessarily required.

Having considered such way, it is proposed to establish a loan scheme in line with promoting the treadle pump and the loan scheme would better form a revolving fund to secure the resource of procuring the treadle pump. Establishment of the loan program will help the farmers who have no capital to acquire the treadle pump. In fact the government of Malawi has already started the "Procurement of Treadle Pumps on a Loan Scheme" (Loan Scheme) since July 2002 with the initial provision of the treadle pump to the Government by HIPC fund.

As the loan scheme has been established, this Study would better not individually establish the scheme as a verification project, but participate in the monitoring and evaluation of the government loan scheme and make some recommendations to improve the scheme. By July 2004, total of 47,280 treadle pumps have been distributed to farmers in the eight ADDs under the loan scheme since 2002. The system, procedure, and issues of the loan scheme are described and the issues to be considered are discussed below:

		Numbe	er of Treadle	Pumps Dist	tributed		
ADD	PPE	SHIP	HFCDP	ADB-ASP	JICA	Local PPE	Total
Shire Valley	535	400	-	1,400	4,000	-	6,335
Blantyre	1,627	600	-	1,250	4,000	-	7,477
Machinga	445	-	-	1,250	4,000	-	5,695
Salima	445	-	834	625	4,000	-	5,904
Lilongwe	80	-	314	1,320	3,000	1,000	5,714
Kasungu	825	-	250	1,300	4,000	-	6,375
Mzuzu	230	-	340	1,140	4,000	-	5,710
Karonga	970	-	-	100	3,000	-	4,070
Total Distributed	5,157	1,000	1,738	8,385	30,000	1,000	47,280

Table 1.1 Treadle Pump Distribution Summary As At July 31, 2004

Source: Department of Irrigation - Stores Headquarters

PPE: Pro-poor Expenditure

SHIP: Smallholder Irrigation Project (ADB)

HFCDP: Horticulture & Food Crop Development Project (ADB) ADB-ASP: African Development Bank - Agriculture Support Project

1.1 Loan Scheme for the Treadle Pump by the Government

Under the loan scheme, the loan can be provided to individual, but the government recommends farmers to form a club to buy the treadle pump. There are several merits for forming club, such that training of how to use treadle pump by EPA officers will be much efficient, and if one of the farmers in a club is failing to repay the loan, other members can assist and advise the one in any manner. The club members will not get any penalty even if one of the members fails to repay. If one fails, the Government is authorized to withdraw the pump, but the Government expects that the club will help the one for fulfillment of his/her duty or ask the one to surrender the pump and give it to other in the village.

For the repayment procedure, farmers are supposed to deposit the money in the Government bank account, a trust fund at National Bank of Malawi. However, due to remoteness of the rural area, farmers cannot easily go to the bank to repay the loan. Therefore, the Government is proposing farmers to open ordinary saving account in Malawi Rural Finance Company (MRFC), which has 163 field offices all over the Country. Farmers are asked to deposit whenever they get money and the account can be used not only for the repayment but also for their own activities.

Farm mechanization officers in RDP will go round the field with assistant irrigation officer and extension officer in RDP and the officer is the one who receives cash from the club. When the officer comes to the field, the club is requested to withdraw cash from MRFC to repay their loan. The farm mechanization officer gives original receipt to the club and the duplicate will be kept at ADD. The farm mechanization officer will deposit the cash in the government account and the photocopies of the deposit slip made at ADD will be distributed to ADD, RDP, EPA and the club. Original deposit slip is submitted to the DOI. The farm mechanization officers are expected to go round the field soon after the every harvest season. This proposal was done by the DOI and expected to apply in all the ADDs.

1.2 Financial Viability of the Loan Scheme for Farmers

Here shows a cash flow analysis to examine the financial viability of the treadle pump. Income from the dry season crop using treadle pump versus capital and O&M is evaluated taking sample from the verification projects. With information collected and field observations, an analysis is tried with the assumptions below:

- To grow hybrid maize for 0.1 ha during dry season and the produce will be sold as green maize (MK5/cob).
- Cash inputs with seed and fertilizers
- Duration of the treadle pump is 10 years and the O&M cost is MK1,200 /year borne by replacing rubbers inside the cylinders etc.

Output/10a			
		5	MK/corm
	3,200 cob	16,000	MK/1600cob
Total Gross Income		16,000	MK/10a
Cash Inputs			
Seeds	12 kg/10a	1050	MK/10a
Fertilizer	-		
Bed dressing	50 kg/10a	1900	MK/10a
Top dressing	50 kg/10a	1900	MK/10a
	-	4,850	MK/10a
Net Income		<u>11,150</u>	MK/10a
Family Labor Value	640hrs*6MK/hr	<u>3,840</u>	MK/10a
Net Income (2)		<u>7,310</u>	MK/10a

	Table	1.2.1 Cash	FIOW Allarys		Season wa	ize. 0.1 lid)	
Vear	Renavment	08M	Total Cost	Income	Balance	Family labor va	lue considered
Tear	Кераушент	Udivi	Total Cost	income	Dalarice	Income	Balance
1	3,000	1,200	4,200	11,150	6,950	7,310	3,110
2	3,000	1,200	4,200	11,150	6,950	7,310	3,110
3	3,000	1,200	4,200	11,150	6,950	7,310	3,110
4		1,200	1,200	11,150	9,950	7,310	6,110
5		1,200	1,200	11,150	9,950	7,310	6,110
6		1,200	1,200	11,150	9,950	7,310	6,110
7		1,200	1,200	11,150	9,950	7,310	6,110
8		1,200	1,200	11,150	9,950	7,310	6,110
9		1,200	1,200	11,150	9,950	7,310	6,110
10		1,200	1,200	11,150	9,950	7,310	6,110
Total	9,000	12,000	21,000	111,500	90,500	73,100	52,100
			Average Ann	ual Balance:	9,050		5,210

Table 1.2.1 Cash Flow Analysis of TP (Dry Season Maize: 0.1 ha)

As a result of the analysis shown the table above, the income by the treadle pump irrigation is high enough to repay the cost and considering the duration of the treadle pump assumed here as 10 years, farmers could get the annual surplus of MK 9,050 on average by the time the pump is replaced. In case family labor value is considered for the cost, the surplus of maize crop will be MK 5,210 on average of 10 years. It can be evaluated from the analysis that the treadle pump loan is feasible in terms of financial cost-benefit balance. It should be, however, remarked that there will be several constraints to realize the benefit such as loss of produce, fluctuation of market price, growth retardation by continuous cropping, etc.

1.3 Issue on Repayment Condition

When farmers apply for the loan, the club formed by the farmers and the RDP in their jurisdiction will make an agreement. The cost of the treadle pump is MK 7,500 and farmers can apply for the loan to repay in three years. In case of the loan, farmers are to pay MK 1,000 per crop season, or MK 3,000 per year. The agreement of the loan only indicates the amount to repay in three years by the farmers, which is in total MK 9,000, and it figures out the interest rate at 3.81% per crop season or 9.70% per annum.

		Lotinatio	ii ei / iiii du	interest ridte er		
Year	Capital	Int	erest	Total Debt	Repayment	Balance
	(MK)	(%)	(MK)	(MK)	(MK)	(MK)
1	7,500	9.70	728	8,228	3,000	5,228
2	5,228	9.70	507	5,735	3,000	2,735
3	2,735	9.70	265	3,000	3,000	0

Table 1.3.1 Estimation of Annual Interest Rate of the Loan Scheme

The interest rate would not necessarily be as high as commercial basis as the government scheme to promote the treadle pump to as many farmers as possible taking into account the national food security. However, if the interest rate is lower than the inflation rate of the country, it results in subsidizing the interest to the farmers by the Government. Therefore, it is recommended in the agreement to set the interest rate at least equal to the inflation rate of the country instead of stipulating the total amount to be repaid.

Stipulation of interest rate instead of total amount of repayment on the agreement will comfort the application of deduction for earlier payment, setting of grace period, and down payment. If farmers repay their debt earlier than scheduled, their interest burden must be deducted. For consideration of grace period, the interest during the grace period should be calculated and shouldered by the borrower. In case the farmer pays the down payment, such

privilege should be reflected to the remaining debt. It will be easier for any repayment arrangement if the interest rate is initially set upon the loan agreement. Following are the sample calculations of repayment setting interest rate at 10%, which is equivalent to the annual inflation of consumer price in 2003.

		Campie	Repayment			ootinato
Year	Capital	Int	erest	Total Debt	Repayment	Balance
	(MK)	(%)	(MK)	(MK)	(MK)	(MK)
1	7,500	10.00	750	8,250	3,016	5,234
2	5,234	10.00	523	5,757	3,016	2,741
3	2,741	10.00	275	3,016	3,016	0
		Total Repa	iyment		9,048	

Table 1.3.2 Sample: Repayment in Three Years with 10% of Interest Rate

		Total Kept	ayment		3,040	
	Table 1.3.3	Sample	: Total Loan	Cost in Case of	Earlier Repayme	<u>nt</u>
Year	Capital	Int	erest	Total Debt	Repayment	Balance
	(MK)	(%)	(MK)	(MK)	(MK)	(MK)
1	7,500	10.00	750	8,250	5,000	3,250
2	3,250	10.00	325	3,575	3,500	75
3	75	10.00	8	83	83	0
		Total Repa	avment		8 583	

Table 1.3.4 Sample. Total Loan Cost in Case of One-Teal Grace Ferror	Table 1.3.4	Sample: Total Loan Cost in Case of One-Year Grace Period
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Year	Capital	Int	erest	Total Debt	Repayment	Balance
	(MK)	(%)	(MK)	(MK)	(MK)	(MK)
1	7,500	10.00	750	8,250	-	8,250
2	7,500	10.00	750	9,000	3,290	5,710
3	5,710	10.00	571	6,281	3,290	2,991
4	2,991	10.00	299	3,290	3,290	0
		Total Repa	iyment		9,870	

1.4 Status of Treadle Pump Revolving Fund as of November 2004

According to the Irrigation Section Annual Progress Report of Lilongwe ADD in 2004, the loan recovery rate so far has marked merely 2.77% (MK1,257,770 out of MK45,405,000). In deed, the Study Team has found in Mpenu EPA, Lilongwe RDP, Lilongwe ADD that by the end of June 2004, only one farmer has repaid his first repayment out of 40 who got treadle pump in the EPA.

Possible constraints for repayment collection would be high transaction costs, namely the process of handing over the treadle pump to farmers and logistics ability of the government. Evaluating the interviews to farmers, it seems that rough-and-ready way of distributing treadle pumps on the ground last year did not convince farmers of repaying, though farmers are aware of the loan. Treadle pump was supposed to be delivered to farmers after careful assessment of their circumstances, but the government guided assessment procedure would have been too detailed to go thorough against the capability of RDP / EPA and then actual practice ended up with the rough-and-ready way.

Borrowers are supposed to deposit their repayment in the government's account at National Bank of Malawi. However, regarding the difficulty for them to do that, the Government has proposed the loan collection by RDP officers. This proposal has not been materialized,

either. Lack of logistics would greatly constrain the RDP / EPA staff to collect repayment, as well.

There may be a possibility that the loan condition could be severe for farmers, hence hindering their will to repay. But as this has been analyzed above, the treadle pump operated irrigation farming can be economically feasible. One constraint could be of marketing. If farmers consume the produce made by the treadle pump, the repayment may be delayed. But still farmers seem enjoying the dry season crop by the treadle pump as the plots, in which maize are well growing at this time, are seen a lot along the rivers.

1.5 Recommendations

Considering the poor performance of repayment, it is recommended that a large-scale financial scheme has more risks to fail because of such high transaction costs to run the scheme, while small-scale one such as micro-finance scheme is more promising around the world. It is manageable for small group to handle a little amount of money to vitalize their economic activities with their mutual trust and bonds of friendship.

From this view, it is recommended that the government would better sell the treadle pump without installment and the financial scheme should be delegated to farmer side. By selling treadle pumps in cash, the government can reduce risks of default and also can sell them cheaper than by installment, which enforces interest (MK7,500 in cash, instead of MK9,000 by loan in three years). For farmer side, as far as the feasibility of the treadle pump is verified, they could find a way to source money if they really want them. Farmers could form a group to run a revolving fund, or to run merry-go-round and these financial scheme could be more operational.





Test Gradient	Surveyed Distance	Expected Elevation	Surveyed Elevation	Error	Actual Gradient	Used L/L
	E	шш	mm	mm	1/n	
1:1,000	300	300	700	400	429	A
1:500	300	600	1400	800	214	A
1:300	300	1000	1500	500	200	A
1:200	300	1500	2000	500	150	A
					11 -	
Testing No.2						
Test Gradient	Surveyed Distance	Expected Elevation	Surveyed Elevation	Error	Actual Gradient	Used L/L
	E	шш	mm	шш		

2. Comparison between Line Level and Survey Equipment (dumpy level) Testing No.1

Used L/L		ю	A	o	A	в	В
Actual Gradient		364	278	235	146	422	175
Error	mm	175	260	225	487	96-	72
Surveyed Elevation	mm	275	360	425	687	237	572
Expected Elevation	mm	100	100	200	200	333	500
Surveyed Distance	E	100	100	100	100	100	100
Test Gradient		1:1,000	1:1,000	1:500	1:500	1:300	1:200

3. List of the 2nd Generation Project (in 2004)

No. Irrigation	Club Stre	am Name	Village	Village	Village	Village	Village	Village	EPA	RDP	Memi	bership	Landowner	Developed area	Potential Area Ca	anal length	Weir Type
1 Kaniawa	Kaoiiite										Total Mi	ale Female	0	(ha)	(ha)	Ê c	
2 Ndele	Nriele						-	Valinda Valinda	Chitekwere	llongwe cast	2 ;	nc	~ ~	0.50	ne.2	204	tatural diversion with a small pand
3. Dzimbiri	Dzimbiri							Nthumbire	Chitekwere	ilonowe Fast	5 6	10	1 C	0.00	00- 00-6	185	nclined standard weit
4 Kakokhwe	Kakokhw	/e						Galance	Chitekwere	ilonowe East	21	5	1 8	00.0	4 00	185 N	Jahral diversion with a small hand
						Eletter de alle de la comparte										and a second second	
5 Mgunda	Mgunda		Vidakira					Masina	Chitekwere	liongwe East	20	Ø	9	180	4.00	350 llr	nclined standard weit
R Naminun	Naminur		Chidamula	Nthatche				Chikapaza	Chitekwere L	Bongwe East	69	41	8		ľ		
9 Lingodzi	Lingedzi		Asocioka	Mtenthamawa				MISHZIKa Kuchama	Chitekwere L	Hongwe East	<u>8</u>		4				
10 Chipela	Namikoko	0	Aanjagulana					Nkhodzo	Nyanja	ilongwe East	31	25	6	0.30	1.00	245 N	tatural diversion with a small band
11 Tiyamike	Nathenje		Chakasuka	Dembo	Jonasi			Chisindo	Nyanja L	ilongwe East	21	1	4	0.10	1.50	147 V	(ertical (double walls)
	Mwanan	dombe	Inpeni	-				Mchuchu	Nyanja	itongwe East	14	5	9	0.20	2.30	240 V	fertical (double walls)
15 Lineadai	Wwanang	g'ombe	Bunguzu	Danda	Khwamba			Chimpanda	Nyanja L	Ilongwe East	50	36	4 50	0.80	3.20	1,300 S	iand bags
16 Katindidi	Katunduh		fesaya dakanya 2	Millioni	¢ile	Alualan		Sandukila	Nyanja	Iongwe East	39	28	1 23	0.50	6.00	203 N	lasonry weir
17 Kachidu	Aduitud.		VIGNALLYA Z			пуака		Makanya	Nyanja	ilongwe East	25	18	7 19	0.20	0.80	105 S	and bags
18 Chisambiro	Mchentch	ar X	(atakata	Gumbi	Kudambo	Chimkwamhata		Kulinda	MKWRGZ	ilonoma	11	633			8 (IC	N 107	laturat diversion with a small pand
19 Njuwala	Nankhom	nba 🥼	berete	Mohamba				Newsla	Mkwinda	lionawa	and the second	36 10	2 2 2	000		N 165 ansat	erucar (double waik) Ministration and becari
20 Chikowa	Chikowa		Dzidzi	Sele	Lombwa	-		Mbewa	Mikwinda L	ilongwe	40	29 1	1	0.25	5.00	6 8	
21 Chisomo	Male							Gomani	Mkwinda [alongwe	20	14	6 10	090	1.20	V 092	ertical (double walls)
22 Nanjiri	Nanjiri	<	Mphanje					Malimbwe	Mkwinda L	Jongwe	30	27	3	0.55	2.00	250 V	'ertical Standard weir (single wall)
23 Chapendela	Miale							Chapendeka	Mtwinda L	ilongwe	18	11	7 18	0.70	1.00	260 V	ertical (double walls)
24 Jojwe	Miale							Nyanga	Mkwinda L	ilongwe	20	14	6 20	0.50	1.20	150 V	(ertical (double walis)
1 ZO STUDIOS																	
20 UZama	Mera		Jzama					Nachite	Chiwamba L	ilongwe	18	18	0	0.80	0.80	200 V	ertical standard weir (single wall)
Z/ Msangu	Msunga)	Chandamata	Mwesawena	Kombe	Chapata		Biwi	Chiwamba	ilongwe	20	13	7 20	0.80	7.00	1,300 N	latural diversion with a small band
Z8 Minetsanjala	Mera		Vipesa	Chikomeni				Kauma	Chwamba L	flongwe	41	34	7 0	1.20	1,20	1,500 V	entical (double walls)
29 Muomba	Muomba)	Chitukula					Mtengo	Chiwamba	ilongwe	21	17	4 3	0.80	1.90	472 V	ertical standard weir (single wall)
The second second second	ALL STATES AND ALL STATES	Salution of the second second	Appropriate and and appropriate	Mineral Mineral Mineral													
31 Makhamba	Balano'or	nga / mbe k	asandulika	Sosola				Manthomba	Chiwamba		27	+ +		0++	02 C	3 102 6	Deres Deres
32 Botowi	Nankhan	60	Achilikiza					Flinasi Meamho	Chivanua	iongwe	2 5	75			7 Z	2 40.77	ealed Sand Bags
33 Chimphuno	Nankhan	eu						Chimobulad	Chiwaniba	anglion ippositio	07	0		0.60	0,-1	041	
34 Chibele	Chibele	X	Calulu	l iwela				Variala	Chivenba	ilonomo	2 4	40	7 V	0.0	00 0	- L04	
35 Chitentha	Chitentha	. <u>×</u>	combe	LINCIA				Kawala	Chiwamba	ilonowe	21	14	2 10	0 8 C	3.00 A.00	N 020 F	latural diversion with a small pand
36 Tikondane	Mbvumbu	7	shwatcha					Kombe	Chiwamba	ewonoi	30	- CC	100	08.0	0.0	1 024	idual et diversion i wur a sinan band dionat sunnortad wair
37 Tithandizeni	Balang'or	mbe	Aanyenje	Chimdidi				Nvemba	Chiwamba	ilonawe	1 5	2 ac	24	0.00	0.40		rigoriai auptorica weii articel (double weils)
38 Nkholombe	Chipula							Kamsonowe	Chiwamba	ilonowe	i 5	2 P	10	010	150	552 V	erver (double wats) entical (double wats)
39 Mphongolo	Nanjiri							Mzingo	Chitsime	llonawe	18	-		030	0.50	V UO1	enteal (double wails)
40 Tiyambenso	Kachemb	bere						Mangadzi	Chitsime	longwe	10		10	0.16	2	250 N	atural diversion with a small band
41 Kadakala	Ngala							Msipu	Chitsime 1	lionawe	15	4	- -	0.15	0 15	450 A	sorina
42 Ngala	Ngala							Nkhuku 1	Chitsime L	ilongwe	19	18	19	0.19		305 A	spring
43 Mvunguti	Kadakala	_						Ndalama	Chitsime L	ilongwe	18	18	0 18	0.20	0.02	355 A	spring
44 Mtsilo	Nkulu		Cement	Mtambo	Khombe		_	Chipyse	Chitsime L	ilongwe	17	12	5 17	1.30	0.80	800	
45 Msangu	Chaulimi							Mhimbo	Chitsime	ilongwe	18	13	5 18	0.70	1.40	215	
40 likondane	Mwanam	langa					-	Mwanamanja I	Chitsime	ilongwe	15	14	10	0.80	1.00	220	
4/ Matchedza			Awansangu	Mariko			_	Chipyse	Chitsime L	ilongwe	25	17	8 25	17.00	8.00	2,300	
40 Minanthanina			hombe	Chituyi				Khombe	Chitsime L	ilongwe	36	28	8 36	0.76	6.50	7,000 V	erticat (double walls)
43 Umgazi	INKWECHE	619						Kanama	Chigonthi	ilongwe	0	10	0	1.50	8.00	250 V	ertical Standard weir (single wail)
50 Kaylala	UZIWE		vthayamanja				-	Chizululu	Chigonthi L	нолдже	ष्ठ	17	7 5	0.75	15.00	155	
52 Tionerane	Chinati		awia	NDWADWA	Guzaukonde	Chitseka	Mphetu	Chikwanila	Chigonthi	Hongwe	235	177	8			3,000 N	atural diversion with a small band
53 Kavovo	Chamtam	ahr							Chigonthi	Hongwe	2	4	12	1.20	1.50	320 N	atural diversion with a small band
54 Makoza	Nthupa		hilamha	Ndatama					Chigonthi L	angwe	21	12	11	0.80	1.60	436 N	atural diversion with a small band
55 Nafunga	Nafunda							Vianuca Aroa 26		iongwe	17		23	20.00	35.00	3,500	
56 Tamvera	Ukonde	2	falamala					Zintambila	Mpenu	lonowe	35	ţç	3 0	02.00	00.0	170 1	
57 Nkokolola	Machite	2	Awatibu					Katurzi	Moeni	awnonli	2	1 4		0-00	200	14021	Arical (do. bioalle)
1.50 Murantoput	5 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							NUMBER OF STREET, STRE			55135 S.C.R.						
59 Takumana	Namwili		Shakula	Chaponda				Zidze	Mpenu [L	itongwe	16	11	5	0:30	2.50	150 V	ertical standard weir (single wall)
60 Ngawa	Namwili		Chikuni	Mwataya				Chamchenga	Mpenu L	ilongwe	17	4	3	0.40	1.20	110 1	ust elected a ridge
01 Umodzi	Kapen	V V	Aakombe	Mthera				Vagomero	Mpenu L	ilongwe	13	6	4	1.50	2.50	150 N	atural diversion with a small band
62 Mwendayenda	Mwenday	venda	embwe			444		Kapumoha	Kanvama IC	e07a	101	10				700	wina / ctard are walk

3. List of the 2nd Generation Project (in 2004)

No. Irrigation Club	Stream Name	Village	Village	Village	Village	Village	Village	EPA	RDP.	Tatal 1 Men	ibership	Landowner	Developed area	Potential Area C	anal length
63 Khulo	Livizi	Tembwe					Nsonthe	Kanvama	Ded7a	121		e.	200	10 00	600 Elnclined standard weir
64 Chigwembere	Chimphunzi	Chayera					Chiowembere	Kanvama	Dedza	205	35	00	5.00	2002	500 Wertical (double walk)
65 Mvumba	Mvumba						Kapumpha	Kanvama	Dedza	10	9	4	5.00	8.00	400 Masonry weir
66 Chiwenga	Chiwenga						Madzedze	Kanvama	Dedza	60	e G	2	2.10	3.50	250 Inclined standard weir
67 Mpira	LIVIZI	Mkumphira					Khongoni	Kanyama	Dedza	4	12	2	3.50	5.20	1.200 Inclined standard weir
68 Lrmbikani	Msodzi	Mpalale					Mpalaie	Kanyama	Dedza	31	23	8 31	2.00	2.50	740 Vertical standard weir (single wall)
69 Livizi	Livizi						Nduwa	Kanyama	Dedza	33	17 1	6 19	1.91	10.00	700 Vertical (double walls)
70 Chitaya	Chitaya						Kanguswa	Kanyama	Dedza	11	7	4 4	2.50	6.00	210 Natural diversion with a small band
71 Chimżedze	Chimdzedze	Nthumbwang					Khombe	Kenyama 👓	Dedza	12	9. S	4 00000 0000 2	2.50	6.50	345 Natural diversion with a small band
72 Mchiku	Mchiku	Lumwira II	Kasumbu	Kankundi			Mphale	Kanyama	Dedza	25	8	7 1	1.50	3.00	151 Vertical (double walls)
73 Chikhasu	Chikhasu	Kanjondo	Lummia II	Kumadzi	Wahale		Kasumbu	Kariyama	Dedza	12	4	8	0,70	14.00	386 Masong weir
74 Tulinge	Thima						Kuulongwe	Mayani	Dedza	12	4	8 12	0.40	1.30	18 Natural diversion with a small band
75 Chigumuchire	Thima						Kuulongwe	Mayani	Dedza	12	7	5 12	0.30	2.50	210 Natural diversion with a small band
76 Kachenzi	Monje	Mkamuta	Nkundi				Lingala	Mayani	Dedza	28	10	3	3.50	8.50	1,200 Masonry weir
78 Limbikani	Mkamula	Makawa				_	Mkamula	Mayani	Dedza	10	10	1 1	0.80	4.50	450 Vertical standard weir (single walt)
79 Nyangawira	Nyangawira						Mterrwende	Mayani	Dedza	26	22	4	0.74	6.00	351 Vertical (double walls)
80 Ngoma-Mtambo	Ngoma	Mtemwende					Mtambo	Mayani	Dedza	10	φ	1 9	06.0	0.82	171 Natural diversion with a small band
81 Monje	Monje		1				Mternwende	Mayani	Dedza	4	4	0 4	0.65	1.30	210 [Vertical (double walls)
82 Ng'ombe Chitendetuka	Ngombe					-	Chitendeluka	Mayani	Dedza	27	6	8 0	0.30	1.20	200 Inclined standard weir
83 Ngoma Mtemwende	Ngoma				1	_	Mtemwende	Mayani	Dedza	80	7	1 8	0.71	1.12	350 [Vertical (double walts)
84 Uowa	Dowa						Mtonya	Mayani	Dedza	17	17	0 17	0.30	5.00	350 Vertical standard weir (single wall)
ezpepu C8	Monje	Chimatiro	Mtsiriza				Lodzanyama	Mayani	Dedza	8	7	3	0.30	4.20	554 Natural diversion with a small band
86 Kachikho	Thima	Kumchera					Kuulongwe	Mayani	Dedza	15	5. 1	0 14	1.30	2.80	150 Vertical (double walls)
8/ Kamusi	Nadzipulu	Balala					Kamusi	Mtakataka	Dedza	7	5	2 2	0.10	0.30	15 [Vertical standard weir (single wall)
88 Mlambe	Nadzipulu	Chikaola	Kundole	Kakhoma			Kamala	Mtakataka	Dedza	21	10.	1 14	3.00	3.00	368 Trigonal supported weir
89 Nakaingwa	Nakaingwa						Songwe	Mtakataka	Dedza	15	o	6 12	2.50	2.50	180 Inclined standard weir
90 Mgwirizano 1	Nadzipokwe	Ndemela					Kalindiza	Mtakataka	Dedza	-	-	1	0.20	0.20	20 Masonry weir
91 Mgwirizano 2	Nadzipokwe	Kalindiza					Ndelema	Mtakataka	Dedza	<u>5</u>	11	6	0.80	1.20	355 Masonry weir
92 Mgwirizano 3	Nadzipokwe	Ndemela					Kalindiza	Mtakataka	Dedza	~		2	0.30	0.30	Z0 Masonry weir
93 Mgwirizano 4	Nadzipokwe	Kalindikiza					Ndelema	Mtakataka	Deriza			5	0.40	0.60	328 Masonor weir
94 Mgwirizano 5	Nadzipokwe	Ndemeia					Kalindiza	Mtakataka	Dedza	-		1	0.20	0.30	80 Masonry weir
95 Chitukuko	Matowe	Chikomba	Helani				Moawi	Mtakataka	Dedza	17		3		00 6	281 Inclined standard weir
96 Chemba	Chemba	Chauma	Kudooko				Materie	Kanhuka	Dedza	12	+ +		00 6	1 00	105 Minuted Stateston with a small hand
97 Libvadzi	Libvadzi						Mvumato	Kanhuka	Dedta	e g		2 6	00.0	1 20	050 Masance mair
98 Kondoole	Livwadzi						Kandoole	Kanhuka	Dedra	20		2 C	2.00	0.80	20 Wetting standard weir (single wath
99 Chilanga	Linthipe						Chilanda	Kaphika	Dedza	1	× €		0.00	0.60	84 Warting standard weir (sinote wall)
100 Ngoma	Ngoma						Kalambo	Kaphuka	Deriza	35	21	9	3.00	150	400 Vertical standard weir (sinote wall)
101 Chisomo Chathu	Livulezi						Kabulika 1	Golomoti	Dedza	27	4		20	00.6	750 Vertical standard weir (sinde wal)
102 Kamtedza	Livulezi						Msamata	Golomoti	Dedra	; ?	- - -			00.4	EOD Montroal standard wait feinale wall
ADS NUMBER OF STREET		CALENDER CLARKER					Modi Italia		DE020	C7			in the states of	00.6	ouu verucai staridard weri (singre wali)
104 Chisankhwa	Chisankhwa	Nadzikhale					Liwimbi	Bembeke	Dedza	30	25]	5 1	3.50	10.20	230 [Vertical standard weir (sinote wat)
105 Chipeni	Chipeni						juwa	Bembeke	Dedza	37	101	0	00 6	e oo	ROO I
106 Mkhaza	Mulira						Khanganya	Bembeke	Dedza	40	33	7 5	e Do g	B OD	575 Vertical standard weir (single wall)
107 Khofi	Mtanda						Chipangula	Bembeke	Dedza	18	60	7	1.20	3 00	400 Natural diversion with a small band
108 Mala	Namanolo						Kankhudza	Bembeke	Dedza	29	15 15	4 17	5.50	10.00	550 Vertical (double walls)
109. Mtanda								Bembeke	Dedza	37	9	5	0.80	8.00	300 Inclined standard weir
110 Mtsetse	Mtsetse						Phulusa	Bembeke	Dedza	22	11 1	1	0.80	4.00	280 Vertical standard weir (single wall)
111 Kadiwa	Kadiwa					_	Magwenu	Bembeke	Dedza	14	9	8 2	0.80	2.00	280 Vertical standard weir (single wall)
112 Namanolo	Kankhudza					_	Kankhudza	Bembeke	Dedza	22	8	4	1.20	10.00	400
	IVIWACNAKUIA						Kaboola	Bembeke	Dedza	17	14	3 7	0.80	3.00	430
114 Ziye I 116 Ziro III	Zhe -	Kadzungu					Maliteni	Bembeke	Dedza	σ	ц	1	4.00	10.00	350 Natural diversion with a small band
1 10 ZIYE N	Z1/2	Kadzungu					Maliteni	Bembeke	Dedza	ç	2	3	2.50	5.00	350 Natural diversion with a small band
110 ZIVE II 117 Katarita	ziye	-					Maliteni	Bembeke	Dedza	<u>2</u>	9	4	4.00	8.00	280 Natural diversion with a small band
11 Nejawa	Name and						Maliteni	Bembeke	Dedza	G	4	4	3.00	5.00	340 Natural diversion with a small band
110 Namunga	INamunga	-					Chimkombero	Bembeke	Dedza	15	6	5	1.10	4.70	210 Natural diversion with a small band
120 Monicizano	Novbesta	I/ ashionada					Dauya	Bembeke	Dedza	5	80	5. 7	1.30	5.00	400 Vertical (double wails)
121 Kakwesi	I war Ki ala	nacriigurida	Kaungama				Chitanje	Mvera	Dowa	9	16	9	3.84	20.00	340 Vertical standard weir (single wall)
	LUYI Martin aras		THE STATE OF	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.			Kakwesi	Mvera	Dowa	17	8	6	1.40	3 00	144 [Vertical standard weir (single wall)
123 Chimwang'ombe	Chimwang'ombe						l ovimbi	Mvera	Down	14	13	1	08 C		D46 IMASOUTIC CONTRACTOR
													2.00	4.UU	0.10 Masuny wei
125 Mtekaminga	Lipimbi						Chakhutamadzi	Mvera	Dowa	15		1	0.60	1.20	458 INstural diversion with a small band

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No. Irrigation Club	Stream Name	Village	Village	Village	Village	Village	Village	EPA	RDP	Memt	ership	andowner	Developed area	Potential Area C.	anal length	weir Tyne
4.06 Multi-condition				,	,	,	,			Total Mé	ale Female		(ha)	(ba)	(m)	2018 - 1224
		NUMBER OF STREET					<ampnimba </ampnimba 	Mvera L	owa	10	10	1	0.60	1.00	322 N	lasonny weir
128 Chikulumaiwe	Chikulumaiwe	Chimeza					Mbalame	Mvera I	lowa	25:	18	7 2	2.17	3.20	428 IN	atural diversion with a small hand
129 Chitala	Chitala	Kasese	Chiwala			-	Mphangwe	Mvera [owa	20	13	1 (1)	1.24	2.70	240 1	clined Standard weir
130 Kasonkhwe	Kasonkhwe						Mawelu 1	Mvera	owa	9	9	0 2	1.20	2.00	210	
131 Kasupe	Kasupe						Doko	Mvera	owa	10	10	0	1.40	1.00	325 V	ertical standard weir
133 Kabyumhwiza	Kaburnthwiza	Munnamania					avu	Mvera	owa	4	~ <	2	1.60	1.00	319 N	atural diversion with a small band
134 Mkiivu	Firmhwe			-			VIRESIA	Mvera L	emo	2	8 2		1.43	1.00	325 lr	tolined Standard weir
ality in the particular the second							vyarubwe Sanaan Sanaan Sana	Wivera L	owa	40	<u>zu </u>). 31	- 06.1	4.50	1,550 V	ertical (double walls)
137 Limbikani	Eumbwe															
138 Nkhamakipindula	Nakhala						-andani		owa		94		1.42	15.00	800 N	atural diversion with a small band
139 Jeke	Nakhala						- upera	Wvera C	0Wa	10 .ac	10		08.0	10.00	1,700 M	asonry weir
140 Singo	Fumbwe						Singo	Mvera	owa	30	07		1 50	00.0		and dags
141 Katawa	Mvunganjati					-	rapola	Wvera D	owa	60	40. 20		3.50	15.00	552 S	and baos
142 Tiwokole	Fumbwe						Singo	Mvera D	owa	14	14	1	0.60	2.00	200 N	atural diversion with a small band
143 Lilimbike	Kazengele					_	(athewela	Mvera D	owa	30	20 10	2	2.70	15.00	800 S	and bags
144 Valicitoka 145 Nibboodod-i II	Nikhonded-:						Nkanthama	Mvera D	owa	4	10	1	0.80	1.50	500 S	and bags
ALL KNOW SAME PROPERTY							Unisonga	Wvera C	OWB	10	10]) 	1.60	4.00	326 M	asonry weir
147 Tiferanji	Kasangadzi	Not see you wanted a 202 for 2 4 50 mm in the second s				and the set of the set	dwangala	Vachisaka	ewo.	76	15 15 0	10		15.00	10 28C	atural diversion with a small hand
148 Nkunda	Chaminga						Jkunda	Vachisaka D	owa	9	0		0.21	1.00	127 V	ertical (double walls)
149 Mthetsanjala	Bango	Malipa			i	0	Chimbuli	Vachisaka	EWO	30	15 15	9	0.46	2.60	490 N	atural diversion with a small band
150 Nadzawe	Nadzawe	Kanereka					Chimpeni	Vachisaka E	EWO	8	2	+	0.45	1.20	354 V	ertical (double walls)
152 Dwere	LWERE and Chagudu	The second s				<u> </u>	Guma	Vachisaka C	owa	24	9	-	0.72	1.40	1,400 M	asonry weir
154 Tinuidaana	LINDACZ						Aaz yale	Vachisaka C	owa:	40	22 16	4	1.40	6.00	3,200 M	asonty wein
155 Kotono	Chaguau						(apiza	Vachisaka D	owa	3	23		0.80	3.00	1,200 T	rigonal supported weir
156 Tathatakwana	Chaquau						Colire	Vachisaka D	owa	30	15	~	0.30	0.80	1,600 M	asonry weir
157 Mphodza	Mohodza	Kasoniola					//dakoridweia	Vacrisaka L	owa Columnation	59	1/1	1	0.30	0.60	W 006	asonry weir
158 Mzami	Mzami						onezense	Yachisexa	BMO	0	7	0	00.1	0.80	N 001	atural diversion: with a small band
159 Nkhondoyachepa	Nkhondovachepa						Aarchaeamhi 1	Vachisaka IL	owa	RZ T	4 1	87	5.00	1.40	450 N	atural diversion with a small band
160 Nafisi	Nafisi						darlide	Vachisaka L	DWG	<u>4</u> ¢	70			0.80	N 012	errical (double walks)
161 Totolonga	Totolonga						amba	Vachisaka D	EW0	24	- T	24.0	07.0	1 20		etucal (uuuple walls) attiral diversion with a small hand
162 Lipimbi	Lipimbi						(alinda	Vachisaka D	owa	23	21	50	3.10	2.00	510 N	atural diversion with a small band
163 Kachele	Fumbwe					<u> </u>	(ambia	Vachisaka D	owa	13	13	13	2.60	2.40	311 In	clined standard weir
164 Chavinyaia	Tobvi						Chavinyala	Chivala	owa	13	13 C		0.80	1.70	Ņ	ertical (bouble walls)
100 Simankhwala	Lumbadzi	4 404 111100000000000000000000000000000		to i bud up us as all gene to to one of the		07	Simankhwala (Chivala	owa	5	5	0	0.40	1.00	z	atural diversion with a small band
100 Nango	Nango	Mgoneka	Chinkhwin			1	/ipendo	Chivala	owa	24	14: 7	9	3.00	00 Đ	300 N	atural diversion with a small band
168 Meambowana	Parchimenya	Wpnaixwa					idunge	Chivala	owa	17	¢,	5	3,50	8.00	200 M	asony: weit
169 Minwasomoho	Nanno						Awasauka		OWB	00	51	60		15.00		
170 Kubwinia	Bvzazi						vgalazuka v		owa	2	2		2.80	6.00	445	-
171 Ngalatete	Noalatete	Chimbwala	Noalazuka				y alutwe	- nivela	owa	17		ŭ	0	ag r	495 N	atural diversion with a small band
172 Mvumbi	Byzazi		0				Avumbi	Chivala	OWB	17	14 0	27	1.001	N .	2.34 IV	atutal giversion with a small band ertical standard weir
173 Yesaya	Dzyazi					V	Atchenenje (Chivala D	owa	36	32	4	5.20	25.00	362 M	asonry weir
174 Chibwata	Mtseche	Chinyama If					Chipelepete	Chivala	owa	6	6	6	1.50	10.00	186 A	small pool dug at thre source of the river
175 Taoloka	Bzyanzi				Ì	Ų	Chikhadwe (Chivala D	owa	18	11 7	5.	3.00	4.50	330 V	ertical standard weir
1/0 Sasu	Nabuma						Sasu (Chisepo D	owa	34	24 10	34	1.22	4.00	150 V	ertical standard weir
178 Kaula					=		hidangwa	Chisepo	owa	34	33		0.20	0.40	31	
179 Kaufa		awBillo	Criatriakaia	windanguwa w		nesele A	Wakana 1 (Chisepo	6MG	8 8	33		0.20	0.80	85 14	ertical standard weir
180 Chitwala	Mohemba						hitting and a second			5		And a first a start of start of start of	1.42.0	0.00	11 AZ	erical standard weir
181 Khamalathu	Mtiti						ameta	Vadisi D	EWD	rσ	4 C	1	000	200	10 VAL	a ucat attaituate well
182 Mchena	Chiwina						chimamba	Viadiel D	OWG		10		0.65	2.40	A COG	artical standard well
183 Fulatita	Chibwata						ulatila	Aadisi D	owa	4	4	1	0.15	3.20	65 Br	idae
164 Kasapia	Chibwata					۷.	Jankumba I	Aadisi D	owa	3	3 0	4	010	3.40	136 14	artical standard weir
196 Kasangadzi 196 Kroskikusou	Kasangadzi	Chilimita	Bekete				hobwe	Aponeta D	owa	37	35	37	5.00	25.00	612 Ve	ertical (double walls)
187 Jidi	Thawi	Gilei	Ratwork A		-	¥ 0	(awale	Aponeta 10	owa	26	22	26	45.00	40.00	850 N	atural diversion with a small band
188 Chipatuka	Naphanda	nenD	Nanyusa				jele "hinnti ka	Aponela U	OWa	27	20	27	40.00	40.00	837 St	and bags
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Note1: Above figures were based on the site profile sheet (1x4-4 attached on the following page) submitted by AEDOs, while developed summary shown in the Main Report was based on the reporting from the AEDOs during the follow-up AEDO training. Therefore, data are not same.

Note2: Red colored (deep dark colored) cell means the sites which have been identified by nationwide inventory survey as existing site, while green colored (light dark colored) cell means the sites which have been identified by the survey as proposed (new) sites. These colored sites are thus identified by the nationwide inventory survey as well.

SITE PROFILE

NAME OF AED	00:		
Irrigation	Name:	EP	A
Club	Meaning:	RD	P
Stream	Name:	TA	
	Width: <u>m</u> , Depth:	<u></u> m	
First	Is this irrigation scheme completely	v new (established in this	dry season)? □Yes □No (tick)
established	If no, please specify the year it was	firstly constructed.	year:
Village	Name:(No.	of HHs:) :	(No. of HHs:)
involved	Name:(No.	of HHs:) :	(No. of HHs <u>:</u>)
	Name: (No.	of HHs <u>:) :</u>	<u>(No. of HHs:</u>)
Dominant Crop	Summer:	Winter:	
Irrigation Club	Membership:in to	otal, Male membership	:Female membership:
	No. of L. owners:in to	otal, Male L. Owners:_	Female L. Owners:
	Name of Chairperson:	DMale	Female (tick)
	Name of Secretary:	⊡Male	Female (tick)
	Total Irrigated Area:	ha	
	Potential land which can be develop	ped: <u>ha</u>	

den in the second states of the second	10tui 1115uteu / 11eu	1104
	Potential land which can be developed:	ha
Weir	□Natural diversion with a small band	Sketch the diversion weir with dimensions:
Tick the type	□Inclined Standard Weir	
with	Uvertical Standard Weir (single wall)	
dimensions and	Uvertical (double walls)	
sketch	□Trigonal supported Weir	
	□Masonry Weir	
	□Others (Please specify below)	
erse en de servicion		
	Weir Dimension:	
	Height:m (max.)	
	Water Depth:m (max. stored)	
	Length:m	
Canal &	Canal:	Ancillary Facilities:
Ancillary	Total Length:m	Road Crossing:places
Facilities	Standard Depth:m	Canal Bridge:places
	Maximum Depth:m	Others (please specify below)
	Top width:m	
	Bottom width:m	
Particulars	What dose this irrigation system attract	visitors the most?
	D. 11	Massures un dentalizari
Problems &	Problems arisen:	Measures undertaken.
measures		
energia de la constructiva esta anya de la constructiva. A la constructiva de la constructiv A la constructiva de la constructiv		
ett best steelwatels.		

Name	Date Delivered				Usage Record			
					Deficit / Break Down Record Ev	aluation	View Point	
		Date	Deficit/ Break Down	Measures taken	Specification	1-5		
Fayison Kalumbu	2003/9/25				The flow of water is much less than the imported India type and the onset flow is tougher. The imported one is stiffer when treadling but after exchanging the piston assembly of the imported one fixed to local type, the local type works much smoother than before. The imported one fails even to draw water . The intake pipe is much smaller for the local one.	ю	The intake pipe be enlarged to allow plentiful water intake. Pistons be modified.	
Shema Masi ka	2003/9/25		Sanction pipe fixing point to valve box	Failed to screw so that it is tight	Rubber piston seals are stiffer hence tougher treadling for the Indian like type domestically produced. Spanners fail to tighten bolts at the discharge pipe to fix valve box for the locally manufactured type.	4	Modification has to be made	1
Sendeza Chikwanje	2003/9/25				The pump requires more effort compared to imported Indian type because the piston seals are not flexible enough compared to Indian type.	4	Piston seals should be as flexible as imported Indian type or be even more flexible so modification is required	
Zilaka Chikazingwa	2003/9/25				Water flow is much less than the imported Indian type due to reduced size of delivery pipe. Difficult to operate because the sanction pipe is ridge.	4	Modification has to be made in parts explained above.	<u> </u>
Mgombe Notis	2003/9/25				Small type water flow is not enough. Suction pipe not flexible hence difficult to bend in deep wells compared to imported type. Delivery is not big enough compared to imported Indian type.	ىي ا	Modification has to be made on size of delivery pipe.	
Jazele Zidyenji	2003/9/25	2003/9/30	Cranker	IZ	Flow of water very little compared to imported type. Suction pipe ridged hence difficult to use in deep wells. The suction pipe is not flexible. Delivery pipe is just very small compared to the diameter of the discharge pipe hence difficult to fix properly.	ъ	Modification has to be made in the parts indicated above.	······
It works								

To compare domestically produced pump with imported Indian type pump, 5 pumps (2 types) domestically produced were distributed to farmers and tested on ground. Hereunder is the summary of the test, and generally saying the domestically produced ones could not compete imported Indian type. 4. Examination of Treadle Pump domestically produced

2. better, 3. almost same as,

5. far poorer 4. Poorer

1. far better,

than imported Indian TP

APPENDIX-6

BASELINE SURVEY FOR SELECTED VERIFICATION SITES

CHAPTER 1 Baseline Survey Conducted in Winter Season 2003

The baseline survey was conducted in July and August 2003, when the beneficiaries of the smallholder irrigation development in most of the verification project sites had been identified. Representative three sites from each cluster totaling 12 sites were selected for the survey and 30 sample households in each site were surveyed. Hence the total sample households as a whole were 360. Following are the sites selected for the survey.

Cluster 1 (Lilongwe East RDP): Cluster 2 (Dedza Hills RDP): Cluster 3 (Dowa RDP): Cluster 4 (Ntchisi RDP): Mutwanjovu, Duwu, Ngoni Mchiku, Mtanda, Mtsetse Tikolore, Tilime, Loyi Msambaimfa, Gontha, Katema

1.1 Characteristics of Sample Households¹

1) Beneficiary / Non-beneficiary

The sample households consist of landowners (direct beneficiaries), tenants (indirect beneficiaries, who have been in most sites given a piece of land free of charge), and

non-beneficiaries. In some sites like Mtsetse, the number of beneficiaries is so few that the large number of non-beneficiaries concerned with the site was interviewed. Figure 1.1 shows the distribution of samples by above categories.

2) Ethnicity

The ethnic group of the samples are almost Achewa, but the samples in Tikolore and Tilime sites in Dowa (Cluster 3) consist of 40% and 60% of Angoni respectively.

3) No. of Village

There are two categories of the sites, of which the beneficiaries mostly come from a single village or several villages. Table 1.1 summarizes the number of the samples by village. The



Table 1.1 Number of Samples by Villages

RDP	Site			No.	of Sa	mples	by Vill	age		
(Cluster)		V1	V2	V3	V4	V5	V6	V7	V8	V9
Lilongwo East	Mutwanjovu	25	2	1	1	1				
(Cluster 1)	Duwu	25	5							
	Ngoni	10	4	3	3	2	2	2	2	2
Dodzo Hillo	Mchiku	15	8	4	3					
(Cluster 2)	Mtanda	12	8	8	2					
	Mtsetse	26	3	1						
Dowo	Tikolore	30								
(Cluster 3)	Tilime	30								
(Cluster 3)	Loyi	30								
Ntobici	Msambaimfa	12	8	5	2	2	1			
(Cluster 4)	Gontha	30								
	Katema	30								

Note: V1, V2 ... show village.

¹ Database is summarized on ATTACHMENT-1.1.

RDP

samples in Dowa (Cluster 3), and Gontha and Katema sites in Ntchisi (Cluster 4) come from one village, while the samples of Ngoni and Msambaimfa sites come from more than six villages. These two sites are located within the vicinity of towns (Lilongwe and Mponela). For the three sites in Dedza Hills (Cluster 2), there is a history that the villages in each site were split from their original village within recent decade.

1.2 **Family Status**

1) Family Size

Family is defined in this survey as the members dwelling together. Average family size of all the samples is 4.9 and it varies by site from 3.1 in Tikolore to 6.3 in Ngoni. Table 1.2 shows the distribution of the

samples by family size.

2) Migration

All the family mem birthplaces were surv and it was found that and 40% of married and women were bor villages that were diff from their current res villages.

Reasons for migration

their birthplace may inc custom of settlement up traditionally follows. In matrilineal system, when a man marries, he must stay in the village of his wife and work for his father in law for a few years as a kind of offering dowry. After this period, the man and his wife can decide whether to live in her village or his. As Figure 1.2 shows, the number of married males living in different villages from their birthplaces is far more than that of females in the three sites (Mchiku, Mtanda and Mtsetse) of Dedza Hills (Cluster 2). The result implies that a custom that males settle in the villages of their wives is strong in Dedza Hills.

3) Literacy

Average literacy rate of the samples of more than six years old is 39% and the rates for male and female 44% and 34% are respectively. Generally the literacy rate of male is higher than female in most of the sites, but the results of Mtanda and Mtsetse in Dedza Hills are against this



No. of Sample by Family

	(Cluster)	Site	Ave.	< 3	3	4	5	6	7	8	> 8
ibers' veyed 43% men m in èerent ident	Lilongwe East	Mutwanjovu	4.9	2	7	5	3	6	5	2	0
		Duwu	4.3	7	4	5	6	4	2	1	1
		Ngoni	6.3	1	1	5	5	6	5	3	4
	Dedza Hills (Cluster 2)	Mchiku	4.7	2	6	8	6	3	3	1	1
		Mtanda	4.6	2	7	8	4	6	0	3	0
		Mtsetse	5.4	1	2	6	7	8	3	1	2
	Dowa (Cluster 3)	Tikolore	3.1	18	3	0	1	2	2	4	0
		Tilime	4.1	6	5	5	5	8	1	0	0
		Loyi	4.7	5	4	6	5	5	1	2	2
	Ntchisi	Msambaimfa	5.0	3	4	4	8	3	4	2	1
		Gontha	6.0	4	2	3	3	4	4	5	5
		Katema	5.3	3	4	5	5	5	2	3	3
	Total (A	4.9	54	49	60	58	60	32	27	19	
from	c		15	14	17	16	17	9	8	5	
lude th	e division on arriage infl	of villages, b luenced by	ut als	so the natri	e mig linea	grati al sv	on lil stem	kely , wł	indic nich	cates Ache	the ewa

trend, namely the literacy of female is higher than male. In fact, it was observed that a woman stood up in an assembly of the club and was taking note during the meeting in Mtsetse. It was also marked that the literacy rates of these two sites are the lowest as 11% and 19% on average of both sexes in Mtanda and Mtsetse respectively.



4) Household Having Non-farm Income

It is counted that 59% of the sample households have non-farm income, especially in the three sites in Lilongwe East (Mutwanjovu, Duwu and Ngoni) more than 80% of the sample households have non-farm income. Major non-farm income sources are sales of firewood, sales of local beer and piece work such as farm labor or casual labor. The average period of earning non-farm income was 3.3 months. There are very few samples who have permanent job as teacher, watchman etc.

In Ngoni site, which is located near Lilongwe city, people have been engaged in much more variety of occupations than other sites like kiosk (hawker), bicycle repairing, school teacher, handcraft etc. reflecting the location advantage. There is a government-managed forest in

Dedza Hills, so that the farmers in Dedza Hills have job opportunity for working sawyer. as Income of sawyer has with come up high raising amount the average non-farm income per family in Mchiku in Dedza Hills up to MK7,900 marking the highest sum among the 12 sites (See Figure 1.4).



1.3 Agriculture

1) Major crops

Major crops in the sites are maize, beans, ground nuts, cabbage, sweet potatoes, Irish potatoes, tobacco leaves, onions etc. Maize and beans are mostly self-consumed (In Dedza Hills, beans are mostly sold). Other crops are grown as cash crops. Tabacco leaves are mainly

grown in Mutwanjovu, Duwu, Msambaimfa, and Gontha sites. Cabbage crop is seen in Tikolore and Tilime. Onions and sweet potatoes are intensively grown in Msambaimfa and Katema respectively. Msambaimfa has been found by middlemen to trade onions. It seems that such links with middlemen have driven the development of particular cash crops. Table 1.3 shows the major cash crop, number of sample households growing the cash crops and gross income of the cash crops in each site.

RDP	Site	Cash Crop		Gross Income (MK)		000	011			Gross Income (MK)	
			No. of HH	Total	PerHH	RDP	Site	Cash Crop	No. of HH	Total	Per HH
Lilongwe East	Mutwanjovu	Tobacco	14	172,349	12,311		Tilvalana	Ground nuts	7	2,090	299
		Ground nuts	9	10,260	1,140	Dowa	TIKOIOTE	Cabbage	7	37,050	5,293
	Duwu	Ground nuts	13	11,208	862		Tilime	Ground nuts	7	2,240	320
		Tobacco	5	71,500	14,300			Cabbage	4	13,550	3,388
	Ngoni	Vegetables	5	12,800	2,560			Tomato	3	1,845	615
Dedza Hills	Mchiku	Beans	14	9,180	656	Loyi		Ground nuts	4	3,850	963
	Mtanda	Beans	10	3,500	350		Msambaimfa	Onion	14	259,900	18,564
		Soya Bean	7	2,610	373			Soya Bean	12	63,350	5,279
		Sweet Potato	3	1,500	500	L.		Tobacco	10	119,050	11,905
	Mtsetse	Beans	6	3,185	531	ı		Sweet Potato	4	7,890	1,973
		Soya Bean	3	4,330	1,443	Ntchisi		Irish Potato	4	3,600	900
								Tobacco	14	224,680	16,049
			1	Gontha	Sweet Potato	7	16,300	2,329			
			1		Ground nuts	4	3,318	830			
							Katema	Sweet Potato	19	60,720	3,196

Table 1.3 Number of Households Growing Cash Crops and their Gross Income

2) Unit Yield of Maize

It is estimated that the unit yields of hybrid maize on year 2002/03 rainy season crop with and without applying of chemical fertilizers are 2.1 t/ha and 1.4 t/ha respectively. It is counted that only 18% of all the samples used hybrid seeds out of which 31% did not apply chemical fertilizers². As for recycled seeds (local seeds), the unit yield of maize on year 2002/03 rainy season crop was estimated at 0.9 t/ha. Figure 1.5 shows the unit yields of maize by variety and by cluster. The yields of Dowa marked lowest.

The estimated unit yield of hybrid maize is close to the national average yield for recent 13 years³. Yield of maize in rainy season could be low due to difficulty of getting adequate rainfall (controllable water) and short hours of the sunlight etc. Also low application of chemical fertilizers and the error of cropping area during the interview to farmers should be taken into account.



Apart from the farmers' interviews, estimation of yield on the field was conducted for the dry season crop by irrigation. Samples of green maize were collected from Mankhamba site in Lilongwe East, in which farmers have already started harvesting the dry season crop. With the weight of the dried grain, it was estimated that the unit yield of hybrid maize is around 3.7

² Share of composite in 2002/03 rainy season crop was 6% (20 samples) only and the average unit yield was 1.3 t/ha.

³ 2.19t/ha. Refer to the Interim Report May, 2003, Page II-1-10.

Estimation of Hybrid Maize (Dry Season Crop by Irrigation)

t/ha. The variety of the seeds is Panna 67. The farmers who grew this variety in Mankhamba were complaining about the poor quality of seeds. The unit yield of hybrid maize during dry season crop by irrigation could be, therefore, expected to be even higher than this.

Yields of maize for recent five

Date: November, 2003 Site: Mankhamba, Lilongwe East RDP Plot: 5a (80 basins; 40 stems/basin (25cm spacing)) Variety: Panna 67 Inputs: 6kg of seeds, 50kg of Fertilizers (CAN) Weight of samples (dried grain (g)) **S**1 S2 S3 **S**4 S6 S5 48 90 72 84 12 30 Average (exclude heaviest and lightest) : 58.5g/corm Unit Yield: 187.2 kg/5a (3,200 corm) = 3,744 kg/ha

years were also questioned to the sample farmers. Regarding the error mentioned above, analysis of the collected data was focused just to see the trend of the maize yield. Trend of

maize yield (hybrid, average of both with and without applying fertilizers) by cluster is shown in Figure 1.6. When the average yield of 1998/99 rainy season crop is set to be 100, the average yields in all the clusters fell into around 60 in year 2000/01. The yields in all the clusters did not still recover in year 2001/02 and as average of the four clusters the yield recovered to the level of year 1998/99 in year 2002/03.



1.4 Self-sufficiency of Maize

Situation on self-sufficiency of maize for recent five years was interviewed to the sample farmers. Figure 1.7 below shows the degree and trend of maize self-sufficiency by cluster. In the figure, 0% means the household could produce maize just enough for

home-consumption. Minus percentage shows the degree of insufficiency of maize self-produce to support the required amount of maize for the family. For example, average self-sufficiency in Lilongwe East in 2001/02 marked the deficit of 60% from the required amount of maize.

It is counted that 70% of the total samples said that they



could not produce maize at the level of self-sufficiency in year 2002/03. This percentage can be confirmed from maize production of the sample households in 2002/03. Maize production per capita (All the family members were converted to be adult males in terms of consumption capacity⁴) is estimated at 193 kg, which is under the required amount of maize for an adult male (240kg^5) and the share of sample households whose produce was under 240kg is just about 70% coinciding with the above question.

Average maize production among the sample households who could not produce maize at the level of self-sufficiency is calculated at 119kg per capita. Maize self-sufficiency is especially low in Mtanda, Loyi and Katema (See Figure 1.8). However, as it has been mentioned, farmers are also growing cash crops and there are 19 farmers out of 30 samples who earn from sweet potato crop in Katema. Therefore, low self-sufficiency of maize does not directly mean the low agriculture productivity of the site.



1.5 Farm Household Income⁶

1) Annual Income

There are considerable households who scarcely sell their produce unless they grow tobacco leaves or vegetables. These households only sell their produce just enough to compensate the cost of inputs or they obtain money for farm inputs from non-farm job. Around 40% of the sample households are found that the net cash income from crop production gets deficit, namely farm inputs were purchased by the income from non-farm job or sales of livestock other than crop sales.

The sites, in which farmers are engaged in cash crop like tobacco are found that farmers with deficit of net crop income are less. Also the farmers in Gontha and Katema sites are selling

Prevailing market economy and the change of shifting cultivation society in Zambia (Japanese research paper).

⁴ No. of family members was adjusted by applying the factors of 1.0 to male over 14 years old, 0.8 to female over 14 years old, 0.7 to both male and female from six to 14 years old, 0.4 to other children and 0.0 to baby (cf. Syuichi Oyama, Prevailing market economy and the change of shifting cultivation society in Zambia (Japanese research paper)

 $[\]frac{5}{6}$ cf. ditto

⁶ Database is attached on ATTACHMENT-1.2, 1.3, and 1.4
their farm produce more than other sites (See Table 1.4 below). Since Gontha and Katema sites are located relatively remote area, it could be said that the opportunity of non-farm job is less than other sites.

Average annual cash income of the total samples is estimated at MK5,900 per household. When including the value of farm produce for home consumption, the average annual income is calculated at MK15,000. The value of farm produce for home consumption, therefore, consists of 60% of total income value.

2) Distribution of Samples by Income Level

As for the distribution of households according to their income level, the shares of households whose annual income including home consumption value are less than MK5,000, MK5,000 ~ 10,000, MK10,000 ~ 20,000, MK20,000 ~ 50,000 and over MK50,000, are 31%, 25%, 24%, 15% and 5% respectively. Figure 1.9 shows the distribution of sample households according to income level by cluster. Share of lower income group is higher in three clusters except Lilongwe East RDP (cluster 1). The nearness to Lilongwe city may have contributed to relatively higher income level of the sample households in cluster 1.



There are some significant differences among sites in a cluster. Figures 1.10 to 1.13 show the distribution of the samples according to income level by site. It is observed that Loyi site consists of more samples belonging to lower income group compared to Tikolore and Tilime in Dowa and the samples of Msambaimfa in Ntchisi shows significant difference from Gontha and Katema, as 57% of the samples falls the income group of more than MK20,000 and the samples are rather polarized between better-off and others.



3) Share of Income by Source

Table 1.4 shows the average share of income by source. Net income of crop sale is estimated on average deficit in Dedza Hills (Cluster 2) and Dowa (Cluster 3). Income from sales of perennial crops and livestock products are little in all the clusters. As mentioned above, it is shown that the share of crop sale is higher in Ntchisi (Cluster 4) and the value of home consumption occupies around 60% in all the clusters.

			Table 1.4 Sł	nare of Incor	ne by Source	<u>)</u>		
			Sh	nare by Inc	come Sour	се		
Cluster	Non-farm	Perenial Crop	Livestock	l otal Cash Income	Total Value			
Lilongwe East	23%	9%	63%	73%	2%	3%	37%	100%
Dedza Hills	47%	-8%	57%	48%	0%	5%	43%	100%
Dowa	35%	0%	63%	63%	1%	1%	37%	100%
Ntchishi	3%	34%	59%	93%	1%	3%	41%	100%
Total	22%	13%	60%	74%	1%	3%	40%	100%

4) Assets

Figure 1.14 shows the share of the sample households who own radio and / or bicycle. Sample households who own radio and bicycle are 43% and 31% in total respectively. Sample households owning radio and bicycle are high in Msambaimfa and Mtwanjovu, and low in Loyi and Tilime somehow corresponding to the income level of the households in the sites.

1.6 Other Indicators

1) Irrigation Time by Watering Cane

It is estimated from the survey that irrigation time for maize by watering cane is 35 hours per ha per time or 136 hours per ha per week for maize. For the vegetables, it is estimated at 30 hours per ha per time or 142 hours per ha per week. It is expected that irrigation time by gravity irrigation can be shorter than by watering cane.



2) Compost Manure Making

69% of the sample households said that they were not making compost manure. The major reason for that was reported as heavy workload with 56% followed by the reason of not knowing how to make compost manure with 21%. Regarding the farmers' major reason for reluctance to make compost, the countermeasures for encouraging farmers to apply compost manure would have to be considered.

3) Maize Storage

Type of maize storage has been found that 36% of the sample households use bamboo made storage, followed by grass made one with 17% and brick made with 3%. As shown in Figure 1.15, bamboo made storage is popular in Dowa and Ntchisi, while grass made one is the major type in Lilongwe East. Clay wall type is popular in Dedza Hills. Other significant point observed is



the fact that 25% of the sample households store maize in bags. Bags are kept inside the house so that farmers can more easily prevent theft, as well. The way of storing as well as extending improved storage should be taken into account to mitigate storage loss of produce.

4) Agroforestry Species

24% of the sample households answered that there are trees for agroforestry on their farms. Major trees used for agroforestry are Faidherbia Albidah (Nsangu in local name), Tephrosia Vogelii (Katupe in local name), Asena Spectabilis, Mthethe (local name). There are still potentials to extend these agroforestry species.

5) Radio Program Audience Rating

39% of the sample households answered that they are listening to the radio agriculture program broadcasted by Malawi Broadcasting Cooperation. Frequency of listening to the program was three times per week on average. Figure 1.16 shows the share of the households listening to the radio program. It indicates that radio broadcasting can be an effective tool of agriculture extension.



CHAPTER 2 Production Survey for Year 2003 Dry Season

2.1 Results of Year 2003 Dry Season Crop

The Study Team conducted a production survey of year 2003 dry season crop at all the verification project sites. Remunerators interviewed beneficiaries of the irrigation up to 30 in each site. The Study Team verified the survey results through its own interviews to farmers and actual measurement of farm plots and it was found that most likely farmers were reporting their cultivated area much higher than actual figure. Eliminating invalid data and adjusting the planted area from sample plot measurement, here it summarizes the result of the survey.

Table 2.1 shows the summary of maize production in 2003 dry season at the verification project sites. Because the plot per capita was so small that average production per farmer by site ranged from only 5 kg as the lowest (local seeds in Duwu) to 298 kg as the highest (hybrid in Mahnkhamba). Canal water dried up by the time of harvest in Duwu, so the harvested area was very small compared to planted area. This fact resulted in the very low production.

Estimated yields vary by site, but on average yield of hybrid, composite and local maize are estimated at 2.6 t/ha, 2.4 t/ha and 1.6 t/ha. In Mtwanjovu site, water shortage occurred during harvest period and that may have affected the production, as the average yield of hybrid in the site was only 1.6 t/ha. Mankhamba site had enjoyed ample water throughout the cropping period, so the yield marked high. Average yield of hybrid, composite and local

in Mankhamba are estimated at 3.4 t/ha, 3.1 t/ha and 2.7t/ha.

In the survey, farmers were asked to self-rate the harvest of the dry season crop by ranking from 1 to 5 (1=very bad, 2=bad, 3=fair, 4=good, and 5=very good). Because some areas were suffering water shortage in the critical period last dry season, it seems that the harvests of the first irrigation trial were not as good as farmers expected. The average self-rating of the harvest in the dry season crop for hybrid, composite and local were 3.3, 3.6 and 2.1 respectively. The highest rate was marked of composite at Katema. The average rate was 4.4, whereas the lowest rating was at Duwu. The average rates of composite and local seeds at Duwu were 2.0 and 1.0 respectively. Though Mankhamba marked highest production per capita, they rated their harvest as just fair.

Farmers who sold their produce partially or in full were counted at 58% for hybrid, 36% for composite and 48% for local seeds. The number of farmers who sold maize differs by site, as in Mankhamba site all the farmers sold some of their produce, whereas for the sites in Ntchisi, namely Gontha, Katema and Kasangdzi, only few farmers sold their produce. Farmers who sold their produce in the respective three sites in Ntchisi were 3%, 36% and 50%. This would probably be their location disadvantage.

Farmers who applied fertilizers for hybrid, composite and local seeds were 68%, 89% and 19% respectively, while manure were 63% for hybrid, 73% for composite and 52% for local seeds. The results show that chemical fertilizers were more applied than manure and percentage of farmers who applied fertilizers for local maize was considerably low.

Variety			Hybrid		
Site	Mtuwanjovu	Duwu	Mankhamba	Chikhasu	Total/Ave.
No. of Sample	10	2	6	1	19
Ave. planted area	0.043	0.043	0.087	0.018	0.056
Gross production	69	121	298	80	147
Unit yield	1,576	2,783	3,427	4,444	2,633
No. of Farmer sold produce(%)	30	100	100	0	58
Rating of Harvest	3.4	2.0	3.3	4.0	3.3
Farmer applied fertilizer(%)	70	50	67	100	68
Farmers applied manure(%)	50	50	83	100	63

Table 2.1 Summary of Production Survey for 2003 Dry Season Crop

Variety				Composite	;		
Site	Zakumva	Mankhamba	Livizi	Gontha	Katema	Kasangadzi	Total/Ave.
No. of Sample	9	2	14	30	25	30	110
Ave. planted area	0.070	0.065	0.045	0.054	0.050	0.043	0.051
Gross production	76	200	156	132	123	106	123
Unit yield	1,094	3,067	3,467	2,444	2,460	2,438	2,425
No. of Farmer sold produce(%)	78	100	43	3	36	50	36
Rating of Harvest	2.7	3.0	4.3	3.0	4.4	3.5	3.6
Farmer applied fertilizer(%)	100	50	86	100	100	70	89
Farmers applied manure(%)	11	100	14	97	100	70	73

Variety		Lo	cal	
Site	Duwu	Mankhamba	Chikhasu	Total/Ave.
No. of Sample	10	10	1	21
Ave. planted area	0.043	0.057	0.009	0.048
Gross production	2	155	23	76
Unit yield	51	2,742	2,556	1,581
Farmer sold produce(%)	0	100	0	48
Rating of Harvest	1.0	3.0	2.0	2.1
Farmer applied fertilizer(%)	0	40	0	19
Farmers applied manure(%)	20	90	0	52

2.2 Sample Yield Survey for Year 2003/04 Rainy Season Crop

To examine the production survey results, the Study Team conducted sample yield survey of year 2003/04 rainy season crops. The Study Team collected sample maize from plots of rainy season, which had not been harvested in early June. Sample maize collected from spots of the farms were dried and weighed at the office and the unit yield of the farms was estimated.

It was found from the sample survey that the highest yield of plots reached over four tons per ha. This indicates that if farm is well managed with hybrid seeds and fertilizers are well applied, the yield will be able to mark more than four tons per ha even in rainy season, which is as high as dry season crop. While it was found that recycled maize showed lower yield but not lower than one ton per ha. Table 2.2 summarized the result of the sample plot yield survey of the rainy season in 2003/04.

No.	Date of Sampling	Site	C. Area Estimate	Dry Season	Variety	Inputs	Sampling	Size	Weight	Estimated Yield	Remark
			ha					m2	kg	kg/ha	
1	June-9-04	Dedza Kanyama EPA	0.15	-	DK8031	?	3.1m x 1.4m =	4.34	1.395	3,214	
2	June-9-04	Dedza Kadiwa Site	0.12	Cabbage	Local (Bantam 4 years recycle)	Urea 1bag+NPK(23-20) 1bag/0.12ha	3.1m x 1.8m =	5.58	1.380	2,473	Bean intercrop
3	June-9-04	Dedza Kadiwa Site	1.00	-	MH18	Urea 2bag+NPK(23-20) 4bag+Can 2bag/2.0ha	3.2m x 1.6m =	5.12	2.420	4,727	
4	June-9-04	Dedza Kadiwa Site	0.40	-	Local (Bantam)	Urea 1bag+NPK(23-20) 1bag/0.4ha	3.7m x 1.4m =	5.18	2.260	4,363	Bean intercrop
5	June-14-04	Ntchisi Gontha Site	0.20	-	Local	no fertilizers	2.3m x 2.1m =	4.83	1.460	3,023	
6	June-14-04	Ntchisi Gontha Site	0.02	Maize	Masika	l Irea 15kg/0 05ha	1.8m x 2.0m =	3.60	1.700	4,722	
7	June-14-04	Ntchisi Gontha Site	0.03	Maize	MH17 recycle	orea rong/o.oona	1.6m x 2.0m =	3.20	0.960	3,000	
8	June-14-04	Dowa Loyi Site	0.06	-	Masika (second year)	no fertilizers	1.9m x 2.2m =	4.18	1.700	4,067	
9	lune-18-04	Dedza Mtanda Site	0 12	Bean	Local (4 years recycle)	Ton dressing (5kg)	2.1m x 1.6m =	3.36	0.820	2,440	
10	June-10-04		0.12	Bean	Local (4 years recycle)	Top diessing (Skg)	2.1m x 2.1m =	4.41	0.440	998	

 Table 2.2
 Result of Sample Spot Survey for year 2003/04 Rainy Season

The result of the sample plot yield survey in rainy season rather contradicts with the national statistics, which mark lower yield rates than the team's sample survey. One reason for the difference would be the fact that the statistics presents regionally averaged data, so that the variation of field conditions would be well covered in regional production estimation, such as fields which had little harvest or did not have any harvest. That means the gap between planted area and harvested area may be considerable and the national statistics may reflect it. Also possibility of overestimation of farm area may have some affects to the statistics. It should also be noted that the plots selected for the sample survey were in many plots considered having better harvest this year compared to others.

CHAPTER 3 Survey for Evaluation of the Verification Project in 2004

3.1 Maize Production

Information for the evaluation was collected by a series of interviews with farmer beneficiaries and counterparts, namely irrigation officers and AEDC/AEDO. Also a questionnaire survey was carried out at 12 sites of the first-generation irrigation sites totaling 360 farmers (30 farmers in each site including both club member and non-member). Those

12 sites are Mtuwanjovu, Zakumva, Ngoni, Mtanda, Chikhasu / Mchiku⁷, Tikolore, Tilime, Loyi, Msambaimfa, Katema and Gontha. The sites are the ones in which the baseline survey was conducted in 2003 except for Zakumva and Chikhasu. Zakumva and Chikhasu were surveyed instead of Duwu and Mtsetse respectively, because Duwu had met serious water shortage leading no irrigation in 2004 and Mtsetse had also drastically reduced the dry season crop area. Summary of the survey result is attached on ATTACHMENT-2.1

By this questionnaire survey, some time series information was picked up (Refer to ATTACHMENT-2.1 and 2.2). Furthermore, to estimate maize yield or double check the interview information, a spot yield survey for dry season crop in 2004 was conducted in six sites, that are Mtuwanjovu, Ngoni, Mankhamba, Tikolore, Tilime, and Katema (Refer to ATTACHMENT-2.5 and 2.6).

Dry season crop by small-scale irrigation contributed to improving food security. Although the area of the dry season crop fed by gravity irrigation for each member of club is as small as 0.06 ha per member on average, it is still significant amount to the farmers, as the gravity irrigation enables them to increase the area compared to the irrigation by watering cane.

Table 3.1 shows an estimation of maize production in the first-generation verification project sites in dry season 2004. In the sites in Dedza Hills, farmers grew mostly Irish potatoes and beans, hence these sites are not included in the estimation and also the sites, in which farmers failed to grow crops during this dry season due to water shortage, are not counted. Total number of the sites included for the estimation was, therefore, 11 sites. The Study Team evaluated the degree of harvest in each site by inspection and estimated the total production by multiplying the area and relevant unit yield according to the degree of the stand of maize. Unit yield was estimated by sample reaping crop. In six sites the Study Team reaped maize from one to three spots of around five to six square meter per one plot and weighed the maize and estimated the unit yields of the plots (Refer to ATTACHMENT-2.5 and 2.6).

Total production of maize in the verification project sites in 2004 is estimated at 64.1 tons. This produce is as much as the annual consumption of 267 adults provided one adult consumed 240kg per year. Total area and members for this produce are 19.8ha and 274 members respectively. Average production per member and unit yield are, therefore, calculated at 234 kg and 3.2 t/ha respectively. It seems that unit yield achieved is fairly low leaving potential to improve. It is considered that the lower yield is mainly due to little amount of fertilizer application, recycling seeds, inadequate watering etc.

⁷ Chikhasu and Mchiku club members come from same villages. Among surveyed 60 samples, Mchiku club members were not actually included since they lost all the harvest in 2003. Hence the sample consists of Chihasu members and non-members from the villages, to which Chikhasu and Mchiku club members belong.

		No. of	Plantod		% of Are	ea by Yie	ld Grade)			Area (ha)				Product	tion (kg)		
No.	Club	farmers who grew maize	Area (ha)	Very High (t/ha)	High (t/ha)	Middle (t/ha)	Low (t/ha)	Very Low (t/ha)	Very High	High	Middle	Low	Very	Very High	High	Middle	Low	Very	Total
		(estimate)	(estimate)	6.0	4.5	3.6	2.6	1.6											
1	Mtuwanjovu	13	0.80	5	65	20	10		0.04	0.52	0.16	0.08	0.00	240	2,340	576	208	0	3,364
2	Ngoni	23	3.70		10	30	40	20	0.00	0.37	1.11	1.48	0.74	0	1,665	3,996	3,848	1,184	10,693
3	Mgunda	11	0.50		10	10	50	30	0.00	0.05	0.05	0.25	0.15	0	225	180	650	240	1,295
4	Mankhamba	18	3.00		20	20	40	20	0.00	0.60	0.60	1.20	0.60	0	2,700	2,160	3,120	960	8,940
5	Tikolore	41	3.00	5	35	20	35	5	0.15	1.05	0.60	1.05	0.15	900	4,725	2,160	2,730	240	10,755
6	Tilime	61	2.40	20	50	20	5	5	0.48	1.20	0.48	0.12	0.12	2,880	5,400	1,728	312	192	10,512
7	Loyi	3	0.20			10	90		0.00	0.00	0.02	0.18	0.00	0	0	72	468	0	540
8	Kambware	1	0.05				100		0.00	0.00	0.00	0.05	0.00	0	0	0	130	0	130
9	Msambaimfa	30	2.50		20	50	20	10	0.00	0.50	1.25	0.50	0.25	0	2,250	4,500	1,300	400	8,450
10	Gontha	17	1.70			30	70		0.00	0.00	0.51	1.19	0.00	0	0	1,836	3,094	0	4,930
11	Katema	56	1.95	5	5	15	5	70	0.10	0.10	0.29	0.10	1.37	585	439	1,053	254	2,184	4,514
Тс	otal (Average)	274	19.80	4	22	26	31	17	0.77	4.39	5.07	6.20	3.38						64,123
	Area	/capita (ha):	0.072	ha/capit	a			-		-	•		A	verage p	roductior	n per mer	nber (kg/	capita):	234

Table 3,1 Maize Production at the First-generation Sites: Dry Season Crop in 2004

Average Yield (kg/ha): 3,239

No. of Adults to be fed whole year (Adult/240kg): 267

As of November 2004, only Katema site has finished harvesting this dry season crop in all the farms (even they have started the second dry season crop in this year). Figure 3.1 shows the cumulative production of maize in Katema from 2003 rainy season to 2004 dry season (first harvest) based on the questionnaire survey data. Of maximum 30 club members, the average productions of maize in 2003 rainy season, 2003 dry season, 2004 rainy season and 2004 dry season are 426kg, 126kg, 786kg and 84kg respectively (Refer to ATTACHMENT-2.2).

Total production of dry season crop in a year, therefore, occupies 23% in 2003 and 10% respectively. Farmers in Katema say that the harvest in dry season 2004 was low due to cold weather. Anyway they are now growing the second round of dry season maize in the same farm, so they will be getting additional harvest in January or February. As the figure shows, the gap of production between with and without irrigation widens year year, showing bv the significance of dry season crop in the site.



It was found that most of the farmers are selling maize harvested from the irrigation farm as green and they buy dry maize for their staple food, since the price of green maize is so high

that they can get more amount of dry maize. Hence, the Study Team tried to estimate the monetary value of the maize production in the verification project sites. The Study Team valued the cobs by weight in order to estimate potential gross product. Table 3.2 shows the result of the estimation (Conversion of production to value is based on the estimation on ATTCHMENT 2.5).

Total gross product in the 11 sites is estimated at MK2.7 million. Dividing by the area, gross product per ha is calculated at MK136,400. Average cropping area of maize per member is 0.072 ha leading to the gross product per capita at MK9,860, with which they can buy 1,000kg of dry maize. Irrigation in dry season gives farmers, even though it is a small plot, not only food to supplement but also considerable income, hence purchasing power of farmers is empowered.

		No. of	Planted		% of Are	a by Incon	ne Grade				Area (ha)			Gi	oss Site	Produc	t (MK)	
No	. Club	farmers who grew maize	Area (ha)	Very High (MK/ha)	High (MK/ha)	Middle (MK/ha)	Low (MK/ha)	Very Low (MK/ha)	Very High	High	Middle	Low	Very Low	Very High	High	Middle	Low	Very	Total
		(estimate)	(estimate)	285,016	199,204	158,716	97,568	58,917											
	Mtuwanjovu	13	0.80	5	65	20	10		0.04	0.52	0.16	0.08	0.00	11,401	103,586	25,395	7,805	0	148,187
2	2 Ngoni	23	3.70		10	30	40	20	0.00	0.37	1.11	1.48	0.74	0	73,705	176,175	144,401	43,599	437,879
3	3 Mgunda	11	0.50		10	10	50	30	0.00	0.05	0.05	0.25	0.15	0	9,960	7,936	24,392	8,838	51,126
4	Mankhamba	18	3.00		20	20	40	20	0.00	0.60	0.60	1.20	0.60	0	119,522	95,230	117,082	35,350	367,184
ę	j Tikolore	41	3.00	5	35	20	35	5	0.15	1.05	0.60	1.05	0.15	42,752	209,164	95,230	102,446	8,838	458,430
6	3 Tilime	61	2.40	20	50	20	5	5	0.48	1.20	0.48	0.12	0.12	136,808	239,045	76,184	11,708	7,070	470,814
7	⁷ Loyi	3	0.20			10	90		0.00	0.00	0.02	0.18	0.00	0	0	3,174	17,562	0	20,737
8	Kambware	1	0.05				100		0.00	0.00	0.00	0.05	0.00	0	0	0	4,878	0	4,878
9	Msambaimfa	30	2.50		20	50	20	10	0.00	0.50	1.25	0.50	0.25	0	99,602	198,395	48,784	14,729	361,510
10	Gontha	17	1.70			30	70		0.00	0.00	0.51	1.19	0.00	0	0	80,945	116,106	0	197,051
1'	Katema	56	1.95	5	5	15	5	70	0.10	0.10	0.29	0.10	1.37	27,789	19,422	46,424	9,513	80,422	183,570
1	otal (Average)	274	19.80	4	22	26	31	17	0.77	4.39	5.07	6.20	3.38						2,701,367

Table 3.2 Estimation of Gross Income from Dry Season Maize at the First-generation Sites in 2004

Area/capita (ha): 0.072 ha/capita

Average Gross Income per member (MK/capita): 9,859 Average Gross Income per ha (MK/ha): 136,433

3.2 Profitability of Vegetable Crop

For those who did not grew maize but other crops in dry season also received benefits from the irrigation. Tables 3.3 and 3.4 below show net income estimate of Irish potato and cabbage. The samples are farmers in Namanolo and Tilime. A farmer in Namanolo grew Irsih potato in 0.09ha. Tough the harvest was not very good, he earned gross income of MK15,600 or net income of MK9,900. As for a farmer in Tilime, she grew cabbage in 0.016ha. The plot was small and because chemical pesticides were not applied, the produce was eaten by caterpillars, resulting in low price. But still she earned gross income of MK6,220 or net income of MK5,620.

Adding family labor value to the production costs of these crops, net profits of the potato and cabbage are calculated still surplus. The net profits of the potato and cabbage are MK4,747 and MK4,045 respectively. This means that with the same family labor the farmers get more income from cultivating crops than working for piecework instead. Smallholder irrigation in dry season has such profitability and therefore farmers are concentrating on irrigation and quitting non-farm job as reported below.

....

Table 3.3 A Profi	t Estima	ite of Irish Po	otato	Table 3.4 A Pro	ofit Estin	nate of Cabb	age
Club		Namanolo		Club		Tilime	
Crop	Iris	n Potato (Rosina	fumbue)	Crop		Cabbage	
Planted / Harvested Area		0.09 ha		Planted / Harvested Area		0.016 ha	
Production	1	2 bags (50~60k	g/bag)	Production		622	
Unit Price (MK)		1,300		Unit Price (MK)		10	
Gross Income (MK)		15,600		Gross Income (MK)		6,220	
Cost	Amount	Unit Price (MK)	Total (MK)	Cost	Amount	Unit Price (MK)	Total (MK)
Seeds	50kg	12	600	Seeds	4 pack	50	200
Chemical Fertilizers (Urea)	65Kg	1,675/50kg	2,178	Chemical Fertilizers (Urea)	10 kg	2000/50kg	400
Hired Labor				Hired Labor			
Land Crearing	6 men	MK50/(4hrs)	300	Land Crearing			0
Harvesting	6 men	(2bags were given)	2,600	Harvesting			0
Family Labor	414hrs	MK50/(4hrs)	5,175	Family Labor	126 hrs	MK50 (4hrs)	1,575
Total (Excluding Family Labor)			5,678	Total (Excluding Family Labor)			600
Total (Including Family Labor)			10,853	Total (Including Family Labor)			2,175
Farm Income (MK)			9,922	Farm Income (MK)			5,620
Net Income Ratio(%)			63.6	Net Income Ratio(%)			90.4
Net Profit (MK)			4,747	Net Profit (MK)			4,045
Net Profit Ratio (%)			30.4	Net Profit Ratio (%)			65.0

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3.3 Benefit of Irrigation: Reinvestment in Fertilizers⁸

Interviews conducted in May – June 2004 revealed that 21 farmers out of 52 interviewees, about 40%, had to buy dry maize for their staple food in 2003. Those are regarded as staple food insufficient family⁹. The average amount of maize consumed by those households in year 2003/04 was about 753kg, composed of 403kg from 2002/03 rainy season agriculture, 126kg from 2003 dry season agriculture with irrigation, 202kg of purchased maize, and the balance of 22kg supplemented by dimba farming (5 farmers out of 21 farmers practiced dimba farming).

Against the 403kg of 2002/03 rainy season production, the average production of rainy season 2003/04 increased to 605kg. Rainfall in 2003/04 was smaller than that of 2002/03. Other agricultural condition was not much different between the two seasons according to the farmers interviewed. The difference between the two seasons is fertilizer application: fertilizer applied in rainy season 2002/03 was 16kg as average per farmer while that of rainy season 2003/04 was 30kg, which is about double. The cultivated area between the two season is more or less: 0.61 ha in rainy season 2002/03 and 0.62 ha in rainy season 2003/04. Farmers said although the production from irrigation was not big, the 126kg¹⁰ of production reduced buying maize thereby allocating the money to buy fertilizer for the next planting which is 2003/04 rainy season agriculture.

In summary, we may assume as shown in the top of Figure 3.2: 1) minimum amount of maize necessary for a household per year can be 750kg, 2) if there is no irrigation, they need to buy

⁸ Base data is summarized in ATTACHMENT-2.3 and 2.4.

⁹ According to a baseline survey of 360 households carried out in year 2003 under this study, about 70 % farm household replied they could not produce self-sufficient maize from 2002/03 rainy season agriculture. This does not necessary mean that they actually bought maize since some of them must have opted not buying maize but substituting maize by cassava, mangos, etc.

¹⁰ Buying 126kg maize costs about MK1900 though very much dependent on season (Buying 1 kg of dry maize is about MK15 to as high as 20 while farm gate price of dry maize is about MK10-15, milling cost is about MK2.0-2.4 per kg). MK1900 can purchase a 50kg bag of fertilizer.

about 300kg of dry maize (they produce about 450kg inclusive of dimba production), and 3) with irrigation, more farmers can buy fertilizer for rainy season agriculture so that rainy season 2003/04 production increases to 625kg inclusive of dimba production. 625kg of maize production from rainy season plus 125kg¹¹ of maize from irrigation amount to the minimum requirement of 750kg, so that those farmers can be self-sufficient for staple food.

28 farmers out of 52 interviewees had enough harvest from 2002/03 rainy season so that they did not need to buy any dry maize. The average production of the rainy season 2002/03 of these 28 farmers was 937kg, that of dry season 2003 was about 129kg, and that of rainy season 2003/04 increased to 1,139kg. Fertilizer application was 74kg and 150kg for the two rainy seasons respectively. Then, we may assume as shown in the middle of Figure 3.2: 1) they can sell all the production of dry season 2003 over the original about 900kg, 2) with irrigation producing additional 125kg, more farmers can buy fertilizer for rainy season so that rainy season 2003/04 production can increase to 1,100kg, and 3) their production of dry season 2004 can be even doubled if they do dry season farming on different plot from rainy season.



Several farmers have 0.1ha (50m x 20m) or more for dry season farming and harvested as much as 350kg in dry season 2003. Also 10 farmers in rainy season 2002/03, and 18 farmers in rainy season 2003/04 harvested more than 1,000kg. Therefore, we may expect

¹¹ To produce 125kg of maize, 0.0375ha, say 25x15m plot, is usually required giving a yield of 3.3 t/ha.

Average irrigated farm per farmer for the 22 verification projects is 0.06ha, and about two thirds of the members have 0.0375 or more.

that probable maximum production and surplus for smallholder farming household can be as shown the bottom of Figure 3.2: 1) 1000kg for rainy season before irrigation comes in, 2) then irrigation gives additional 350kg, all of which can be sold if they want, 3) these farmers can buy more fertilizer for the following rainy season so that the production of the following rainy season can increase to 1,250kg (an average of 25% increase was achieved for all the interviewed farmers).

As indicated in Figure 3.2, we can see the impact of smallholder irrigation not only stands in the dry season supplementing the staple food but also is carried over to the following rainy season agriculture by enabling the farmers to buy more fertilizer for the following season. For example, in rainy season 2002/03, five out of eight interviewees in Ngoni Club applied fertilizer and the average was 43.8kg. In rainy season 2003/04, however, all of the eight interviewees applied 62.5kg of fertilizer in average because they got more than MK5,000 in average by selling dry season maize in green. Average rainy season production of the eight therefore increased from 703kg to 938kg.

According to the result of the questionnaire survey in November 2004, it was significantly observed that in three sites among 12 sties surveyed, namely Mtanda, Loyi, and Tilime, the club members on average increased amount of fertilizers in 2004 rainy season compared to 2003 rainy season and the consequent increases of rainy season maize production are realized (Figure 3.3). From 2003 rainy season to 2004 rainy season, the club members of Mtanda, Loyi, and Tilime increased fertilizer application on average from 68kg to 90kg, 31kg to 107kg, and 60kg to 74kg respectively. Consequential increases of maize production in 2004 compared to 2003 are from 377kg to 523kg in Mtanda, from 254kg to 437kg in Loyi, and from 430kg to 583kg in Tilime (Refer to ATTACHMENT-2.1).



3.4 Change of Income Source: Options for Income Generation

Questionnaire survey in November 2004 revealed that in four sites among 12 sites surveyed

the club members are shifting their income source more from farming than non-farm jobs. Table 3.5 summarizes on change of income share by source with analysis of the sites in which the shift of income source does not occur. Figure 3.4 shows the share of income by source in the four sites of Mtuwanjovu, Chikhasu, Ngoni, and Loyi (Refer to ATTACHMENT-2.1).

In Mtuwanjovu, on average of the club members, income from farming (excluding tobacco) in 2003 occupied only 5% of the total income, but it increased to 50% in 2004, while the share of non-farm income decreased from 20% in 2003 to 6% in 2004. In 2003, 16 interviewees out of 30 cut trees and sold firewood, but in 2004 only one out of 16 club members sol firewood in 2004. Because of irrigation in dry season, they did not have to cut trees for sale. Drastic change is observed in Chikhasu. For the members of Chikhasu mainly grew Irish potato and beans during dry season 2003 and income share from farming increased from 7% in 2003 to 87% in 2004, while income share of non-farm job decreased from 91% in 2003 to 6%.

Site	Shifting IS	Remark
Mtuwanjovu		
Zakumva	-	They lost all the harvest for dry season 2004
Ngoni		
Cikhasu		
Mtanda		
Tikolore	×	Farmers in these sites would sell vegetables like cabbage and
Tilime		therefore irrigation might not give significant impact to income share.
Loyi		
Msambaimfa	×	These three sites located in Ntchisi has been found less opportunity
Gontha	×	for non-farm job. Therefore, the income share from crop has been
Katema	×	high even before irrigation.

Table 3.5 Result of the Questionnaire Survey: Change of Income Share by Source

IS: Income Source





2003 ו
Data ir
Baseline Survey
ATTACHMENT-1.1

	Verage	(Total)					77	1961	20	22.4	57.1	20.4	400	172	43	410	166	40	810	338	42	1,171	627	544	39	44	34	212	3,311	59	3.3	1	6	2	-	4
			Katema	30			16	~	5	57	25	18	41	6	22	36	12	33	77	21	27	82	45	37	48	53	41	2	107	7%	n.a.	n.a.	n.a.	n.a.	n.a.	с с
	Ntchisi	Kalira	Gontha	29	-		2	21	4	17	70	13	43	12	28	56	20	36	66	32	32	120	62	58	39	48	29	14	615	47%	1.1	16	12	-	0	
nĝu			Msambaimfa	30			17	ω	4	59	28	14	32	17	53	31	25	81	63	42	67	84	44	40	61	68	53	8	1,363	27%	n.a.	n.a.	n.a.	n.a.	n.a.	4
Kasul			Lovi	29	****		 	29		0	100	0	37	16	43	30	15	50	67	31	46	107	60	47	34	43	21	20	1,151	67%	1.6	10	17	2	0	**
	Dowa	Mvera	Tilime	16	13		9	24	0	20	80	0	28	20	71	15	თ	09	43	29	67	96	54	42	42	44	38	17	1,834	57%	2.1	13	1	3	-	C
			Tikolore	18	12		m	27	0	10	06	0	27	8	30	16	2	44	43	15	35	76	47	29	54	57	48	27	4,335	%06	2.7	4	18	9	0	r
		eke	Mtsetse	90 90			-	13	16	с.	43	53	32	16	50	33	4	13	62	20	32	129	70	59	29	26	34	10	5,519	33%	2.9	20	3	0	0	1
:	edza Hills	Bemb	Mtanda	28			ō	16	12	0	57	43	26	15	58	37	9	16	63	21	33	115	63	52	11	g	17	8	4,787	27%	3.1	22	0	0	0	ō
jwe	Õ	(anyama	Mchiku	28	2		-	16	11	4	57	39	26	7	27	37	5	14	63	12	19	93	42	51	56	67	47	26	7,676	87%	7.2	4	2	8	4	÷
Lilong			Ngoni	28			10	10	6	34	34	31	43	23	53	55	30	55	98	53	54	76	42	34	49	62	32	30	5,412	100%	п.а.	n.a.	n.a.	n.a.	n.a.	5
	ongwe Eas	Mpenu	Duwu	29	1		4	18		18	82	0	29	12	41	35	16	46	64	28	44	96	47	49	34	45	24	24	4,877	80%	4.3	7	6	12	e	c
			Mtuwanjovu	30	0	0	14	2	6	47	23	30	36	17	47	32	17	53	68	34	50	97	51	46	31	31	30	26	2,052	87%	4.4	4	10	11	-	
			60 Households)	lewa	aoni	ther	rect	lirect	eneficiary	rect	lirect	eneficiary	No. of Sample(1)	born in different Village(2)	(2)/(1)%	No. of Sample	oorn in different Village	(2)/(1)%	No. of Sample	oorn in different Village	(2)/(1)%	total	men	women	total	men	women	otal	ncome (MK)	ng non-farm income	Ave.	0	1-3	4-6	7-9	10.40
ADD	RDP	EPA	0 Households = 3	Ch	Ň	Õ	D	lnd	Non-be	Di	Ina	Non-be	Male			Female			Total			/ Rate	ample)	ears old	Rate(%)			Ľ	Average it	% of sample havit	Earning	month				
			Site (12 stes*3	Ethnic			Beneficiary			Beneficiary			Migrant	(except single	children)	~						Literacy	(No. of s.	over 6 ye	Literacy F			Non-farm job								_

	Average	(Total)		0.8	0.23	0.03	0.48	0.01	0.01	0.01	0.04	0.01	0.13	0.13	0.03	0.01	0.02	0.00	0.00	0.01	0.00	1 14	141%	348	247	71	157	45	193	119
			Katema	0.6	0.03	0.02	0.49	0.00	00.0	0.01	0.22	00.0	0.00	0.05	00.0	00.0	00.0	00.0	00.0	00.0	00.0	0.82	137%	30	27	60	19	63	120	100
	Ntchisi	Kalira	Gontha	1.0	0.24	00.0	0.46	0.00	00.0	0.02	0.08	0.02	0.07	0.05	0.17	0.00	0.06	00.0	0.00	00.0	0.00	1.17	117%	27	22	81	13	48	203	157
ngu	>		Asambaimfa	0.6	0.32	0.02	0.09	00.0	0.00	0.02	0.10	00.0	0.01	0.01	0.06	0.15	0.12	00.0	00.0	00.0	00'0	06.0	150%	28	16	57	6	32	269	140
Kasu			Loyi	1.1	0.15	0.07	0.62	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	00.0	00.0	0.00	0.00	0.00	1.12	102%	30	29	97	27	90	90	83
	Dowa	Mvera	Tilime	1,4	0.20	0.08	0.81	0.03	0.03	00.0	0.00	0.00	0.39	0.00	00.0	00.0	00.00	00.0	00.0	0.04	0.00	1.58	113%	30	22	73	18	60	169	118
			Tikolore	1.1	0.31	0.09	0.32	0.05	0.05	0.00	0.01	0.00	0.26	0.00	0.00	00.00	0.00	0.00	0.00	0.02	0.00	1.11	101%	27	14	52	9	22	283	135
		eke	Mtsetse	0.6	0.19	0.01	0.65	0.00	0.00	0.01	0.02	0.00	0.11	0.30	0.00	0.00	0.05	0.00	0.00	0.00	0.00	1.34	223%	30	19	63	15	50	225	126
	edza Hills	Bemb	Mtanda	0.3	0.10	0.00	0.40	0.00	0.00	0.00	0.01	00.00	0.02	0.24	00.00	0.00	0.03	00.00	0.00	0.00	00.0	0.80	267%	30	26	87	19	63	125	100
Iwe		Kanyama	Mchiku	0.9	0.15	0.00	0.75	0.00	0.00	0.00	0.01	0.00	0.03	0.74	00.00	0.00	00.00	00.00	0.00	0.03	0.02	1.73	192%	28	20	71	6	21	191	107
Lilone		_	Ngoni	0.7	0.28	0.05	0.34	0.00	00.00	00.0	0.01	0.00	0.08	0.00	0.00	0.00	00.00	0.01	0.01	00.0	00.0	0.78	111%	30	21	70	13	43	200	111
	ongwe Eas	Mpenu	Duwu	0.8	0.45	0.02	0.39	0.00	0.00	0.00	0.01	0.03	0.16	0.08	0.10	0.00	0.00	00.00	0.00	0.00	00.00	1.24	155%	29	17	59	7	24	258	129
			Mtuwanjovu	0.6	0.29	0.00	0.40	0,00	0.00	0.00	0.01	0.09	0.14	0.03	0.08	0.00	0.00	00.00	00.00	0.00	00.00	1.04	174%	29	14	48	5	17	381	167
ADD	RDP	EPA	30 Households = 360 Households)	Total area	Maize (hybrid)	Maize (composite	Maize (local)	Tomato	Cabbage	Irish potato	Sweet potato	Cassava	Ground nuts	Beans	Tobacco	Onion	Soya bean	Bambala mean	Pegeon Pea	Winter maize	millet	Total	Intensitiy (%)	Total Sample	cannot produce No.	enoauh %	even cannot buy No.	%	Ave. Production(kg/capita)	Ave Production of Deficient household(kg/capita)
			Site (12 stes*3	Crop area (ha)											-									Cannot self	support	maize	(<240kg/capita)			

ATTACHMENT-1.1 Baseline Survey Data in 2003

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	ADD				Lilon	gwe					Kası	ngu			
	RDP		Lij	ongwe Eas	st j		Jedza Hilis			Dowa			Ntchisi		Average
	EPA			Mpenu		Kanyama	Bemt	oeke		Mvera			Kalira		(Total)
Site (12 stes*3)) Households =	360 Households)	Mtuwanjovu	Duwu	Ngoni	Mchiku	Mtanda	Mtsetse	Tikolore	Tilime	Loyi	Msambaimfa	Gontha	Katema	
Maize Yield	Hybrid	No. Used Hybrid(02/03)	13	7	12	***	1	7	4	4	4	10	1	1	65
(t/ha)	(Summer)	98/99	2.4	1.6	2.4	1.2	2.5	1.5	0.7	0.9	0.6	2.8	2.3		1.9
		00/66	2.5	3.4	1.5	0.9	2.2	1.4	0.5	0.5	0.5	1.7	1.2		1.7
		00/01	0.8	2.2	0.8	0.4	0.7	1.2	0.5	0.4	0.3	1.6	0.0		1.0
		01/02	1.1	2.9	0.9	1,1	1.7	1.4	0.5	0.7	0.3	1.1	2.4		1.2
		02/03	2.4	1.8	1.9	2.5	2.5	2.3	0.9	1.6	0.5	2.3	1.4	1.3	1.9
		By RDP(02/03)		2.1			2.3			1.0			2.1		
		02/03 W/ fertilizer (no.)	12	4	6	1	1	9	2	2	t t	8	1	t.	45
		02/03 W/ fertilizer (t/ha)	2.4	1.9	2.0	2.5	2.5	2.4	1.0	1,1	0.4	2.5	1.4	1.3	2.1
		By RDP		2.2			2.4			0.9		•	2.3		
		02/03 W/O fertilizer (no.)	-	e	9	0	0	*	2	2	e	2	ō	0	20
		02/03 W/O fertilizer (t/ha)	1.5	1.5	1.8			1.9	0.7	2.1	0.5	14			1.4
		By RDP		1.7			1.9			1.0			14		
	Composite	No. Used Composite(02/03)	1	5	3	0	ō	2	с С	e.	2	2	-	0	22
	(Summer)	98/99		3.0	0.4	0.7			0.4	0.3	0.4				0.0
		00/66			1.5	0.7			0.5	0.2	0.6				0.4
		00/01		1.5	2.1	0.3			0.5	0.2	0.4				0.8
		01/02	4.4	1.0	0.7	0.7			0.5	0.3	0.4				0.7
		02/03	3.5	1.5	0.0			1.3	0.7	0.0	0.6	1.8	3.6		1.3
		02/03 By RDP		1.5			1.3			0.8			2.4		
	Local	No. Used Local(02/03)	22	23	16	27	27	29	14	21	21	6	20	27	256
	(Summer)	98/99	1.6	1.8	0.6	0.6	0.8	0.7	1.0	0.2	0.3	1.6	1.0	0.7	0.9
		00/66	1.4	1.0	0.4	0.0	0.0	0.7	0.8	0.2	0.2	1.5	1.0	0.6	0.7
		00/01	1.3	1.0	0.5	0.1	0.5	0.6	0.6	0.2	0.2	0.9	0.9	0.5	0.6
		01/02	1.6	0.9	0.5	0.4	0.9	0.7	0.7	0.2	0.2	0.7	0.0	0.4	0.7
		02/03	1.6	0.0	1.1	0.5	0.7	1.0	0.9	0.5	0.3	1.6	0.0	0.8	0.0
		02/03 By RDP		12			0.7			0.5			1.0		
Maize Storage (Type)	Wove	en bamboo	0	4	0	12	-	4	12	14	6	17	20	26	119
	Wov	en grass	10	0	18	4	0	0	4	4	5	0	1	0	55
	Compac	cted soil wall	10	1	0	*	0	2	0	0	2	0	0	0	16
	Clay (im	iproved) wall	0	0	4	0	19	12	1	1	0	0	0	0	37
	E	Bricks	1	1	2	0	1	0	2	1	1	0	0	0	9
		Bags	6	9	3	7	6	9	11	6	12	2	7	3	84
	An	iv other	0	0	0	2	-	2	0	0	0	3	1	1	10
Assets	U.	Dxcart	0	1	0	1	-	0	1	2	0	4	3	0	1
	ш	Radio	19	6	10	10	9	11	18	9	8	25	14	17	13
	В	licycle	14	10	13	2	3	18	5	6	2	14	11	10	9
	Trea	dle Pump	0	2	3	0	0	0	0	5	0	0	2	0	-

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	Average	(Total)		11	3	12	e			35	136			42	110			16	19			43	276			110	420			20	300	24	11	96	ෆ	131	240	-	4	31	21	59	က	16
-	T		Katema	11	n	11	n	0	0,11	12	30									4	0.06	19	43									24	14	14	2	50	16	2	3	0	e	93	0	2
	Ntchisi	Kalira	Gontha	10	4	10	с С	6	0.14	19	49					-	0.40	3	2	9	0.05	4	88									24	16	11	5	170	21	0	*	31	0	95	0	8
1	2		sambaimfa	19	с С	19	3	5	0.17	27	61					-	0.30	7	2	5	0.11	55	139	1								55	11	175	14	65	25	-	14	48	18	91	0	0
Kasun			Lovi	5	-	7	-	2	0.12	33	198									9	0.25	19	171									ō	0	0	e	31	e	0	2	e	28	41	ō	31
	Dowa	Mvera	Tilime	6	2	6	e	G	0.33	0	62	2	0.10	20	40	e	0.50	2	2		0.22	23	195	-	0.10	20	40					63	***	5	10	09	.	2	9	14	16	32	4	52
			ikolore	16	2	18	4	4	0.18	19	245									6	0.19	21	214									36	4	ω	12	62	16	*	9	50	14	43	0	29
		exe exe	Atsetse T	16		16	ę	25	0.07	78	227					-	0.05	40	4													14	18	99	21	135	39	0	0	38	9	56	9	9
	dza Hilis	Bembe	Atanda N	6	2	6	2	22	0.05	69	202																					7	25	÷	11	68	36	0		63	10	60	10	õ
Q		anvama	Mchiku N	9	5	9	З	10	0.10	70	187																					0	7	798	80	397	15	2	e	23	65	35	0	0
- inde		Ŷ	Ngoni	10	9	10	5	2	0.10	20	150	2	0.10	25	130					19	0.06	120	1.084	-	0.01	200	800	*	0.10	20	300	7	12	27	16	97	28	S	<u>б</u>	30	62	14	0	14
	nowe East	Mpenu	Duwu	ω	2	ω	2		0,10	40	120	-	0.10	80	160	2	0.05	21	34													14	12	16	e	44	15	0	-	40	22	67	11	9
	1 ilor		Mtuwanjovu	16	2	16	6	7	0.12	28	103					12	0.13	26	31	- - -												41	6	24	9	398	15	ō	2	37	11	84	0	16
			30 Households)	cN	time/week	No.	time/week	No	ha	hr/time/ha	hr/week/ha	No.	ha	hr/time/ha	hr/week/ha	No.	ha	hr/time/ha	hr/week/ha	GN	Pa	hr/time/ha	hr/week/ha	No	ha	hr/time/ha	hr/week/ha	Ň	ha	hr/time/ha	hr/week/ha	S(%)	Grant No	Grant ko	Purchase No.	Purchase ko	Total	Grant	Purchase	s(%)	now to make	Norkload	is effective	ther
		FPA	0 Households = 36	Summer		Winter		Watering cane	L:	<u>.</u>		Treadle pump			L	Gravity	l	[<u>I</u>	Watering cane				Treadle pump	<u>-</u>		<u>}</u>	Gravity	 ,	<u> </u>	<u> </u>	orestry SpeicesYe	Fertilizers		I	I	I	Pesticides	I	Ye	Not know h	Heavy	Chemical	ō
			Site (12 stes*3	Radio Listenina				Irrigation (Maize)			5									Irrigation (Vegetable)))											Aarof	Input							Manure				

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	Average	(Total)		-18	-28	-47	47	-24	*	6	9	4	10	36	29	18	15	33
			Katema	-27	-35	48	-99-	-27	6	с 2	e	5	5	30	17	10	2	17
	Ntchisi	Kalira	Gontha	-22	-26	-2 <u>0</u>	-51	-35	11	4	2	2	1	37	13	2	2	e
ngu			Msambaimta	-11	-24	-30	-95	-17	12	80	12	7	6	40	27	23	2	30
Kası			Loyi	-39	49	-9 -	-41	-32	с.	e	4	e	8	10	10	13	10	27
	Dowa	Mvera	Tilime	-21	-36	-63	-32	-23	10	5	-	6	12	33	17	e	80	40
			Tikolore	-17	-30	-55	-41	-27	11	2	e	4	10	37	23	10	13	33
		oeke	Mtsetse	-4		-28	-21	-7	12	14	2	6	14	40	47	23	30	47
	oedza Hills	Bemt	Mtanda	-26	-35	-40	-46	-50	9	4	3	ŀ	3	20	13	10	3	10
gwe		Kanyama	Mchiku	0	မု	-74	-28	-33	15	12	1	7	7	50	40	3	23	23
Liton	st		Ngoni	-42	-48	-54	-41	-21	7	5	5	6	11	23	17	17	20	37
	ongwe Ea	Mpenu	Duwu	1	-31	-53	-83	-11	16	19	15	4	19	53	63	50	13	63
			Mtuwanjovu	-8	-4	-12	-48	ς. Γ	16	19	15	4	19	53	63	50	13	63
ADD	RDP	EPA	(0 Households = 360 Households)	98/99	00/66	00/01	01/02	02/03	98/99	00/66	00/01	01/02	02/03	98/99	99/00	00/01	01/02	02/03
			Site (12 stes*3	Food Security					Food Security	(No. of self-	sufficient	household)		Food Security	(% of self-	sufficient	household)	(

ATTACHMENT-1.2 Income by Source: Baseline Survey in 2003

$(n \epsilon) \circ m$	i cri i loaddholaj								
RDP	Site	Non-	Crop	Crop self	Crop	Perenial	Livestock	Total	Total
	Mutwanjovu	2,052	3,257	10,664	13,921	34	1,097	6,440	17,104
Lilongwe Eas	Duwu	4,877	2,780	13,912	16,692	79	545	8,281	22,193
	Ngoni	5,412	-974	9,879	8,905	880	0	5,318	15,197
	Mchiku	7,676	-375	6,323	5,948	111	54	7,466	13,789
Dedza Hills	Mtanda	4,787	-465	4,340	3,875	0	93	4,415	8,755
	Mtsetse	5,519	-2,429	11,305	8,876	0	1,623	4,713	16,018
	Tikolore	4,335	314	7,259	7,573	131	171	4,951	12,210
Dowa	Tilime	1,834	-346	3,591	3,245	122	135	1,745	5,336
	Loyi	1,151	-69	2,502	2,433	17	0	1,099	3,601
	Msambaimfa	1,363	13,022	27,179	40,201	81	64	14,530	41,709
Ntchishi	Gontha	615	6,952	5,914	12,866	241	1,233	9,041	14,955
	Katema	107	2,033	5,693	7,726	164	659	2,963	8,656
Ave	erage	3.311	1,975	9,047	11,022	155	473	5,914	14,960

(1/2) Unit: MK / Household)

(2/2) Unit: %)

RDP	Site	Non-farm	Crop	Crop self	Crop total	Perenial	Livestock	Total cash	Total
	Mutwanjovu	12	19	62	81	0	6	38	100
Lilongwe East	Duwu	22	13	63	75	0	2	37	100
	Ngoni	36	-6	65	59	6	0	35	100
	Mchiku	56	-3	46	43	1	0	54	100
Dedza Hills	Mtanda	55	-5	50	44	0	1	50	100
	Mtsetse	34	-15	71	55	0	10	29	100
	Tikolore	36	3	59	62	1	1	41	100
Dowa	Tilime	34	-6	67	61	2	3	33	100
	Loyi	32	-2	69	68	0	0	31	100
	Msambaimfa	3	31	65	96	0	0	35	100
Ntchisi	Gontha	4	46	40	86	2	8	60	100
	Katema	1	23	66	89	2	8	34	100
Ave	erage	27	8	60	68	1	3	40	100

ATTACHMENT-1.3 Distribution of Households by Income Level (Baseline Survey in 2003)

									(Unit: MK)
000	0.44	- 5000	5000 <	10000 <	15000 <	20000 <	30000 <	50000 <	< 100000
RDP	Site	< 5000	10000	15000	20000	30000	50000	100000	< 100000
	Mutwanjovu	4	10	4	4	3	2	1	2
Lilongwe Eas	Duwu	3	8	7	3	7	0	1	1
	Ngoni	3	10	9	4	2	1	1	0
	Mchiku	9	6	8	1	3	2	1	0
Dedza Hills	Mtanda	15	8	1	2	3	1	0	0
	Mtsetse	9	3	6	3	3	6	0	0
	Tikolore	4	10	9	3	3	1	0	0
Dowa	Tilime	15	11	4	0	0	0	0	0
	Loyi	26	1	3	0	0	0	0	0
	Msambaimfa	6	3	2	2	4	4	7	2
Ntchisi	Gontha	7	11	4	1	2	4	1	0
	Katema	10	10	8	0	2	0	0	0
Τ	otal	111	91	65	23	32	21	12	5

(MK/Year/HH)
Estimate
l Income
Household
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ATTACI	HMEN	II-1.4 MOUSENOIC		Estiman		4.11.1Jp																
		Non Fer					Ċ	op Income			Perenni	ial Crop Inc	ome		ivestock		Total In	come	Self	Maize N	a. of Farmity	% of
Site	Code				Land Rent	Gross Income	Farm inputs	Hired	Depriciatio n of tools	Net Income	Gross Income	Cash Inputs	Net Income	Gross Income	Cash Inputs	N e t Income	Gross	Net	Consume Value(MK)	Self-	Converted	home home
		qof	Earning	Θ	0	6		6	 ©	n=3-(g) +5)+6)	9	. ©	©-8=Ø	9	. 0	0-0-0)+3+0 9=0+3+	0=0+0+0 0+0+0	í ®	Kg/capit	vamen to vale adult)	*
Mtuwanjovu	Mu-1	fuel wood and Building house	3	1,000		4,000	ō	0		4,000	0	0	0	0	0	0	5,000	5,000	7,044	269	2.6	64
	Mu-2	Fuel wood	9	6,020	-	4,288	4,325	0		-37	200	0	500	0	ō	0	10,808	6,483	3,156	182	2.2	42
	MU-3	Fuel wood		600		15 000	4,811	80		9,229	0.0		0	220	0	550	16,150	10,379	22,594	733	4.3	86
	Mu-5	Fuel wood	24	1 280							5/2		5/0		50		14,2/0	13,3/U	C 694	1001	000	20
	Mu-6	Fuel wood	Γ (C)	1,302		6,800	3,720			3.080	olo	0	0	0	0	0	8,102	4,382	15.033	256	43	80
	7-UM	Selling chickens	2	1,175		760	5,670	1,500		-6.410	285	0	285	760	0	760	2,980	-4 190	32,036		0.0	98
	MU-8	Selling pots	9	1,800		a	ö	0		6	0	0	0	000	0	300	2,100	2,100	2,100	83	3.6	100
	Mu-9	Selling firewood	ю <	1 680		00	2,910	00		-2.910	285	0	285	1,500	00	1,500	2,585	-325	8,670	256	44	100
	M 10	Sallinh firewood	10	1,000		16 711	00/	0 200 0		-/ 001	909 909		305	1,880	0	1,880	3,865	3,165	6.331	230	3.7	8
	Mu-12	Charconat selling	70	820			3,125	0,203		502.0			3	09219	0 0	2,350	22,461	11,053	13,374	1,250		44
	Mu-13	Selling Vegetables	4	480		ó	3,610	0		-3,610	ö			400		400	880	-2.730	3.500	227	22	100
	Mu-14	Selling Vegetables	2	1,100		ò	6,387	0	-	-6,387	430	0	430	0		0	1,530	-4.857	17,150	839	3.1	9
	Mu-15	Selling firewood	Ű,	270		260.	0	0		260	0	0	0	0	0	0	530	530	2,205	100	3.7	89
	91-UM	Beer brewing		800		8 900	6,645	2,100		155		0	0	1,800	0	1,800	11 600	2,855	21,653	169	39	71
	MI-18	Find goats and Tailoring	•	10,100		1000.01	8,930:	4,300		-3,230	0		0	00	5	0	20,100	6,870	10,206	357	2.8	200
	Mu-19	Fuel wood		5,650		5 050	1 085			3 965				56			10,700	0.645	1 200	175	0 0 0	39
	Mu-20	Charcooal selling	9	1,200		400	ō	0		400	0		0	125		125	1,725	1221	5374	307	200	6
	Mu-21	Fire wood selling	10	5,500		7,860	1,975	0		5,885	0	0	6	0	0	0	13,360	11 385	5,900	167	4 8	43
4	Mu-22		0	0		18,000	3,930	0		14,070	730	0	730	8,100	0	8,100	26,830	22 900	8,563	183	5.2	32
	Mu-23	Fire wood selling	9	800		1,100	0	0		1,100	0	0	ò	0	0	0	1,700	1,700	7,425	318	2.2	87
	MU-24	0.000		000		28,200	2,070		-+	26,130		0	8	22,500	0	22,500	50,700	48,630	15,569	600	3.5	99
	07-NM	Eise mood colling	4	2,500		1 400	3,310	0		-1.910	00	0	0	0	0	0	3,900	590	40,596	1,286	3.7	67
	07-1M	Fire wood selling		4 000			7 100 C	o c		000	20			3,400	ö	3,400	8,900	8,900	3,791	128	4.7	72
	Mu-28	Fire wood selling	12	3.640		2000	20			7 000		jë		00+14		7,400	10.640	10 640	8,738	234	4 1 0	22
	Mu-29	Fire wood selling	12	009		006				006		0					1.500	1500	5 263	1002	0	85
	Mu-30		0	0		41,500	4,060	0		37,440	0	0	0	0	0	ō	41,500	37 440	22,425	458	7.2	35
	Average		4	2,052		6,241	2,412	571		3,257	26	0	26	1,669	0	1,669	10,059	7,075	10,664	381	3.3	63
Duwu	Du-1	Beer Brewing	9	4,200		1,750	1,685	0		65	00	0	100	0	0	0	6,050	4,365	9,255	156	3.2	84
	Du-2	Beer Brewing		1.000		960	0	0		096	ō	0	0	0	0	0	1,960	1,960	12,657	68	6.2	69
	e-no	Grocery	12	53.000		24,000	10,747	3,000		10,253	0	0	0	9 <mark>0</mark>	0	10	77,100	63,353	4,184	292	3.6	15
	4 4	Beer Brewing		007,		525	50	30		495	0		0	0 000 1		000	7,725	7,695	11,525	121	2.9	96
		Firel word selling	+	14 200		2000	1 850	1 500		000					5		20 064	10001	10/00	1100	2	80 81
	0-7	Fire wood	29	5 800		213001	6.551	4 650		10.099				1 350	ē	1 350	28,450	17 249	1 505 8	201,1	0.0	28
	Du-8	Beer Brewing	0	0		1 600	ö	1 000		600	200	,0	200	6.000		000	7,800	6.800	17,303	171	4	92
	Du-9	Fuel wood selling	9	2,930		250	350	0		-100	0	0	0	3,800	0	3,800	6,980	6,630	7,658	883	1.8	67
	Du-10	Nothing	0	0		ö	0	0		0	¢	0	0	0	ō	0	ö	0	10,948	150	3.5	<u>5</u>
	0n-11	Fuel wood selting		1,000		9,768	5,820	0		3,948	0			0	0	0	10,768	4,948	3,864	182	44	28
	Z1-00	Poor Braining	ດ 	2,400		0	000			0,00	201		100	00	50	0	2,500	2,500	11,605	99	4 0	001
	Du-14	Charcoal	0 4	1 400		1 843	250	D C		1 202	202		150				3,102	2 843	3,476	167	0 -	55
	Du-15	Fuel wood selling	0	006		1219	ö	140		1.079	ö	0	20	1.800	0	1,800	3.919	3.779	5,842	125	2.2	88
	Du-16	Fire wood	G	2,880		0	0	0		0	ō	0	0	0	0	0	2,880	2,880	4,000	100	4.0	100
	Du-17	Fuel wood selling	9	1,200		0	0	0		0	0	0	0	0	0	0	1,200	1,200	4,514	400	1.0	100
	Du-18	i		0		750	204	250		296	500	0	200	0	0	0	950	496	8,700	250	7	6
	DU-18	Fire wood	↓ -	8301	Ť	3,050	190	50		2,860	- -	5	50	5	50	5	3,880:	3,690	14,495	363	40	38
	D1-20	Fuel wood selling	-1 t	5 280		130	2005			797	se		50	50		50	5 410 E 410	44/	4018	425	2.2	ß
	Du-22	Selling cases and colatons. Fuel wood	. 0	21,200		0	0	0		0	872		872	c			22 072	22 022	3 921	c	40	100
	Du-23	Fuel wood selling	3	2,700		0	0	0	+	0	0	0	0	0		0	2,700	2,700	852	83	3.6	100
	Du-24		0	0		640	0	ö		640	0	ö	0	ö	ō	0	640	640	19,724	0	2.3	97
	Du-25			0		140 000	72,150	21,650		46,200	0	0	0	0	0	0	140,000	46,200	168,224	359	4.6	55
	97-n7	Fuel wood selling	»,-	003 -		1004.5	1,900	50		1,600	200		200	1,500	5	1 200	6,000	7,100	3,387	500	4	49
	0-28	Deel Drewing	₹ C				10441			440					50		1001	000	7 087	9 ¥	0,0	38
	Du-29	Beer Brewing	n N	3.900	Ì	2 400	573	0		1 827	jä			0			6 300	5 727	15 527	361	18	87
	Du-30	Fire wood	9	515		0	1,400	0		-1,400	0	0	0	0	0	0	515	-965	21,213	556	1.8	100
	Average	<u> </u>	4	4,877		7.403	3.549	1,074		2,780	98 98	0	86	558	ō	558	12,923	8,300	13,912	258	3.0	65

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(MK/Year/HH)
Estimate
Income
Household
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-							Ċ	emond on			Dereon	ial Cron Inc	, mu		ivestock		Total I	ncome				24.04
		Non-Farm	Income		and Rent	Gross	Farm	Hired	Jepriciatio	Net	Gross	Cash	Net	Gross	Cash	Net	Gross	Nat	Consume	Maize Self-	No. of Family Consumer (Consumer	prodcution: home
Site	ode		Tornion T			Income	inputs	Labor	n of tools	Income	Income	Inputs	Income	Income	Inputs	Income	80 D	5	Value(MK)	support	children and women to	consumed
	Jot	٩	month	Θ	8	•••		0	9	7)=@-(@) +@+@)	8	0	B-8-8	8	٩	@-()-@	+0+0+0 0+0+0	+0+0+0 0+0+0	9	Kg/capit a	male adult)	%
Ngoni Ng	-1 Migrant worl	×		3.200		ò	3,570	0		-3.570	0	0	0	0	0	0	3,200	-370	6.545	333	1.8	100
BZ Z	-2 Migrant wor	× ×		3,500		ö	1 200	0		-1,200	0						3,500	2,300	9,300	201	0.4	300
	-C Craft work, Farm lab	or is other farm		2,000		ō	009			1009	ä						5 700	5100	18,003	587	2.8	100
DN N	-5 Moulding br	icks		7,000		0	110	0		-110	0	0	0	0	0	0	7,000	6,890	6,380	107	2.8	100
6 N	-6 sym uabout on either 4 m selfs	- the field indirection		3,600		1,450	0	0		1,450	0	ö	0	0	0	0	5,050	5,050	59	0	4 8	4
BZ	-7 Sale of fuel	poom		500			0	ö		0				0			200	500	8,000	138	0.0	001
o ć Z Z	G Ricycle rena	2ir		3,000		1 200	2,430	э с	+-	-2.430					5 c		5,000	5 040	7 871	1201	250	87
n DN	-10 Labour work			3,200		2,550	200	0		2,350	0	ò	0	0	0	0	5,750	5,550	6,837	95	6.5	73
E	-11 Garden boy			6,000		0	1,785	Ó		-1.786	0	0	0	0	0	0	6,000	4,215	3,886	141	2.2	100
D _Z	-12 Sales of gra	iss		5,500		0	2,830	0		-2.830	0.00	0	0	0	0		5,500	2,670	12 137	170	5.3	100
6N N	-13 Toilaring			6,200		000 2	445	0 101		- 445	1000		1 000	0.0			7,200	6,/55	20,/00	197	α 4 α	001 98
	15 Grocerv and	tea room	-	8000		0000	380	074 4		1, 190			000/67				8,000	7.620	8.345	107	5.6	100
Z	-16 Vegetables sales and	d migrant work		9,100		1,200	3,450'	0		-2.250	0	0	0	0	0	0	10,300	6,850	7,855	225	4.0	87
Z	-17 Sales of fue	l wood		2,400		2,400	0	0		2,400	0	0	0	0	0		4,800	4,800	12 409	540	2.5	8
	-18 Selling vegetables	and brew beer		2,900		0	0		.	000			50	S			2,900	Z,800	7975	26	404	
	-19 Craft work and -	migrant work		2050			1 120			1120		5					3050	1 030	6 549	58	9 C	00
	-21 Craft work and farm la	thour in other field		6.590		0	1 140	0		-1.140	500	0	200	o o	0		2060	5,950	4 200	88	3.6	100
δN	-22 Migrant wor	÷		2 300		0	370	0		-370	0	0	0	0	0	0	2,300	1,930	1,636	58	2.6	100
Z	-23 Piece works at the t	trading center		2,950		0	310	ö		-310	0	0	0	0	o		2,950	2,640	6,545	26	6.2	8
9 Z	-24 Sales of vegetables a	ind migrant work		5,630		2,6001	2,730	0		-130	0		0		0		8,230	5,500	14 049	375	3.2	84
SN 2	-25 Labour wor	<u>_</u>	╡	6 430 6 260	T	0 00	1,860	00		-1.060	50	5	0			old	7 750	4,5/U	11 0051	132	5 C	26
	-ZD Lacour work for both	food and vicome	-	1 500		A1400	0077				5 c						1 500	1,500	1.000	22	45	102
Z	-28 Brewing bee	eer		10,800			112	0		-112	0	0	0	0	0		10,800	10,688	3,300	68	4.4	100
Ng	-29 Sales of fue	l wood		0		ō	5,480	0		-5,480	0	0	0	0	0	0	0	5,480	46,677	736	5.3	100
SN N	-30 Migrant wor	÷		3,250		0	100	0		-100	0	0	0	ö	0	0	3,250	3,150	0	0	4.2	
Av	erage			5,412		703	1,530	148		-974	883	0	883	0	0		6,998	5,321	6/8/6	200	4.2	28
Mchiku Mc	-1 Farm labour, Fire	wood selling		298			0120	ö						200	ölö	200	498	498	4 305	4/4	000	30
ž	-Z Sawyer			2 200		002	CC7	5 c		090	5	ə 					33 1400	1071 CE	5,005	141	06	898
No.	-3 Forestry bet	er prewing		8 210		1001	2 466	680		-3 046	380		380	600		800	9,290	6.144	8.690	277	2.6	6
MC	-2			0		0	56	0		-50	0	0	0	0	0	0	0	69	Ö	0	3.2	
Mc	-6 Kachasu br	ewing		3,600		0	2,990	0	-	-2,990	300	0	300	130	0	130	4,030	1 040	7 483	240	2.5	9
Ň	-7 Seeling fire	poow		480		0	1,455	0		-1.455	0,00	0	0	0	0		480	-975	2,995	180	1.5	96
Ĭ	-8 Kachasu br	ewing		1,550	Ť	1,500	ö	00		1 500	1,100		1001.1				4,230	4,230 525	0.900	217	ν.γ γ	75
NIVI VIVI	-10 Eirewood			3 870		070		5 6		070	465	ē	465				4 335	4 335	1.350	61	2.2	100
MC	-11 Working at	estate		6.900		80	1.336	Ö		-1.276	0	Ö	0	ö	Ö		6,960	5,624	5,435	194	2.2	66
Mc	-12 Beer, work	at estate		6,010		225	65	0		160	0	¢	0	0	0	0	6,235	6,170	6,093	132	3.8	96
Ŵ	-13 Seeling gro	ceries		3,950		0	390		-	065-	0			0			3,950	3,560	26,167	372	5.8	100
Ň	-14 So machine			920		6,600	6,440			091	50						220	2001	7 188	120	0.0	296
MC	-15 Sawing	aar hraming		33 900		000							5 C				33 900	33,900	9,974	101	8.4	100
M	-17 Seeling fire	poom		4,250		60	0	0	-	60	006	0	006	0	0		5,210	5,210	2,748	68	3.0	86
Mc	-18 Sawing, bee	er brewing		7,280		1,500	0	0		1,500	0	0	0	0	0	Ċ	8,780	8,780	21,041	297	6.5	66
¥	-19 Seeling fire	poow		1,315		1,810	ō	0		1,810	0	0	0	1,000	0	1,000	4,125	4,125	6.721	88	4	10
Ă	-20 Sawing, bet	er brewing		4,930		006	355:	0		545	ö	00	0	00	00		5,830	5,475	4,970	110	0.4	200
Ň	-27 Estebioa fic	Poone		5 100		1 100	2,140			150				5 c			8 200	5 250	3 176	49	37	312
ž	-23 Sawver			60,000		2,000	1.050	0		950	0	0	0	0	ō		62,000	60,950	6,600	129	2.9	77
ž	-24 Vegetables	garden		2.250		200	006	0		-200	0	þ	0	0	0		2,950	2,050	2.486	94	1.8	78
W	-25 Transporting tornato	work for ADMARC		9,640		0	946	0		-946	0	0	0	0	0	0	9,640	9,694	5,033	162	2.5	100
Й	-26			0		Ö	2,230	0		-2,230	0	0	0	0				-2.230	1,790	55	2.2	000
×.	2-27 Fetching fir	Tewood		4 300		ö	550	0	- 	-550			00				4,400	3,850	3,/50	828	0.0	
ž ž	-20 Beer			20 500			2 550		-	2 560	5 c						20,500	17,950	2,991	114	22	
<u>W</u>	-30 Fetching fin	poome.	+-	2,000	T	0	650	ö		-650	ö	0	0	0	0		2 000	1 350	2,786	91	2.2	100
Ā	srage			7,676		596	949.	23		-375	111	0	111	64	0	64	8,448	7,476	6,323			91

(MK/Year/HH)
Estimate
Income
Household
ENT-1.4
TACHM

Site Co Mtanda <u>Mt-</u>							oweren er									A THE					
Mtanda Mt.	Na. Par	annaar) m				5–			ł	refenni	al Crop Inc	ome		_ivestock			COLINE	Self	Maize	Vo of Family	% 01
Mtanda <u>Mt-</u> Mt-				Land Rent	Gross Income	Farm	Hired D	tepriciatio	Net	Gross	Cash Inputs	Net Income	Gross Income	Cash Inputs	Net Income	Gross	Net	Consume Value(MK)	Self- support	Consumer (Converted children and	houcouou. home consumed
Mtanda Mt-7 Mt-2	dol	Earning month	Θ	0	0	⊜	@	9)=©-(€)	0	. 0	@-8-@	8	. 9	@-()-@	+©+©+©	+@+()-()	´ (9	Kg/capit	women to male adult)	%
Mt-		0	0		0	450	0		450		o	-	Ô	0	0	0.0	450	ō	111	4.5	100
MI		0	0		006	1,200	o		-300		o		o	0	ō	006	-300	5,825	250	2.2	87
		0	0		0	270	0		-270		ö		0	ö	0	¢	-270	1,413	16	6.2	100
MI-1			30,600			0	ó		000		0	-	1,800	ö	1,800	32,400	32,400	0.345	44	5 C	001
MI-F					150	200	> c		-350		ċ			o c		150	-350	2 633	209	35.0	36
Mt-1		0	ō	ľ	300	0	0		300	╞	ò		0	ò		300	300	3,217	115	2.6	91
Mt-E		0	0		100	0	ö		100		0		0	0	0	100	100	6,104	140	4.3	98
Mt-		0	0		210	120	0		60		0		0	0	0	210	6	4,889	154	2.6	96
Mt	0	0	0		600	0	0		000				8	ō	8	069	069	3,184	53	3.8	28
MI-	- 0				001	50			200	·	5					80	B	5,53U	80		86
Mt-1	3	0			200		516		200		00			ō		200	200	3,876	23	5.1	95
Mt	4 Forestry	12	24,000		0	2,700	0		-2,700		0		0	0	0	24,000	21,300	5,517	117	4.6	100
Ntt-	5	0	0		0	640	00		640		00		00	00	00	0	-640	5,152	145	00 00	100
Mt- 1		20	0000		950	85			865				800		006	1 850	1 765	3,443	69	2.9	182
Mt-1	8	0	0		200	4 090	0		-3,890		0		0	0	0	200	-3,890	13,006	221	3.9	98
¥	9 Watchman at the prisor	12	12,000		1,200	4,700	0		3 500		0		0	0	0	13,200	8,500	9,125	244	3.6	88
Mt	0 House boy	12	12,0001		200	2,800:	240	-	-2.840		0	T	0	00	0	12,200	9,160	8,770 5 004	122	4.0	88
Mt-2	2 Gerrial work at the tores	0	00047		1.200		50		1.200	.	0		0	0		1,200	1.200	1.330	8 5	2.3	53
Mt-	33	0	0		200	0	0		200		0		0	0	0	200	200	1,117	38	2.6	85
Mt	4	5	0		0.00	0	ö		000		0		00	00	0	0	0	3 111	338	0.8	100
MIL-	0,4	50			200	60	00		600 350		50	T	00	00	oc	200.	-350	7 476	318	27	26
Mt-2	7 Watchman	12	12.000		0	0	0		0		0		0	0		12.000	12.000	1,559	88	2.6	100
Mt	8	0	0		0	1,200	0		-1.200		0		0	0	0	io I	-1.200	2 717	87	3.0	100
Mt	6	0	0		0.0	400	ö		400		ö		00	0	00	000 10	200 FC	1 800	225	0.8	907
	SU Gemal work at the fores	7	24,000		0	240	o ö		10				9 6	s	n cu	24,000	24,000		1001	2.3	200
Mtsetse Mte	1	þ	0		107		0				0	ō	ßo			0		892 892	31	2.6	100
Mte	2	0	0		0	2,8001		+-	-2,800	0	0	0	ò	0	0	0	-2,800	7,621	167	3.6	100
Mte	ę	0	0		0	0	0		0	0	0	0	0	0	0	0	0	2,500	139	1.8	100
Mte	4				1,580	3,400	0		-1.820		0	5	ö			1,580	-1,820	16,410	237	5.7	91
INTE	-0 6 Brow hoor	- - -	12 000			1.300	5	-	-1,300		s			5	0001	1000	0.350	0004 8 001	071	0 0	36
Mte	-7 Head sawer	12	24,000		100	000	ō	T	1001	0	0	6		ō		24,100	24,100	3,184	217	43	67
Mte	-8 Brew beer	1	3,500		300	3,170	0		-2.870	0	0	0	5,250	0	5,250	9,050	5,880	19,839	438	4.0	66
Mte	6-		0		175	0	0		175	0	0	0	0	0	0	175	175	4,274	162	2.6	80
NICE	-10 11 Brow boor		2 500		1 800	1 300	200	-	-1.500	56			5		5 c	1 200	-1,568	12,430	19	0 9	88
Mte	-12	0	00017		0	3,190	0		-3.190	ö	0		1.500	0	1,500	1,500	-1,690	22,384	394	5.0	100
Mte	-13	0	0		0	486	0		-486	ö	0	0	0	0	0	0	-486	10,921	303	3.3	100
Mte	-14		0		0	1 746	0		-1.746	ö	0		0	0	0	0	1.746	20,000	465	43	00
Mte	-10		SC		140	1 370	56		1006 1-		00		200	56		170	-1 200	5 752	111	0.0	56
Mte	-17	0	0		ö	1 540	0		-1.540	0	0	0	20	0	20	20	-1.520	5,884	172	2.9	100
Mte	-18	0	0		0	o	0		0	o	0	0	0	0	0	ō	0	1,380	23	2.2	100
Mte	-19		0		0	0	0		0	0	0	0	0	0	0	0	0	2 468	64	3.3	100
Mte	-20 Watchman Forest Offic	e 12	37,680		00	4 300 6 Een	000		-4.300 6 7eV	òċ	00	00	13 150	00	12 150	37,680	33,380	7,684	1/9	9.5 9.0	001
Mte	-22 Watchman	12	31.200		0	4.612	1001		-4.712	ġ	0	0	1.260	0	1,260	32,460	27.748	20,000	200	4.0	100
Mte	-23 Brew beer	12	12,830		0	807	645		-1,452	ō	0	0	0	0	0	12,830	11,378	1 000	19	5.2	100
Mte	-24 Brew beer	5	4,000	-	0	130	0		-130	0	0	0	8	0	80	4 080	3,950	4 550	16	5.0	100
Mte	-25		00		150	14,150	0	-+-	-14 150		00	ōc	15,600	00	15,600	15,600	1,450	35,000	500	0./	000
Mte	-27 Brew beer	12	11.600		30	14,200	5	+	-14.200	0	ō		11.300	0	11 300	22.900	8.700	35,000	200	0.7	100
Mte	-28	0	0		0	0	0		0	0	0	0	4,300	ö	4 300	4,300	4,300	7,236	227	2.2	100
Mte	-29	0	0 00		3,170	3,150	ö		20	0	0	00	0	0	0 000	3,170	20	18,315	255	5.1	92
Ave	-JU Brew boot, general labor at sawm age	3	5.519		265	2,656	38		-1,400	0		0	1.947	0	1.947	7.731	5,037	11.305	225	4.0	86

(MK/Year/HH)
Estimate
Income
Household
ACHMENT-1.4
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						Ū-	rop income			Perenni	ial Crop Inc	come		ivestock		Total	ncome	Self	Maize N	o of Family	% of
Site Co	de de			Land Rent	Gross Income	Farm	Hired [Depriciatio n of tools	Net	Gross Income	Cash Inputs	Net Income	Gross Income	Cash Inputs	Net Income	Gross	Net	Consume Value(MK)	Self-	Consumer + Converted	home tonsumed
	qor	Earning month	Θ	0	0	. 🕀	0	6)=3-(4) •3+6)	(C)	. 0	0-0 8=0	9	9	®=0)-©	+©+()+©+	+@+@+@	9	Kg/capit	women to nale adult)	*
Tikolore Tk-1	1 Farming	Ŧ	0	1	0	1,275	0		-1 275	960	0	960	0	0	0	960	-315	13,957	694	1.8	100
ž	2 Farming		0		0	0	0		0	0	0	0	750	0	750	750	750	2,911	83	1.8	100
Ľ.	3 Farming	2	0		8,250	3,290	200		4 460	-	00		0		0	8,250	4 460	6,942	990	3.5	99
	A Farming		026		180	150			300) C	o c			þ) C	1110	960	700 0	338	1.0	96
TK-C	5 Farming	-	0	-	600	4,802	Ö		-4,202	0	0	0	0	ō	0	600	-4,202	7,994	909	0.8	93
TK		0	0			150	ö		-150	0		0	0	ö		0	031	4,638	-	00	90
	B Farming		0		0	20	0		3	0	0	0	0	0	0	0	3	2,940		00	100
TK.	9 10 Farmino	00	o c		0 4 REO	2 335	50		2 515	180	00	182	oc		olc	5 032	2 697	4 801	1/0	10	203
	11 Farming, Labor	22	7.200		12.000	6.680	800	-	4,520	250	0	250		0		19,450	11.970		50	0	30
Ę	12 Business	-	1,500		1 500	3,200	0		-1.700	0	0	0	0	0	0	3,000	-200	6,701	580	10	82
ĚF	13 Business	- ¢	400		00	02 000	0		02-	0	0	00	0		00	400	330	5,816	356	0.8	<u>6</u>
- E	15 Farmino	7			50	890			000'2-						50	0000	0000	24.678	398	610	001
Tk	16 Farming	0	0		2,210	1,150	0		1,060	0		0	800	0	900	3,010	1,860	14,233	200	4.5	87
Tk.	17 Farming	-	0		0	1,500	0		-1.500	500	0	500	0	0	0	500	-1.000	3,325	190	1.0	100
	18 Farming 19 Earming Labor	E V	0 0		1000	1 360		-	-760	150		150	002		000	4 230	- 6 10	1/ 406	145	6.2	9/
	20 Farming, Lauou	+ -	00017		0				0/0	220.		220			0	220	220	1.650	165	20.	100
Tk-:	21 Farming	0	Ó		0	02	0		02-	0	0	0	ō	0	0	0	02-	5 100	280	1.0	100
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11	Business		000		600	550	0		50	0	0		0	0		800	350	1,739	197	1.5	74
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<u>TI-6</u>	3 Farming, Business	2	6,000		0	006	0	 - -	006-	500	0	500	0	0	0	6,500	5,600	1,223	210	1.0	100
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	4 Farming	4			0	2,120	0		-2,120	200	0	200	0	0		200	-1.920	5,683	300	5.5	100
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(MK/Year/HH)
Estimate
Income
Household
ATTACHMENT-1.4

	% of	prodeution: home	%	100	100		100	100	100	69	100	100	67	63	100	100	201	86	81	100	1001	100	100	100	1001	100	100	100	94	53 66	88	82	100	100	64	96	72	200	64	91	65	60	00 5 7	52	64	100	61	22	508	202	88	64	65	3
	o. of Family	Consumer (Converted	children and women to male adult)	6.9	1.2	4.4	1.4	3.0	6	0.7	404	1.8	3.5	5.3	3.5	8000	3.8	2.4	5.3	5.0 5.0	5.2	6.6	1.9	1.2	- 1	5.8	4.2	6.8	3.6	3.7	10	4.3	0.0	0 P	7.7	2.6	2.2	2.5	3.0	3.9	5.0	3.0	07	26	22	1.0	2.2	5.2	0	4 6	000	2.2	¢	0
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Ø	o-4 Carpentry	-	250		3,800	0	ö		3,800	200	0	200	0	0	0	4,250	4,250	2,250	177	8.0	37
0	o-5 Beer brewery	-	3 000		0	0	150		-150	110	0	110	0	0	0	3,110	2,960	2,069	150	0.0	<u>6</u>
olc	0-6 Mowing grass, farm labo	or 2	1400		1,500	200	90		1,140	82		85	0.00	00	000	2,985	2,625	3,415	100	2.6	69
210	0-/ Pottery	N -	900		11 500		1 600	-	2,600	175		175				4,5UU 13,675	12 075	2,008 R 233	202	36	25
סופ	0-9 Beer brewerv		1.000		3,000		0.0		3.000	ö	0		38,300	0	38,300	42,300	42.300	3.000	3 80	000	20
טוי	o-10 Ox-cat transpotation		1,000		94,250	17 400	6.996		69,854	200	0	200 °	0	0	0	95,450	71.054	22.211	208	7.6	19
טוס	0-11	0	0		0		0	·	0	ö	0	0	0	4	4	0	4	650	205	2.0	100
10	0-12	0	0		0	0	0		0	375:	0	375	0	0	0	375	375	2,530	0	2.6	100
0	0-13	0	0		0	0	0		0	300	0	300	0	0	0	300	300	4 315	467	1.2	100
op	0-14		0		158	0	-		158	1,231.	0	1,231		0	с (1,392	1,392	2,878	26	2.2	32
л¦с	0-15 learoom	•••	1 550	+	1,580				1,580	195	0	195		0		3,325	3,325	0.10	140	v o	
90	0-10		50			5 0	5		010	004	э с		- 0	ם מ י	N C	0110	000 02 200	1 A 1	1901	0 × 4	PD VC
oli G	0-18				8 000		c		8 000) (°.	202	• C	n c	ç C	B 900	B 897	3 290	131	14	59
10	o-19 Bicvcle repair	12	3.610		3 3001				3,300				3.802		3 802	10,712	10.712	13.006	810	75	8
n O	0-20	0	0		1,000		0		1,000	140	0	140	1,003	0	1 003	2,143	2,143	7 800	220	3.7	89
U	0-21	0	0		0	0	0		0	400	0	400	0	0	0	400	400	3,600	150	5.5	100
<u></u>	0-22	0	0		400	20	0		380	0	0	0	0	0	0	400	380	9,680	148	-	8
0 P	0-23	0	0		1 200	1,370	0		-170	8		8	0	0	0	1,280	8	5,400	208	40	82
୦୦	0-24	ö			0	0	0		0	0	•	0	0	0	0	0	0	1,350	184	8. r	100
סונ	0-25 T. Smith	m (2 035	•	0 000	4	00		910	180	0	780	0	00	00	2,815	2,1/5	7 237	281	- 0 0	0 <u>01</u>
<u> </u>				Ť	2,250.] c			0177							5003	3,030	111	365	0 Q Q	26
οlα	0-28		se		12 000	2 900			9 100							12.000	001.6	13,500	3	48	53
טוי	0-29	0	0		0	2 100	0		-2.100	ō	0	0	0	0	0	ö	-2,100	7 611		3.5	100
יוט	0-30	0	0		38,000	4,660	0		33,340	0	0	0	0	0	0	38,000	33,340	6,750		3.7	15
¥.	verage	11	615		8,350	1,084	350		6,952	274	0	274	1,589:	0	1,588	10,828	9,430	5,914	208	3.8 2	41
Katema K	a-1		b		2,700	0	ö		2,700	80	ö	80	Ö	ö	o	2,780	2,780	4 179	109	2.2	01
<u>≺[</u> ;	a-2 mat weev		200		2,100	0	0		2,100	200	0	200	2,100	0	2,100	4,600	4,600	8,056	113	3.2	6/
¥]`	6-03		0		1,500	0	0		1,500		ò	0	0	0	0	1,500	1,500	1,500	R R R	97	20
<u> </u>					0000	5			0,000	020	5	071	200		000	4 (20	4,140	0200	26	7 C	89
<u><[</u> ¥	a-0				2 000				2 000	80	0	60	17 600		17 600	19.660	19.660	1 200	33	3.6	38
. <u> </u> ¥	a-7		0		3,400	20	0		3,380	18,000	0	18,000	1,300	0	1 300	22,700	22,680	6,042	106	5.1	64
<u> × </u>	a-8		0		18,000	ō	0	••••••	18,000	225	0	225	12,000	0	12,000	30,225	30,225	7,200	101	7.1	29
∠	a-9		0		3,000	ò	0		3,000	20	0	2	0	0	0	3,020	3,020	4,500	55	99	60
<u> </u>	a-10	+			000'/	1360	0		5,640	300	00	220	2,100	00	2,100	9,400	7,990	2,000	1001	000	77
2	8-1					5 ē			000				5 è			5 U	2.4	10/200	208	0.0	1001
ι×	a-13		0		0	0	0		0	1.220	ō	1.220	ö	0	0	1.220:	1.220	3,686	64	4.2	100
Ι×	a-14		0		0	1,350	ö		-1,350	0	ö	0	0	0	0	0	-1,350	4,993	173	2.6	100
¥	a-15		0		0	40	0		40	0	0	0	0	0	0	0	9	1,800	45	4.0	100
ΞĽ	a-16	-	ö		0	0	0			0	ö		0	0		0		14,9/9	1201	9.0 0.0	001
ΣĿ	a-17					88	0		Ģ		ö					0	8	5,657	31	8.6	30
<u>-1</u> >	a-10 Bodio connir		000 6					+	p c							000 0		14,230	410	N N	00
	a-19 Rauto repair			1			s c			2002	S	202		o c		2002	9,000	1 250	202	r r	001
: ¥	a-20 a-21		o c		3 000	200	5 C		2 800	20 0	ō	G		òc		3 000	2 800	2 697	250	10	47
Ι×	a-22		0	-	520	06	0		430	0	ö	0	0	0		520	430	3,525	55	3.3	87
<u> </u> ¥	a-23		¢		1,000	io	Ö		1,000	0	o	ö	0	ö	0	1,000	1,000	973	80	1.0	49
¥	a-24		0		3,000	0	ö		3,000	0	0	0	0	0		3,000	3,000	5,993	162	34	67
<u>~</u> >	a-25		5	-+-	0	0 0	50	-+	0 0	50	0	50		00		0	5 Cu	4,609	5 G	000	201
<u>-</u>	a-27				3 000	350	ē		2 650		SC	5C	1 000	5 C	1 000	4 000	3 650	5 264	117	40	64
-1×	a-28				1.800	0	0	-	1.800	0		0	0	ō		1,800	1,800	6.264	127	3.0	78
	a-29		0		2,000	0	0		2,000	1,361	0	1,361	950	0	950	4,311	4,311	10,189	182	3.3	84
≚ ∎	a-30		0		2,500	451	ō		2,4551	ō	0	0	0	0	0	2,5001	2,455	7,15/1	1621	2.6	/4
₹	verage	-	1071		2,161	128	ō		2,0331	766	5	764	1,262	ö	1,2621	4,295	4,165	5,693	1201	3.7]	27

ATTACHMENT-1.4 Household Income Estimate (MK/Year/HH)

						-												-			ľ					
a tiv	Member from 2005	12 No 2004	Rainy Season	4	2004 Dry se	eason	2003 Dry Sea	son	Ĕ	ome Nov	2003 to Oct :	2004(MK)	_	Income	Nov 2003	to Oct 200	d Share ((%)						Pro-	duction	
			ertitizers	1	F ETILIZO	Ko No	Ferlizers	2	Crop	inor I hoor	hock Eruite at	Non-larg	1010	ַיָּדָּ טַ	0 1 1 1 1 1 1 1		Non Part	farm Fire	No d/Charc		of Green	(bean/pota	2003	к. 2003 Г		2004 D
Chikuhasu/Mchiku	⁴ Member	15 15	4 27 188 Member		ar uifann	8	22 HIRDOO	2	up 1004	0	533 FILME EN	7 460	7,643	87		VESICK FR		6 3dic	8. 9 9	40	12	935	80	2 2	- 4	2
	Non-member	45	9 20 100 Non-membe						8008	0	549 9	2 2,932	5,581	36	ò	10	~	53	17	38	8	974	67		Ef	4
	Total	60	13 22 127						167	0	545 7	1 2.31	1 6 097	52	0	6	-	38	23	38	42 1,	464	70		9	4
	2003 Rainy Season	n 30	8 27 397						596	0	64 11	1 7,676	8,447	~	0	Ŧ	-	-6	8	27			-	97 5	2	
Mtanda	Member	12	8 67 90 Member		-				225	0	259 48	8 7,341	9,320	13	0		ъ	62	~	58	6	408	25		3	3
	Non-member	18	5 28 58 Non-membe		-				898	0	344 2	2 13,362	14,626	φ	0	N	-	6	5	72	ß	256	33		è	8
	Total	30 1	13 43 78		-			-	029	0	310 20	8 10,956	12,504	80	-	7	7	8	20	67	0	317	30		4	
	2003 Rainy Seasor.	n 30	11 37 68				-		254	0	93	0 4,78	5,134	ò	0	8	0	93	0	Đ			.,	77	-0	
Mluwanjovu	Member	16	8 50 73 Member	9	80	17	9	4	633 4	625 1,	126 15	6 750	13.296	50	35	8		ΰ		9	12	897	75		90	-
	Non-member	14	7 50 64 Non-membe	sc 14			-	-	285 11	272 3,	739 37	9 3,52!	21,200	1	53	18	7	2	0	0	-	914	50		9	6
	Total	30	15 50 69		-				1,604 7	727 2,	345 26	0 2,048	3 16.985	27	45	14	7	12	-	0	19 3	505	63		15	0
	2003 Rainy Season	n 30	6 20 398		_				496 5,	745 1.	669	7 2,05	10,055	ŝ	57	17	-	20	18	60	_		1	10 10	Ŧ	
Ngon	Member	6	5 56 47 Member	20	14 7	70 29	17	24	1,366	0	177	0 3,100	7,643	57	0	2	0	4	-	1	9	049	100		ž	-
	Non-member	21	7 33 36 Non-membe	r 10				-	1,159 3,	905-	77 10	5 7,002	15,246	27	26	÷	-	46	9	29	12 2	208	57		4	0
	Total	30	12 40 41				_	-	1,221 2,	734	107	4 5,83	12,967	33	21	*	-	45	7	23	21 2,	460	70		50	4
	2003 Rainy Season	n 30	16 53 97	_					703	Ģ	883	0 5,412	6,996	10	0	13	0	77	3	10			3	10 10	3	
Zakumva	Member	80	7 88 34 Member	12	8	57 17	3	3	813 8,	038	271 3	8 2,646	12,806	14	63	2	0	21	5	63	0	0	0		55	2
	Non-member	22	14 64 35 Non-membe	er 18		,	8	80	.636 6,	855 1,	038	0 3,385	12,911	13	53	8	0	26	20	91	0	0	0		3	ŝ
	Total	30	21 70 35			Gre	ant		683 7	170	833 1	0 3,186	12,883	13	56	6	0	25	25	83	0	0	0		4(2
	2003 Rainy Season	n 30	3 10 44		-				820 6,	583	558 8	6 4,87	12,924	φ	51	4	1	38	16	53			e	123 7	6	_
Loyi	Member	30	14 47 107 Member						.717:	17	315 36	8 4,258	6,675	26	0	5	6	64	4	13	13 11	078	43		4	7
i	2003 Rainy Season	n 30	3 10 31 Non-membe				-		158	0	0	7 1,15	1,326	12	0	Þ	-	87	0	0				54 N./		
Tikolore	Member	30	18 60 63 Member	18	с 9	33 35	4	4	365	٥	43	0 3,600	6,005	39	0	,	-	60	6	30	6	336	30		2	2
	2003 Rainy Season	0 30	12 40 62 Non-membe			Grant	30	10	626	0	172 19	8 2,75	4,753	34	o	4	4	83	0	0				35 N.	_	
Tilime	Member	30	19 63 74 Member	30	24 8	30 28	0	0	2,167	-	482 51	9 2,371	6,546	33	¢	23	8	36	16	53	26	643	87		ÿ	3
	2003 Rainy Seasor.	1 30	10 33 60 Non-membe	-		Gra	ant?		860	-0	155 14	3 1,549	2,707	32	0	9	8	57	-0	0	_		-	130 N./	đ	
Msambaumfa	Member	16	2 13 78 Member	29	13 4	15 9	4	19	5,173 1	607	425	5,006	12,270	42	1		Ģ	41	- 3	0	4	226	25		22	4
	Non-member	14	3 21 117 Non-membe	-		-			9,124 1	750	725 6	1,679	12,345	66	4	6	-	14	- 0	-0	5	565	36			0
	Total	30	5 17 101						3,550 1	674	565 6	3,45:	3 12,304	53	4	5		28	0	0	6	384	30			~
	2003 Rainy Seasor	30	14 47 65					-	1,352 3,	968	117 8	1,36	3 16,882	67	24	-	8	80	0	0				792 46	Ŀ	
Katema	Member	20	3 15 7 Member	28	25 8	6 . 6	25	4	3,140	0	177 20	13 751	3 4.278	1 73	Ó	4	5	18	0	10	6	125	45		Ř	0 84
	Non-member	10	1 10 100 Non-membe	3					3,934	0	038 46	1.07	1 8,514	46	0	36	5	13	0	0	0	124	30		4	8 30
	Total	30	4 13 30				-		3,405	10	131 25	11 86:	5,690	60	0	20	S	15	0	0	12	125	40		5	9 66
	2003 Rainy Season	n 30	2 7 50						2,161	0 1.	262 76	6 10	4 296	50	0	29	18	7	0	0	_	_		396 12	3	
Gontha	Member	6	0 0 Member	29	8	10 8	0	0	623 2	844	422 1.97	8 5,13	3 11 000	9	28	4	18	47	0	0	*	99	Ξ		9	6
	Non-member	21	5 24 60 Non-membe	-			30	5	912 8,	948 2,	682 90	3,13	16,582	Q	\$	16	5	19	0	0	2	38	10		9	3
	Totai	30	5 17 60	_		G	ant		825 7	117 2.	004 1,23	10 3,73	14,907	9	48	13	8	25	0	0	6	43	10		99	2
	2003 Rainy Season	п 30	5 17 170			_			861 7	489 1,	589 27	4 61:	5 10,826	80	69	15	С	9	0	0				387 13	2	
Average	Member	195 1	38 45 77 Member	182	101	55 19			3,143	<u> 975</u>	524 25	8 3,10	8,042	39	12	7	4	39	51	26	98	298	50	_	5	6
	Non-member	165	51 31 62 Non-membe	ar 46	0	0	_		2,631 3,	655 1,	240 22	3 4,50	5 12,252	21	30	10	2	37	56	34	65	797	39	_	2í	6
	Total	360 1:	39 39 71						2,908 2	203	852 26	54 3,74	9.972	29	22	60		8	107	30	1	068	45		36 	0
	2003 Rainy Seasor	n 330 5	90 27 America				_		1,808 2	162	597 16	1 2,94	1 7,665	24	28	60	10	38	45	14						

ATTACHMENT-2.1 Questionnaire Survey in November 2004: Summary

ATTACHMENT-2.2 Maize Production from 2003 Rainy Season to 2004 Dry Season

0.1			20	03			20	04	
Site	No.	Rainy S.	Drv S.	Total	Dry S./Total (%)	Rainv S.	Drv S.	Total	Drv S./Total (%)
Katema	K-1	380	100	480	21	630	280	910	31
	K-2	360	120	480	25	540	20	560	4
	K-3	350	120	470	26	540	175	715	24
	K-4	360	160	520	31	500	40	540	7
	K-5	270	100	370	27	540	180	720	25
	K-6	1.350	80	1.430	6	540	40	580	7
	K-7	540	140	680	21	450	50	500	10
	K-8	1.080	200	1.280	16	360	60	420	14
	K-9	600	80	680	12	450	150	600	25
	K-10	180	160	340	47	360	80	440	18
	K-11	80	160	240	67	340	60	400	15
	K-12	360	140	500	28	360	80	440	18
	K-13	540	180	720	25	270	60	330	18
	K-14	540	140	680	21	250	60	310	19
	K-15	450	140	590	24	210	25	235	11
	K-16	420	80	500	16	270	80	350	23
	K-17	240	53	293	18	270	50	320	16
	K-18	180	60	240	25	180	40	220	18
	K-19	150	160	310	52	70	30	100	30
	K-20	90	140	230	61	60	120	180	67
	Average	426	126	552	23	360	84	444	19
Gontha	G-1	525	300	825	36	1,600	-	-	-
	G-2	460	400	860	47	450	-	-	-
	G-3	1,080	50	1,130	4	720	-	-	-
	G-4	720	110	830	13	540	-	-	-
	G-5	250	180	430	42	450	-	-	-
	G-6	580	80	660	12	540	-	-	1
	G-7	360	70	430	16	450	-	-	-
	G-8	600	150	750	20	270	-	-	-
	Average	572	168	739	23	628		-	-
Ngoni	N-1	1,200	75	1,275	6	500	-	-	-
	N-2	900	125	1,025	12	750	-	-	-
	N-3	1,644	46	1,690	3	100	-	-	-
	N-4	900	105	1,005	10	1,400	-	_	_
	N-5	300	38	338	11	350	-		
	N-6	1,350	62	1,412	4	400	-	-	-
	N-7	1,200	263	1,463	18	350	-	-	-
	N-8	0	60	60	100	800	-	-	-
	N-9	600	53	653	8	400	-	-	-
	Average	899	92	991	9	561	-	-	-
Mtuwanjovu	M-1	3,000	40	3,040	1	1,250	-	-	-
	M-2	1,250	35	1,285	3	750	-	-	-
	M-3	250	0	250	0	750	-	-	
	M-4	850	50	900	6	600	-	-	
	M-5	370	200	570	35	400	-	-	-
	M-6	1,100	45	1,145	4	550	-	-	
	M-7	800	85	885	10	500	-	-	-
	M-8	700	0	700	0	550	-	-	-
	IN-9	850	30	880	3	500	-		-
	IM-10	950	25	975	3	500	-	-	-
	IVI-11	500	25	525	5	400	-	-	-
	IVI-12	700	4/	/4/		300		-	-
	IVI-13	1,12/	ÿ	1,127		300		-	-
	IVI-14 M 15	4,/00	150	4,708	U	225	-	-	
	GT-IVI	1,000	130	1,150	13	20	-		-
	Average	1,214	49	1,262	41	506	-	-	-

Data: Baseline Survey in July 2003, Production Survey in Dry Season 2003, and Questionaaire Survey in November 2004 by the Study Team

ATTACHMENT-2.3 Size of Farmlands, Production and Yield 2002-2003 of Selected Verification Sites (Non-Self-Sufficient Farmers)

Π	rtikizer rdry kg)	0.8	15.0 20.0		20.0	20.0 8.0			0.0			0.0	ome		5.0		ame	ome	3	23.0	2.5	
	-28 2 28 2 29 20	8	- 14 M	,	80	0000		00	88		20	8	8 0000		0000	0	300 s	ة. 0000	2	00	129	
	(Mico (Mico	2			4	2,5		1,8			1	©	4 -		е, Г		3,0				Ļ	
Rainy Season 2003-2004	Others		⊐-150kg SP-little www.vt 5.mod.fakk 3000) and 14.chileerc (MK2.400			CH-MK500/month x 5		LB	00 18-30km (0.2ha)		SB-50kg, F-MK120/month x 4	3-50kg	3-25kg, R SP-550kg (0.015ha) 0.785ha unused		TM, G-150kg 3-150kg (0.2ha)	no cultivation	TB-65kg (0.1ha)	SB-50kg (0.1ha), TB-200kg (0.2ha rented) SP #040		di de		
	2004 minus 2003 (kg)	375	626 500 :		2501	▲ 250 0 125		3.2	▲ 125 (125	▲ 375 8	₹ 200		125	▲ 100	1,300		ŝ	54.45	217	
	kg / ha	625	1.719 1.667 1.042		938	625 1,250		1.042	625 938	3	781	417	313 2,500		698 625	0	2.917	3.333		769	1,005	
	Maiz e (kg)	500	1,375 1,000 8:25	~~~	750	250 750		625	250		625	250	20 52 20 52		300	0	1,750	00. 200		1.000	624	
	r Y Na	8.0	8.0		.8.0	4.0		0.6	4 6		0.8	0.6	0.8	_	0.0	0.8	0.6	00	5	5	10.62	ł
	Fertilize for rain seasor (kg)	50.0	200 200 200 200	2	50.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0	100.0	000	3	00	30,	
	Maize Total (kg)	885	1,200 725	2	925	950 1,025		725	625 750	200	718	808	900 200	ŀ	1 578 950	350	80	220	200	GRO	752	
	Maize bought (kg) and when consumed	400 Sep '03-Apr '04	100 Jan-Mar'04 150 Jan-Apr'04 50 Mar'n4		175 Jan-Mar '04 50 Jan '04	200 Feb-Apr '04 300 Nov '03-Apr '04		250 Jan-Apr '04	150 Jan-Mar '04 250 Nov '03-Anr '04		150 Jan-Mar '04	50 Mar '04	500 Nov 03-Apr 04 150 Mar-July 04		240 Sep-Nov '03 Mar-May '04 250 Feb-May '04	200 June '03-Jan '04	100 Jan-Feb 04	200 Jan-Apr '04	Z5U OCHDEC US FED-Apr U4	230 Feb-lune 04	200	
	Agri. Icome (MK)	000'	5,050 5,050	1.222	300	000	ŀ	0	2,500	2	800	2,850	1,500 8,500		00	0	2,400	0 0		C	2.273	
Dry Season 20	Others	eat and sold green (total:235kg) at MK3,000	sold green at MK6,000 (0.2ha unusad) sold 175kg green at MK3,050 sold 1000-of MK6 and CC and P (0.0420ha)		sold 2 pigs-MK1,000	sold 150kg, CH-MK500/month x 4		100kg from dambo (0.4ha)	making local beer 100ko from damho (0 2ha) and CC		45kg from dambo (0.015ha)	75kg from dambo (0.02ha)	50kg and IP-200kg from dambo (0.03ha) 50kg from dambo (0.01ha), 7-10 trips (0.05ha), R (0.00				CB, TM, O and SP from dambo (0.05ha)			(Drv season 2004: 0.0466ha)	for a page of a page of the pa	
	kg/ha from club's plot	3,425	1,820 3,943	222	5,036	5,198 5,556		2,500	1,452 2,542		3,000	6,667	00		4 333 5 000	3,846	2,083	001	2,500	2 560	2.955	
	Malze (kg) from club's plot	360	350 250	2	250	100 100		125	88	3	23	50	00		163 75	50	50	£	2	126	132	
	Nize of club's of (ha)	1051	.1923 .0634 .0780	8	0496	0481		.0500	0689		0075	0075	0150		0375 0150	0130	.0240	0000	0700	0350	0448	
\vdash	rtilizer or dry tason pl	0.0	000000000000000000000000000000000000000	2	0.0	0.0	-	0.0		, ,	3.0 0.	16.0 0	25.0 0 5.0 0	-	25.0		8.0	0.0	2 0'8	0 0 7	710	
	dgri. XK) s _{i f} st	0	000	~	0	150		0	0 022		0	450	000				0	0 0	5	╞	785	
ny Season 2002-2003	A inc (n		⊃-300kg (exchange 150kg maize) -100kg -150	Run -		-150kg, CH-MK500/month x 5 3,			3-15kg (0 2ha)		200kg	100kg SB-75kg 1.	-100kg. R 5.		450kci (0.2ha) 3 t	Sha unused	s-300kg	-100kg (0.2ha)				
Rai	rtilizer rainy ason kg)	0	20 0.0 0.0 0.0	1 3	0	0 00		0	0 C	,	100 B	¢,	а 00		00	0	ن د	20 20	5	c	, 15	
	ha for se.	56	938 200	1.7.3	325	325 042		325	938		325	042	438 \75		438 563	00	750	750		110	181	
	(kg)	125 1	750 5 500 5 375 6		500 6	500 6 625 1.		250 E	375 5	- - 	500 6	625 1.	350 4 300 3		175 4 625 1	100 5	450 7	350 1.	200	875 5	<u>407 fe</u>	
	er N	0.8	0 - 0 8 0 4		0.8	0.0		0.4	0 C	22	0.8	0.6	0.8 0.8		4 4	0.2	0.6	0.5	0.4	¢ (0.63	
	Site	Ngoni Club	200	Tilime Club	و ب	⊳ 60	Gontha Club	o,	e t	Mtsetse Club	12	13	14 15	Loyi Club	16	6	19	8	21 Othere	6 IB ID	Averade	

Note 2: Volume of fertilizer excludes handouts.

ATTACHMENT-2.4 Size of Farmlands, Production and Yield 2002-2003 of Selected Verification Sites (Self-Sufficient Farmers)

Γ	ertilizer for dry season (kg)	Γ	1001	10.0	25.0	i	T	30.0					100.0	10.0	20.0									Ι		50.0	0.8		some	1.0	2011 6		25.0	26.3
	Agri. icome *		¢	2,900			ľ						0	0	0		ŀ				5,000	000		1000		200	3				-	-		1,650
Rainy Season 2003-2004	Others				G-150kg		-						G-500kg	•							TB-200kg (0.4ha)			2 150km hand hanne 100km 12 1 000km		2-50kg SP-175kg							1 = 1,200kg (1na) G-630kg	
	2004 minus 2003 (kg)		c	, <u>6</u>	0			150					▲ 500 1	▲ 250	1,000		125	-	250			125		1001	2 6	2501	▼ 200		Ī			11.57.6	0	306
	kg/ ha		1 040	6	1,875								1,250	1.563	1,250		417	1,250	1,000	1,250	625	833		1 4 4 6	875	, ay	313						1.468	1.319
	Maiz e (kg)		625	1250	1,500			250					1,000	1,250	2,000		500	500	1.000	750	500	500		1 160	10CC	1 750	1.050					1000	1,190	1,139
	La	L	0.6	2	0.8			0.8					0.8	0.8	1.6	L	12	9.4	10	0.6	0.8	9.0	2	-			0.0		0.4	0.2		ŀ	- 8.0	0.86
	Fertilize for rain; season (kg)		1 50.0	10.01	50.0		0.0	0.0	0.0	0.0	0.0	0.0	100.0	50.0	150.0		0.0	0.0	0.0	0.0	0.0	000	2	0	3 2	150.0	150.0		0.0	0.0	0.0	0.000	250.0	150.0
	Maize Total (kg)		760	00	1,375		L	225					1,750	1,660	1,400		750		1.000			475		1706	SUD S	105	1.440						1,540	1,176
	Maize bought (kg) and when consumed		0	. 0	0		0	0	0	0	0	0	0	0	0		0	0	0	0	0	00	.	c	5 C		, a	-		a d				0
	Agri. rcome (MK)		870	9,500	3,000			909	0	o	250	200	4,100	1,900	3,000		400	200	3,000	0	0	80,00	7	0.600		480	750		0	00	2	020	000 \$	2,000
Dry Season 2003	Others		CC and R (0 1ha)	sold 100kg green at MK5,000, CC-MK3,500	sold green at MK3,000 + 75kg for food			ML					CC and R-Mk1,000, TM-MK3,100		250kg from dambo (0.1ha)		250kg from dambo (0.2ha)	150kg from dambo (0.4ha)	from dambo (0.6ha), banana	625kg from dambo (0.6ha)	(400kg from dambo (0.2ha)	ADDie tesse damete in Shot		(1)6br from dombs /0 2876br) 10 660br /0 7bs) 50 (0 2bs)	very little from dambs (0.04ba).	37 fike from damho /0 05ha1 B.2ko 10.45ko	190kg from dambo (0.1ha), IP-115kg (0.015ha)					04004 from downed (0.464)	отока пот сапто (0.4ма) 350kg from dambo (0.07ha), sold 250kg of marze	
	kg/ha from club's plot		2 735	2,500			6.944	2,232	5,208	2,376			5,952	3,892	2,778		2,500	1,667	4,748	2,000	3,000	2,000	2.21	c cc7	5	2 000	201		2,400	6.667	2000			2,860
	Maize (kg) from club's plot		125	250			125	125	125	63	• •••		250	150	150		125	5	250	100	150	100	1	001	3 0	15	2		120	<u>6</u>	3			129
	ize of klub's ot (ha)		0457	<u>8</u>	1500		0180	0560	0240	0263	0222	0198	0420	0385	0540		0500	0090	0527	0500	0500	0500		0150	0075	0075	}		0200	0150	nc in			0453
┢	rtilizer S r dry ason Xg) Pi	┢	10.0	10.0	50.0 0.		ō	0.0	0	ö	Ó	0.0	50.0 0.	10.0 0.	15.0 0.	-	0.0	0.0	0.0	0.0	0.0	0.0	2	0.00		45	50	-	Ö	ome 0.	-	0.00	0.0	13.1 0.
	Agri. Fe come fo MK) si		-0	500	400		\vdash	0				0	000	.500	400		0	0	0	0	0	0 0	,	007	3	200			<u> </u>		-	1 000	,250	433
ainy Season 2002-2003	Others in		3-50ka	3-200kg	old 200kg of marze, G-400kg								N	3-750kg 3	3-400kg									0.300kg \$0.200kg B 200kg G 800kg 16		3P-60kg (0.03ha)							told 750kg of maize	9
R	ertilizer ir rainy eason (kg)		50.01	0.0	100.0		Γ	0.0					50.0	50.0	50.0		5.0					0.0	1	ſ	50.0	50.0	25.0		1		1	10.03	20.0	73.6
	kg/ ba ser		542	.250	875 1		┞	0					.875	.875	625		313		750			250	1	76.0	333	250 1	563		╞		1	25	488 2	.020
	Aaize (kg)	ĺ	625 1	750	500 1		F	<u>1</u> 0		• •			500 1	,500 1	000		375		750			375 1	1	000	800 1	000	250 1				1	1 UBU	190	937
	ha. A		0.6	0.6	0.8 1		F	0.8					0.8	0.8	1.6 1		1.2		1.0			0.3	1	16.1	9.0	0.8	0.8		⊢			1 8 1	0.8	0.92
	Site	Ngoni Club	-	2	3	Titime Club	4	 av	9	7	8	љ	5	:	12	Gontha Club	13	14	15	16	17	8 6	Mtsetse Club	20	2 2	2	33	Loyi Club	54	5 %	Others	57	28	Average

Note 2: Volume of fertilizer excludes handouts.

ATTACHMENT-2.5 Estimation of Production and Value of Maize for Dry season 2004 in the First Generation Verification Project Sites

Average	(MK/ha)	285,016		100 204	133,204			160 716	017,001				97,568				E0 017	200'911							
G. Income	(MK/ha)	285,016	268,750	190,476	143,573	194,017	184,806	-		132,626	97,374			97,762											
per ha	0	6	12	19	32	31	25			33	36			44											
Grade	2	18	6	22	38	16	22			19	44			31											
Cob by	5	16	6	37	11	17	34			19	16			24											
%) of (7	33	36	22	17	29	14			19	4			0								Team.			
Share(10	25	33	0	2	2	5			11	0			0								Study	naize	w" was	
No. of	Cob per	48,317	41,250	49,451	54,257	49,573	51,185			35,809	49,234			53,004								sites by the	s of green n	e of "very Lo	•
Sample	Area(m2)	18.42	8.00	5.46	11.98	11.70	18.56			7.54	9.14			8.49								ation project	f cob. Price i	gross incom	
Total	Cob	89	33	27	65	58	95			27	45			45								x verific	veight o	es, the g	"Low".
(cob)	0	8	4	5	21	18	24			ი	16			20								'ey in si	led by v	ome site	grade
e (MK	2	16	e	9	25	6	21			S	20			14							T-2.6.	oot sun	nd grac	ted in s	d to the
y Grad	2	14	с С	10	7	10	32			5	7			11							CHMEN	mple s	e plot a	ot count	unit viel
Cob b	7	29	12	9	11	17	13			2	2			0							ATTAC	om a sa	a sampl	was no	rate of t
No. of	10	22	11	0	1	4	5			m	0			0							onds to	lated fro	ited in a	r of cob	to the
Ave.	(t/ha)	6,027			4,320		- - -	2 205		<u> </u>	 	<u> </u>	2,619	<u> </u>	<u> </u>		1 100	1000	I		lo. corresp	was estim	o was cour	the numbe	l according
Yield	(t/ha)	6,027	4,763	4,478	4,466	4,404	4,345	3,729	3,401	2,944	2,849	2,903	2,604	2,401	2,338	1,875	1,792	1,365	1,294		Sample N	Unit Yield	No. of col	Because	estimatec
07.05	Clade	Very High			Infill					•			Low		•						s No.:			"Very Low":	
Sample	Ň	7	6	ω	£	2	9	12	16	1	4	13	18	ę	14	17	11	15	10	Note:	1) Samplé	2) Yield:	3) Cob:	4) Value of	

	ĺ														(1/2)
Site	No.	Spot No.	Date of Sampling	Date	C. Area Measured	Location	Variety	Inputs	Wet Season Crop	Sampling Size	Na. of green	Weight	Estimated Yield(sampl	Estimated Yield(plot)	Planting Point
					ha					_m		kg	kg/ha	kg/ha	
_	-	-	Nov 17	1-4140	0.02	Mid-stream, flat, by the canal	SC627	CAN3kg NPK3Kg	Maize	$2.6 \text{ m} \times 1.5 \text{ m} = 3.90$	14	1.150	2,949	2 944	9 spots
Attended of the	-	2		- -	30.2	Mid-stream flat, lowest edge		Rept III (Room o	24121	2.6 m × 1.4 m = 3.64	13	1.070	2,940		13 spots
NICAMBUIDAD		e	Nov 17	10- <u>A</u> un	0.06	downstream, flat, mid point	SCR27	CAN10kg NPK10Kg	,	3.7 m × 1.8 m = 6.66	31	2.100	3,153	4 404	10 spots*3stem
	1	4		Bn(-2-	20.0	downstream. flat, lower point	17000	Biote in Brother		2.8 m × 1.8 m = 5.04	28	2.850	5,655		8 spots*3stem
	~	5	Nov 11		0.022	Upstream (by the canal, flat)	Macika (SC 18			3.4 m × 1.3 m = 4.42	25	1.275	2,885	2 401	
Naconi	>	ç			442.5	Upstream (the lowest part, flat)				$3.7 \text{ m} \times 1.1 \text{ m} = 4.07$	20	0.780	1,916		
	4	7	Nov 26	11-410	0.03	Midstream flat (mid of plot)	Masika (2nd vear)	Urea 8kg, 23:21:0 8kg,	Pumpkin	$4.2 \text{ m} \times 1.0 \text{ m} = 4.20$	27	1.245	2,964	2 849	24 spots
	+	ø	22.00		2	Midstream (lower edge of plot)		Manure	leaves	3.8 m × 1.3 m = 4.94	21	1.350	2,733	2 2 2 4	16 spots
		ത			-	Mid stream Gentle slope By the canal				3.70 m × 1.30 m = 4.81	24	2.025	4,210		
	ъ	1 0	Nov.5		0.05	Mid stream Gentle stope mid point of the plot	Masika (2nd year)	CAN50kg, NPK50Kg	1	2.90 m × 1.16 m = 3.36	19	1.345	4,003	4,466	
Tikolore		11				Mid stream Gentle slope edge of the plot				3.23 m × 1.18 m = 3.81	23	1.975	5,184		
		12	.			Downstream, steep, by the canal	-	CAN 45kg		4.8 m × 1.3 m = 6.24	33	2.780	4,455		
	G	13	Dec.1	20-Jul	0.03	Downstream, steep, mid of plot	Masika (1st year)	23:21:0 45kg	Tomato	$4.8 \text{ m} \times 1.4 \text{ m} = 6.72$	32	2.732	4,065	4,345	
		14				Downstream, steep, lower edge		Manure		4.0 m × 1.4 m ≂ 5.6	30	2.529	4,516		-
		15				Upstream (by the canal, steep)			I	$4.1 \text{ m} \times 1.5 \text{ m} = 6.15$	29	3.820	6,211		24 s. Sasakawa
	2	16	Nov.19	Jul. 18	0.04	Upstream (mid of canal, steep)	Masika (3rd year)	Urea: 10kg, NPK: 20kg	1	$4.2 \text{ m} \times 1.6 \text{ m} = 6.72$	32	2.945	4,382	6,027	24 s. Sasakawa
Tilime		17				Upstream (lowest edge, steep)				$3.7 \text{ m} \times 1.5 \text{ m} = 5.55$	31	4.155	7,486		22 s. Sasakawa
	8	18	Nov.19	Jul.20	0.01	Mid stream (by the canat, steep)	DK8071	Urea: 10kg, NPK: 10kg	ı	4.2 m × 1.3 m = 5.46	28	2.445	4,478	4,478	19 s. Sasakawa
	ი	6	Dec.1	25-Jul	0.05	midstream lower edge	Masika (2nd vear)	23:21:0 15kg, Urea 11kg			33	3 810	4 7A3	4 763	

Survey
Sampling
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Estimatior
ATTACHMENT-2.6

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(2/2)	Remark				Should and 2 only later		Should add 6 robs later				totar croos mastard			t seen hai i hiare	2 seeds ner 1 nere	r access her have	Some places have 2 seeds		Some basins plant 3 lines	
	Rainy Season		A Dick O	2	Anich	Maize	Maiza		Maize		arie M		Main	Maize	aricM	140170	Maíze		Onions,	Tomato
	Estimated Yield	kg/ha	1 204	+ 	1 702	1,1 34	3 770	5 V I I	2,903		7 32B	00014	190	000'I	101 6		1,875		2 604	
	Weight	б¥	0 676	2		1.000	1 775	2	1.370		1 780	202.1	900 7	6771	010 0	7.9.7	1.380	~~~	0 905	>>>>
	Variety		7M 634		ZM 604	1 7C IM7	7M 521		ZM 521		Seeden 407		7 N 0051		12 מחק		DK 8051		DK 8052	1
	Input per Ha.		88	88	140	175	228	175	88	175	80	133	0	0	154	0	162	0	<u>p</u>	ę
ŗ		kg	5	5	8	10	13	10	5	10	15	25			5		5		2 N	5 N
	Input		Urea	23:21: 0 +4s	Urea	23:21: 0 +4s	Urea	23:21: 0 +4s	Urea	23:21: 0 +4s	Urea	23:21:0+4s	P 18 manure		CAN		CAN		Urea	23:21:0+4s
	Distance Between Plant and Plant		75cm	1357	Jacum	10073	18 18 18	2	20cm	•	73cm v 66 cm		20		DEcm v 44 cm		27cm x 88cm		63cm x15cm	
	Number Of Cobs		۲ ۲	2	q	2	80	27	25		37	õ	ç	07	5	3	30		27	ì
	Number of Plants		14 plante		10 nlante	ci mid o	28 nlants		25 plants		22	3	Q,	5 0	đ	þ f	43		21	
		m2	4 44	F	2 Y B	0.00	4 76	0 	4.72		7.61	-	000	0.00	8 F.S	00.0	7.36		3.47	
	Size	E	I	l	1		n	I	. 11		 	I	1	I			II		U	
	ampling	-	ب 1	2	с с	2	4	5	9.3 9		<i>Е</i> 25	24.2	. 7	4.00	<u>к</u> Л	r b	4.6		2.43	i
	v	ε	>	¢	}	<	×	K	×		>	¢	· >	<		<	×		×	:
			1 42		1 55	3	4	<u>!</u>	1.43		1 45	-	1 06	De'i	1 57	ò	1.6		1.43	! :
	C. Area Estimate	ц Ч	0.057	2	0.057	5	0.057	22.2	0.057		0 188	2 	0 163	5	5500	0000	0.031		ÛN	•
	Ś		5	?	÷	-	;	1	13		14	<u>-</u>	u T	2	ц т	2	17		18	:
	Site					Katema									Mankhamba					

ATTACHMENT-2.6 Estimation of Unit Yield of Maize by Spot Sampling Survey

Note: Some of the aamples were found not mature enough when they were harvested. It might have caused the estimation at lower side.

4. Production Carry Over with Irrigation (based on interviews)

ן Sites
/erificatio
Selected \
Yield 2002-2004 of
and
Production
f Farmlands,
Size of

			Rainy Season 2002-	2003					Dry Season 2003				ŀ			Rainy Season 2003-2004		
	ha Maize (kg)	kg / fo ha s	rtilizer reiny asson feet	Agri. Incom (MK)	Fertilizer for dry season (ke)	Size of club's plot (ha)	Maize (kg) from chub's c	kg/ha from club's plot	Others	Agri. ncome (MK)	Maize bought (kg) and when consumed	Maize Fertil Maize for ra (kg) (kg	izer siny ha	Maize (kg)	kg / minus ha 2003 ha (kg)	Others	Agri. Fertilize Income seasor (MK) (kg)	iry on
Ngoni Club		1																T.J
1. Mr. Shemamasika (Chairman)	0.8 125	156	0.0		0.0	0.1051	360	3,425 eat and so	Nd green (totsl:235kg) at MK3.000	5.000 6.000	400 Sep '03-Apr '04 100 Jen-Mar'04	885 50	0.0	500	625 375 P	150%#	500 18.0	20
2. Mr. Yobu Chinthuta 3. Mr. Kangiono	1.0 500	500	0.0 G-100kg textmente		6.9	0.0634	250	3,943 sold 75kg	stimutoo vurta motoo	4.050	0	150	0.0	00,	1.667 500 SP-	-little	20.0	00
-4. Mr. Masalimo Kari 5. Mr. Yamakani	0.6 625 1 0.6 375	1,042 625	50.0 B-50kg 50.0 B-15kg		10.0 10.0	0.0457	125	2.735 CC #hd R1 1.603 sold 100kg	(U.Iha) g at MK6,800, OC and R (0.0430ha)	6/0	0 50 Mar '04	200 20	0.0 0.6	626 1	1.042 250 bou	ught 1 goat (MK1.300) and 14 chikens (MK2.400)	0 31.6	Q
6. Mr. Palikena Two	0.6 750 1	1.250	0.0 G-200kg	20	0.01	0.1000	250	2,500 sold 100kg	g green at MK5.000, CC-MK3.500	8.500	0	1000 100	0.0	1,250	1,042 500 G		2,900 10.0	0.
7. V.H. Kutarkwanthu 8. Mkupa Denke	0.8 1.500 1	978.1	100.0 sold 200kg of meize. C	-400kg 2.400	50.0	0.1500	ne -	4,323 sold green	at more wood at MK3.000 + 75kg for food	3.000	0	1.375 50	0.0	1.600	1.875 0 G-1	150kg	25.0	0
Average	0.75 703	938	43.8	43	3 15.8	0.0962	230	2.392		4,990	81	970 62	2.5 0.78	1.016	1.310 357		680 18.4	4
Tilime Club				-						1 0001		ADE 1 C	00	1 750	han asole.4	1 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 100 / 1	480 201	9
1. Mr. Marko Kathewela (V-chairman) 2. Mr. James Nickiene	0.8 500	625	0.0	-	0.0	0.0496	125	5.036 sold 2 pigs 6.944		000'I	1/5 Jan−MarU4 0	10 CZ6	0.0	ne/	4-1 DC7 075			2
3, Mr. Elias Mwanza	0.8 100	0	0.0		0.0	0.0560	125	2,232 TM		600	0	225 0	B.0 0.0	250	313 150		30.0	0.0
4. Mr. Sixpence Kapondo						0.0240	125	5.208		00	0 4		0.0					
D. Mr. Freckson Macnova 6 Mr. Margaret Kathewela						0.0180	3	1107		1,300	50 Jan 04		0.0					
7. Mr. Maganizo Chizalo				-		0.0222		-		250	0		0.0					
8. Mr. Jalison Marko			-		0.0	0,0198				200	0		0.0	4	201 + 210 C	2 · · · · · · · · · · · · · · · · · · ·	9 EDD - 201	2
9. Mr. Lintoni Kangwanda	0.8 500	625	0.0 G-150kg. CH-MK500.	month x 5 3,15	0.0	0.0481	250 250	5,198 sold 150kg 5,059 CC and B-	g, CH-MK500/month × 4 	5,000 4 100	200 Feb-Apr 04 D	1.750 101	0.0 0.6	000 I	1.250 A 500 G-1		0 1001	20
FU. Mr. John Ubakana	0.6 1,000	6701	1.05	ליחמ		0.0180	001			600	300 Nev '03-Apr '04	1.025 50	0.0	750	1,250 125		0.8	3.0
1. Mr. uzwicskoj Laudani 12. Mr. Gilivamu Chisale	0.8 1.500 1	1.875	50.0 G-750kg	3,50	0.01	0.0385	150	3,892		006.1	0	1,650 51	0.0	1,250	1,563 🔺 250		0 10	0.0
13. Mr. Liversoni, Falivoli	1.6 1.000	625	50.0 G-400kg	2,40	0 15.0	0.0540	150	2,778 250kg fron	n dambo (0.1ha)	3.000	0	1.400 151	0.0 1.6	2.000	1,250 1,000		0 20.	2
Average	0.89 818	923	28.6	1.38	1 10.4	0.0334	159	4.749		1,579	56	1,132 31	0.8 0.83	893	1.078 75		497 29.	5
Gontha Olub													_					T
J. Mc Ezekiya Mnkhoma	0.4 250	625	0'0		0.0	0.0500	125	2,500 100kg from	m dambo (0.4ha)	0	250 Jan-Apr 04	725	0.0	625	1.042 375 TB		200	
2. Ms. Zeresi Aroni	0.4 375	806	0.0		0.0	0.0689	8	1,452 making loc	cal baser	2.500	150 Jan-Mar 04 250 Han 700 Am 704	973		250		1-201-r (0 3ha)	102 006	2
3. Mr. Pondani Chikwawe (VH)	0.6 250	417	0.0 TB-15kg (0.2ha)	5/ .	0.0	0.0590	2	2.342 100kg from 750 CC (0.4kg)	m dambo (0.2ha) and GC A BN (fi 2he)	3 000	200 Nov US-Apr U4	200	00 00	201	dS and		2	}
4. Ms. Solome Mark 5. Ms. Evelesi Bwanausi	1.2 375	313	5.0		0.0	D.0500	125	2,500 250kg from	m dembo (0.2ha)	400	0	750	0.0	500	417 125			
6. Mr. Gaveni Chindozi	_				0 0.0	0.0600	100	1,667 150kg fron	m dambo (0.4ha)	200	0		0.0	500	1,250			
7. Mr. Salomon Chinkhande (Sec.)	1.0 750	750			0.0	0.0527	250	4.748 from damb	bo (0.6ha), banana m damha (0.6ha)	000'0		000'1	0.0	750	1.250 200 8			
8. Mr. Japton Chiunga 9. Mr. Haiton Nazolo					0 0 0 0	0.0500	20	3.000 400kg fror	m dambo (0.2he)	0			0.0	500	625 TB	3-200kg (0.4ha)	5,000	
10. Mr Maseleka Mnkhoma	0.3 375 1	1.250	0.0		0.0	0.0500	100	2,000		200	0	475	0.0	200	833 125		1000	
11. Mr. Marisani Aronî (Chairman)					0 0.0	0.0521	225	4,319, 400kg fror	m dambo (0.6ha)	0 19	0 55	102	0.0 1 0.7	507	ROI 20R		2.180 20.	
Average	0.65 396	609	1.0	¢	20	0.0539	33	7,458		0#0			· · · ·	127	1602 100			
Mtsetse Club	000 1 0 1	011	1000 00 000	10 100 0 100 0	000	00160	1001	2 2 2 ADEL - 410		00 500	-	1 795	0.0	1 350	844 150 8-	-150kg. hard beans-100kg. IP-1.000kg	4,900	Τ
1. Mr. Bonihasi Frackioni (V.H. Phulusa1)	1.6 1.200	19()	1P-300kg. SP-200kg.	B-ZUOKS, G-BUUKK 10.40	707 207		3 8	000 G 161- 6-00	TI Gerrian (u.r.d. ane), m-bookg (u.r.d. oo (u.r.d.)	000507	150 Jan-May 704	718	2000	625	781 125 SB	3-50kg. F-MK120/month x 4	0770	
Z. Ms. Lusiya Ziwanda		620	150.0 8-200Kg		0.0	0.0075	3 =	o, woo wang mana 0 iverv little	from dambo (0.04ka)	0		800	0.0	1,125	1,875 325		0	
lat Mr. Marko Steven	0.6 625	1.042	B-100ke, SB-75kg	1.45	0 16,0	0.0075	20	6,667 75kg from	dambo (0.02he)	2,850	50 Mar '04	800	0.0	3 250	417 A 375 B-	-50kg	600 0.	0.0
5. Ms. Catherine Mbewe	0.8 1.000	1,250	150.0 SP-60kg (0.03ha)	1.20	0 4.5	0.0075	15	2.000 37.5kg fro	om dambo (0.05ha). B-2kg. JP-45kg	480	0	1,053 15	i0.0	3 1,250	1,563 250 8-	-50kg, SP-125kg	700 50.	0.0
6. Mr. Sikweye Peter	0.8 350	438	D.0 B-100kg, P	5,00	10 25.0	0.0150	0	0 SOkg and	IP-200kg from dsmbo (0.03ha)	1,500	500 Nov '03-Apr '04	006	0.0	3 250	313 A 100 B-	-25kg. R	4,000	ç
7. Mr. Nova Galandison (V.H. Phulusa)	0.8 1.250	1,563	125.0		5.0			190kg fra	m dambo (0.1ha). IP-115kg (0.015ha)	750	0	1.440 15		00011	1,313 A 200		1 50.0 50.00	2
8. Mr. & Ms. Samuel Benson	0.8 300 0.6 757	375 abe	0.0 F	4 00	8 0 B	0.0150	0 6	2 50kg from	1 dambo (0.01ha), 1-10 trips (0.05ha), K (0.003ha)	4 173	150 Mar-July 04	1 300 F 12	3.1 0.7	008 g	1,032 47	האספטים שייים איז מיומפים איז	1.924 19.	6.6
Lovi Club		200																
t. Mr. Chitanhe Barida (Secretary)	0.4 175	438	0.0			0.0375	163	4.333		0	240 Sep-Nov '03 Mar-May '04	4 578 ara	0.0	300	698 125 TW	M. G-150kg	1,300	5
2. Ms. Adinesi Saizi (Chairlady)	0.4 625	1.563	0.0 (G-450kg (0.2ha)	3,00	27	00100	e 6	5.000			238 Feb-May 94 200 .huma-101-lan 104	350	00		0 100 100 100	s cultivation	. 0	
3. Mr. & Ms. Wilson Mwale 4. Ma. Gavelati Mtaman'anmha	0.2	2000	n'n norsea			0.0500	120	2.400		0	0	3	0.0		0 V		soth	щe
5. Mr. Zino Maleko					some	0.0150	ğ	6.667		¢	Û		0.0	~			-	0.1
6. VH Mtalanje						0.0750	001	1.333		0	0	07	0.0		T COST LINE	601-101-1	3 000 50m	ë ë
7. Mr. Metran Zamba	0.5 450	750	5.0 CS~300kg 50.0 G-100ke (0.2ha)		1.8	0.0240	20	Z.083 CB, TM, 0	D and SP from dambo (U.Ubha)	2,4UU	100 Jan-Apr '04 200 Jan-Apr '04	550 10	0.0	1,000	3.333 650 SE	в-50kg {0,1ha}, ТВ-200kg (0.2ha rented)	mos 006	he
9. Mr. Damba Madziada	0.4 200	500	0.0		0 8.0	0.0200	50	2,500		0	250 Oct-Dec '03 Fab-Apr '04	500	0.0	300	750 100 SF	P-50kg	0	00
Average	0.37 317	864	9.2	75	50 4.6	0.0312	88	2,836		267	138	588 2	22.2 0.4	1 600	1.360 283		867 2	2
Others							ľ			0.010		11 000			o soi la 6001 te	0-1 200km (1ka)		T
 Mr. James Nyongani (Non member) Mak Zava (Tikolore Club) 	0.8 1.080	675 1.488	50.0 TB-1.000kg 250.0 sold 750kg of maize	10.25	1001 001 1001 000			SIUkg fro 350kg fro	im dambo (0.4ha). im dambo (0.07ha), sold 250kg of maize	4,000	→ 43	1.540 25		8 1.190	1.488 0 0 G-	-630kg (11/2/	25	5.0
3. Titani Windiman (Katema Club)	1.2 625	521	0.0		4.(0.0350	125	: 3.569 (Dry seas	son 2004: 0.0466ha)	0	230 Feb-June '04	980	0.0	3 1.000	769 276 SF	di d	200 23	3.0
Note 1. 8=beans. 6N≃banana, CB≂cabbage	CC=Chinese c	cabbage.	CH=charcoal, CS=cassava.	F≂firewood, G=groundnu	tta. JP=Jris	1 potato. F	- pumpkin	ileaves, R≒rape, S	SB=soy beans, SC=sugarcane, SP=sweet potat	to, TB=tol	oacco. TM≓tomato							
Note 2: Volume of fertilizer excludes hands	uts.																	

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Production
Farmlands,
of
Size

		T	Rainy Season 2002~2003		_			Dry Season 2003				_			Rainy Season 2003-2004		7
	Maire	Fertilizer		Agri. Fertil	izer Size	of Maize	kg/ha		Agri.	Maize boucht (ke) and when	Fert	ijizer minu		2004		Agri. Ferti	thizer
£	(kg) (kg)	/ ha ror rany (kg)	Others	(MK) seas (Mg	ion clut) plot (ta) club's ha) club's	club's plot	Others	income (MK)	consumad	101	ru (a)	Marce (r. p)	kg / ha 2003 (kg)	Others	(MK) (kg	, no si
Ngoni Club					H												
1 Mr. Shemamasika (Chairman)	8 125 14	56 0.0		-	0.10	361	3,425	set and sold green (total:235kg) at MK3,000	5,000	4D0 Sep 03-Apr 04	885 5	0.0	8 500	625 375 P		200	18.0
2 Mr. Yobu Ohnthuzer	8 750 9.	38 50.0 5	SP-300kg (exchange 150kg maize)	0.	0.0 0.19	23 35	0 1.820	sold green at MK6,000 (0.2hs unused)	6,000	100 Jan-Mar'04	1,200 10	00:0	8 1.375	1,719 620 0			0.01
A. Mr. Masalimo Kari	6 625 1.0-	42 50.0 E	B+50kg	00	1.0 0.041	121 121	1 2.735	soid Ford Rein ac Innet.com	870		750 5	0.0	5 625	1.042		0	10.0
5. Mr. Yamakani 0.	6 375 62	25 50.0 B	B-15kg	0	7.0 0.07	30 121	5 1,603	fold 100kg at MK6,800, CC and R (0.0430ha)	10,500	50 Mar '04	550 5	50.0	6 625	1.042 250 bo	ought 1 goat (MK1.300) and 14 chikens (MK2,400)	0	31.0
6. Mr. Palikena Two	6 750 1.2	50 0.0 C	G200kg	200 10	7.0 0.10.	70 25	3 2.500	vold 100kg green at MK5,000. CC-MK3.500	8.500		1.000 10	10.0	2 1,250	1,042 500 G		2.900 10	10.0
7. V.H. Kufarkwanthu	8 1,000 1.2 3 1 EAD 1 8'	50 100.0	add 2000a af maine - 0-4000a	600 2 400	0.0 0.03	47 15	9 4.323	sold green at MK2.000	2,000	100	1,250 5	50.0	8 1.250	1.563 250	-1504	0	75.0
C. Mindua Dorine Tilima Oluh	0.000.00	1 0.001 1 0.0		- 1 AUE					00010	· · · · · · · · · · · · · · · · · · ·	<	2	000100	A A 610-1		4	2
	5 CAO CO	261 40			0.0	20 004	1 1 000		000	1 1 1 1 1 1 1 1 1	2 202	0	750	200 2521		i an l	0.00
1. Mr. Marko Natheweta (V−Chairman) U 2 Mr. Jamee Mirkis⇔n	a nne . 9	n:n [cz		2	60'0 0'0	121	0 5.030	NUU, 1 XM-2 pigs	000-1	D Jan-Mar 04	CZ6		100/ 8	-1 nez 856	-MK12U/month x 4	17 1084	70.0
A Mr Flias Muanza	8 100	100 10			10 0.05	12	5 2 2 3 2	N	600		225	00	s 250	313 150			30.0
4. Mr. Sixpende Kapondo		;		1	0.02	12:	5 5.208		0		2	0.0					
5. Mr. Freckson Machova					0.02	3	3 2.376		0			0.0					
Ms. Margaret Kathewela					0.01.	ĝ			1.300	50 Jan 04	_	0.0				-	
7. Mr. Maganizo Chizalo					0.02	22			250	0	_	0.0					
8. Mr. Jalison Marko	1			0	0.0	88			200	0		0.0					
9. Mr. Lintoni Kangwanda	8 500 6.	25 0.0 0	G=150kg, GH=MK500/month x 5	3.150	0.0 0.04	31 25	0 5,198	sald 150kg. CH-MK500/month x 4	5.000	200 Feb-Apr 04	950	0.0	4 250	625 A 250 C	H-WK600/month x 5	2.500 21	20.0
	8.1 UUC.1 8	0.06			0.0	67 C	268'0 1	CC and R-MKI, UBU, IM-MK3, IOU	4,100			0 0 0 0			BANC	2 4	
11. Mer. UZwitsami Laudami	6 522 1.0	42 50.0			10.0 0.8		0 5.556		009'1	300 Nov 03-Apr '04	1.025	50.0	9 /20	1.250 125		 	
12 Mr. Galyamu Ghisale	8 1.500 1.8	75 50.0 0	G-750kg	3,500 10	0.0	35 15	0 3.892		1.900		1.650	20.0	8 1.250	1.583 A 250			0.0
	a 1'000 1 0'	1 20.0	1	2300.0	cn-n n-0		7777	couke from gampo (VUIna/	3,000		1 005		0 2,000	100123-0071		17	
	1 050 1	100			100		0 100			010		-	100	A DAM PROPERTY AND		- ono	Ţ
1. Mr. Ezeknya Minikatoma (Sister Signation) 0 2 Mr. Zammi Ammi	4 250 6	25 0.0			0.0 0.05	12	5 2.500	100kg from dambo (0.4ha)	0	250 Jan-Apr 04	725	0.0	6 625	1.042		1,800	
2 Mr. Dandard Chikanan (VH)	2 010 41	1 0 0	TD-150- (0.35c)	035			9 543	Ditter from some (0 She) and CO	-	DED Num Day	750				D-201- (9.3h-2)		0.02
4 Mis Science Mark	F 007			2		200	750	Down in the former (0.2 ma) and CO	000 6		2		2011			200	2
5. Ms. Evelesi Bwanausi	2 375 31	13 5.0		, . 	2.0 0.061		1 2.500	350ks from dambo (0.2ha)	400	0	750	0.0	2 500	417 125			
6. Mr. Gaverni Chindozi				- 0	1.0 0.06	1) 1.667	150kg from dambe (0.4ha)	200			0.0	4 500	1.250 G			
7. Mr. Solomon Chinkhande (Sec.)	0 750 73	50		0	3.0 0.05	27 251	0 4.748	rrom dambo (0.6ha), banana	3.000	0	1,000	0.0 1.	0 1,000	1.000 250 B			
 Mr. Japitoni Chiunga 				0	3,0 0,05.	00 101	0007 0	325kg from dembo (0.6ha)	0	0	_	0.0	6 750	1.250			
9, Mr. Halton Nazofo				0	3.0 0.05	00 15i	3,000	400kg from dambo (0.2ha)	0	0		0.0	8 500	625 T	B-200kg (0.4ha)	5,000	
10. Mr Maseleka Mnkhoma	3 375 1.2	50 D.0		0.0	0.0 0.05	00	0 2,000		200		475	0.0	6 200	533 125		000 0	
11. Mr. Marisani Aroni (Charman)				010	<u>enn i nn</u>	27 12	9 4,319	400kg from dambo (0.6ha)		0	-				H-Found (U-Ame)	1 100.0	ŀ
Mtsetse Club	36 000 1 3			10 ADD 1 20	100	102	1 1 2 2 2 1				1 101	0	\$ 1.750	0 11 15U D	La Solution Production (0-1 000)	4 ano	
		1 0001 30	P-JUUKE. SP-ZUUKE, B-ZUUKE, G-BUUKE			20	10000	4 20kg from dambe (u.zd/onau, ir-boukg (u.znau, SG (u.znau)	000		C7/1	500	1 202 4	10 10 10 10 10 10 10 10 10 10 10 10 10 1	The second metric in the second s	025.5	
Z. MIS. LUSIYA ZIWANDA		1 0.001 52	E-ZUDKE		3.P 0.UL	2:	, 1000 L	Hokg from damoo (U.U.Data)		Lou Jan-Mar ut	110		0 023	101 102	+ x usershi /nZi Nimi - 1 "Bunc - On	•	
	600 1.3	10.061 661				<u>د</u> :		very little from dembe (U/04ha)	0 010 0		202		0 1.120	0.35	- 100		0
E Mr Cottorios Mount	1 000 1 8	150.0			15 0.00	0 ±	2000	/ JAK From Hantley (LUZINA) 27 Skon from Hombo (1005ko), B-3kon 30-45kon	480		000		8 1 250	1561 250 8-	-50ke SD-125ke	200	005
6 Mr Sikweve Peter	8 350 4	38 00 F	B-100ks. R	5 000 2	3.0 0.01		0	50ks and IP-200ks from damba (0.03ha)	200	500 Nov '03-Apr' 04	006	0.0	8 250	313 A 100 B-	-25кв. н	4.000	
7 Mr. Nova Galandison (V.H. Phulusa)	B 1250 15	63 1250			2 D E	;	,	190ks from dambo (0.1ha). IP-115ks (0.015ha)	750	0	1.440	20.0	8 1.050	1.313 A 200		-	8.0
8. Mr. & Ms. Samuel Benson	8 300 3	75 0.0			5.0 0.01	<u>0</u>	0	70kg from dambo (0.01ha), T–10 trips (0.05ha), R (0.003ha)	6,500	150 Mar-Juty 04	500 12	25.0 0.	2 500	2.500 200 SH	P-550kg (0 015ha) 0.785ha unused	1,500 son	ame
Lovi Club																	Π
1. Mr. Chitanhe Banda (Secretary) 0	4 175 4.	3.8 0.0			0.03	75 16.	3 4,333		0	240 Sep-Nov '03 MarrMay '04	578	0.0 0.0	4 300	698 125 Ti	M. G-150kg	1.300	
2. Ms. Adinesi Saizi (Chairtady) 0	4 625 1.5	163 0.0 0	G-450kg (0.2ha)	3.000	2,5 0.01	50 7	5 5,000		0	250 Feb-May 'D4	950	0.0	4 250	625 🔺 375 G	3-150kg (0.2ha)	0	5.0
3 Mr & Ms Wilson Mwate G	2 100 5	00 0.0 (0.6ha unused		0.01	30 5	0 3.846		e	200 June '03-Jan '04	350	0.0	0	0 A 100 m	o cultivation	Ō	
4. Ms. Geveleti Mteman'gombe					0.05	60	0 2,400		0	0		00	4	9			ente
5. Mr. Zino Maleko				los	Te 0.01	0 20	0 6,667		00			0.0	2				<u>.</u>
2. VII Mitalanje	6 450 7:	50 5.0 (CS-300hg	-0	3.0 0.02	10 10	2.083	CB. TM. O and SP from dambe (0.05ha)	2.400	100 Jan-Feb 04	600 10	0.00	6 1,750 1	2,917 T.300 TL	B~65kg (0.1ha)	3.000 sor	xne.
8. Mr. Jaŭosi Mwale	2 350 1.7	50 50.0 (G-100kg (0.2ha)	0	0.0				0	200 Jan-Apr 04	550 11	20.0 D.	3 1.000 1	3,333 650 St	3B-50kg (0.1ha), TB-200kg (0.2ha rented)	900 sor	aLic
9 Mr. Damba Madziada	4 200 51	00 0.0		0	8.0 0.02	00	0 2.500 }		0	250 Oct-Dac '03 Fab-Apr '04	500	0.0	4 300	750 100 St	sP-50kg	0	0.0
Others																	
ii. Mr. James Nyongani (Non member)	6 1.080 6	75 50.0	TB-1.000kg	70,000 100	0.0			810kg from dambo (0.4ha)	2.050		1C 068'1	00.0	6 4.050	2.531 22.970 T	B-1,200kg (1ha)	c	C L
2 Mak Zaya (Hikolore Giub) 14 Titaru Wundimen (Katuma Glub)	A 1.180 1.4	188 ZDU.U F	sold 750kg of maize	002701	0.0 0.03 1.0 0.03	101 102	3 569	350kg fram dambo (U.U.fha), soid 200kg of maize "har nannan 100d- B.0d86ha)	- 1001.4	0 920 Eah-hoa '04	17 080		3 1 000 1	789 0.755 St	1-B3UAU 10	200	0.02
Average 0	R 846 8	55 41.0		1144	10.04 a c	40 12 ¹	3 9 874		2 157	85. Br		10 0 J	5 878	1175 255		1 205 23	204
	- Ohinese cal	Hard OHach	a=0 promosi≣=1 encourse=3€ t	Considerate 10	Tutal ant		v h mu i na v	· · · · · · · · · · · · · · · · · · ·	state TG-	-tohorco TM=formato	- - 	A100	;		r]

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riveue 1: b≐peans, BN=banana, CB=cabbage, CC= Note 2: Volume of fertilizer excludes handouts.

	Rainy Season 2002-2003						Dry Season 2003			╞		Rainy Season 2003-2004		Γ
	ha Maiza ke Ferdinaer ha ke/ ferrainy (ke) ha seen	Agri, income (MK)	Fertilizer for dry season (kg)	Size of (ki club's (ki ptot (he)	Aaiza kg/ O from fro lub's chit olot pto	na Others bs ot	Agri. income (MK)	Maize bought (kg) and when consumed	umba Total Ferr	tilizer rainy ha ason ha	Maize kg (kg) he	2004 2004 2003 Cithers (kg)	Agri, Fertiliz for dr incoma seaso (MK) (kg)	lizer dry g)
Ngoni Club														
1. Mr. Shemamasika (Chairman) 2. Me. Yobu Chinthiza	0.8 125 156 0 0.8 750 938 50 SP-300kg (axchange 150kg	maize) 0	0.0	0.1051	360 3.4 350 1.8.	25 est and sold green (total:235kg) at MK3.0 20 sold green at MK6.000 (0.2ha unused)	00 22000 2000 2000	400 Sep 03-Apr 04 100 Jan-Mar 04	1.200 10	00.0	1,375 1.71	9 [25828] G-150kg	900 18. 15.	5.0
5. Mr. Yamakani	0.6 375 625 50 B-15kg	0	50.0	0.0780	125 1.6	03 sold 100kg at MK6.800, CC and R (0.0430	ha) 10,500	50 Mar '04	550 5	50.0 0 .0	625 1.04	2 250 bought 1 goet (MK1.300) and 14 ch	ens (MK2.400) 0 31.	0.1
Tilime Chub														
1. Mr. Marko Kathewela (V-chairman)	0.8 500 625 0	•	0.0	0.0496	250 5.0	36 sold 2 pigs-WK1,000	1:000	175 Jan-Mar '04	925	50,0 0.1	750 93	B 250 F-MK120/month x 4	480 20.	0.0
6. Ms. Margaret Kathewela				0.0180			1,300	50 Jan '04		0.0				
9. Mr. Linton: Kangwanda	0.8 500 825 0 G-150kg. CH+MK500/mant	1×5 3.150	0.0	0.0481	250 5,1	98 sold 150kg, CH-MK500/month x 4	5,000	200 Feb-Apr 04	950	0.0	250 62	5 🔺 250 CH-MK500/month x 5	2,500 20.	0.0
11. Mr. Dzwitsani Laudani	0.6 625 1.042 50	0	8.0	0.0180	100 5.5	56	1.600	300 Nov '03-Apr '04	1.025	50.0 0.0	1,25	0 125	0 8.	8.0
Gontha Club														
 Mr. Ezekiya Mokhoma 	0.4 250 625 0	0	0.0	0.0500	125 2,5	00 [100kg from dambo (0.4ha)		250 Jan-Apr 04	100 725	0.0	625 1,04	2 1322.2726 TB	1,600	
2. Ms. Zeresi Aroni	0.4 375 939 0	0	0.0	0.0689	100 1.4	52 making local beer	2,500	150 Jan-Mar '04	625	0.0	250 62	5 🔺 125 OC	200	
3. Mr. Pondani Chikwawe (VH)	0.6 250 417 0 TB-15kg (0.2ha)	750	0.0	0.0590	150 2.5	42 100kg from dambo (0.2hs) and CC	0	250 Nov '03~Apr '04	100 750	0.0	1 750 93	8 225500 TB-30kg (0.2ha)	900 20.	0.0
Mtsetse Club										_				m
2 Ms. Lusiya Ziwanda	0.8 500 625 100 8-200kg	0	3.0	0.0075	23 3,0	00 45kg from dambo (0.015ha)	800	150 Jan-Mar '04	45 718	0.0	625 78	1 1 25 SB-50kg. F-MK120/month x 4	1,770	
4. Mr. Marko Steven	0.6 625 1,042 B-100kg. SB-75kg	1,450	16.0	0.0075	50 6.6	67 75kg from dambo (0.02ha)	2,850	50 Mar '04	75 800	0.0	250 41	7 🔺 375 B-50kg	600	0.0
5. Mr. Sikweye Peter	0.8 350 438 0 B-100kg, R	5,000	25.0	0.0150	0	0 50kg and IP-200kg from dambo (0.03ha)	1,500	500 Nev '03-Apr '04	50 900	00	250 31	3 🔺 100 B-25kg. R	4,000	
8. Mr. 8. Ms. Samuel Benson	0.8 300 375 0		5.0	0.0150	0	0 50kg fram damba (0.01ha), T-10 trips (0.0	05ha), R (0.003ha) 6,500	150 Mar-July 04	500 1:	25.0 0.	500 2,50	0 200 SP-550kg (0.015ha) 0.785ha unusi	1.500 som	ue.
Loyi Glub											-			
1. Mr. Chitanhe Banda (Secretary)	0.4 175 438 0			0.0375	163 4.3	33	a	240 Sep-Nov '03 Mar-May '04	578	0.0	300 65	B 125 TM, G-1504g	1,300	
2. Ms. Adinesi Saizi (Chairlady)	0.4 625 1.563 0 G-450kg (0.2ha)	3,000	2.5	0.0150	75 5.0	00		250 Feb-May 04	950	0.0	250 62	5 🔺 375 G-150kg (0.2ha)	ю́	5.0
3. Mr & Ms Wilson Mwale	0.2 100 500 0 0.6ha unused		1	0.0130	50 3.6	46	-	200 June '03-Jan '04	350	0.0	0	P A 100 no cultivation	2	
/. Mr. Matison comba	0.5 450 /50 5 CS-300kg	•	8.0	0.0240	50 2.0	183 CB, TM, O and SP from dambe (0.05ha)	2,400	100 Jan-Feb 04	800	000	1.750 2.91	7 [.1.300] TB-65kg (0.1ha)	1000 E	÷ F
B. Mc. daule st. Mysie (2000) (2000) 9. Mr. Damba Madziada	0.2 350 1.750 50 G-100kg (0.2ha) 0.4 200 500 0		0.0	0.0200	50 2.5	00		200 Jan-Apr 04 250 Oct-Dec 03 Feb-Apr 04	550 =	000	1,000 3,33	3 (((((500) SB-50kg (0.1ha), TB-200kg (0.2ha 0 1 100 SP-50kg	inted) 900 som	9.0
Others														
Titani Windiman (Ketema Club)	1.2 625 521 0		4.0	0.0350	125 3.5	(69 (Dry season 2004: 0.0466ha)	0	230 Feb-June 04	980	0.0	1,000 76	9 100 375 SP. IP	200 23	3.0
Average	0.61 403 660 16	834	7.2	0.0438	126 2,8	176	2,236	202	18 753	29.8 0.6	605 97	3 203	867 2	2.5
Note 1: B=beans. BN=banana. CB=cabbage.	, CC=Chinese cabbage, CH≂charcoal, CS=cassava, F=fi	ewood, G=groundnut	s. IP=Irish	potato. P=	oumpkin lea	aves, R=rape, SB=soy beans, SC=sugarcar	ne. SP=sweet potato. TE	i=tobacce, ⊺M=tomato			-			
Note 2: Volume of fertilizer excludes hands	outs.													

Size of Farmlands, Production and Yield 2002-2004 of Selected Verification Sites (Non-Self-Sufficient Farmers)

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Image: constraint of the	0.0         500         500         0.0           0.1         0.0         500         500         500           0.6         6.25         1.042         500         500           0.6         6.25         1.200         1.422         500           0.6         1.500         1.420         00         00           0.6         1.500         1.420         00         00           0.6         1.500         1.420         00         00           0.6         1.500         1.420         00         00           0.8         1.500         1.420         00         00	0 G-100kg	(MK) season (kg)	plot (ha) pl	from from Others 3's club's rt plot	Agri. Maize bought (kg) and when income (MK)	Total for rain (kg) (kg)	n ha Maize Kg / mu	0 Others	Agri. for dry income season (MK) (kg)
10         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100	bit contact to 500 500 500 00 0.6 525 1042 00 0.6 750 1.230 00 0.8 1.500 1.375 1000 0.8 1.500 1.375 1000 0.8 1100 0 00	0 G-100kg			-					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	0.6 6 25 1042 50 0.6 750 1375 1000 0.6 1500 1875 1000 0.8 1500 1875 1000 0.8 1100 0 00	1 D_601.	0 6.0	0.0634	50 3.943 sold 75kg green at MK4,050	4.050 0	750 50.0	0 0.6 1,000 1,687 [[13]	00, SP-little	20.0
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	0.6 1.500 1.835 1000 0.8 1.500 1.835 1000 0.8 100 0.0		0 10.0	0.0457	25 2.735 CC and R (0.1ha)	870 0	750 50.0	0 0.6 625 1.042	0	0 10.0
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	06 1500 1877 1000	3 G-200kg	500 10.0	0.1000	50 2,500 sold 100kg green at MK5.000. CC-MK3.500	8.500 0	1.000 100.0	0 1.2 1.250 1.042	00 G	2.900 10.0
$ \left[ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 0 0 0 0 0 0 0 0 0	7 [sold 200kg of maize, G-400kg	2,400 50.0	0.1500	sold green at MK3.000 + 75kg for food	3,000 0	1,375 50.0	0 0.8 1,500 1,875	0 G-150kg	25.0
10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10<	0 0 0 0 0 0 0 0									
$ \begin{bmatrix} 1 & 10 & 0 & 0 \\ 1 & 10 & 1 & 10 \\ 1 & 10 & 10$	200 200 200 200 200 200 200 200 200 200			0.0180	25 6.944	0	0.0			
$ \left[ \begin{array}{cccccccccccccccccccccccccccccccccccc$			0.0	0.0560	WJ ZEZZ CZ	e00 0	225 0.0	0 0.8 250 313	20	30,05
$ \left  \begin{array}{cccccccccccccccccccccccccccccccccccc$				0.0240	25 5.208		0.0			
$ \left[ \begin{array}{cccccccccccccccccccccccccccccccccccc$	· · · ·			2020.0	0/ 57/0		0.0			
$ \left[ \begin{array}{c c c c c c c c c c c c c c c c c c c $	-			0.0222		250 0	0.0	0		
$ \begin{bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$			0.0	0.0198		200 0	0.0		-	
Bit 1200         Bit 35         Bit 1200         Bit 1200 <td>0.8 1.500 1.875 50.0</td> <td></td> <td>2.000 50.0</td> <td>0.0420</td> <td>50 5,952 CC and R-Mk1,000. TM-MK3,100</td> <td>4,100 0</td> <td>1,750 100.0</td> <td>0 0.8 1.000 1.250 🔺</td> <td>00 G-500kg</td> <td>0 100.0</td>	0.8 1.500 1.875 50.0		2.000 50.0	0.0420	50 5,952 CC and R-Mk1,000. TM-MK3,100	4,100 0	1,750 100.0	0 0.8 1.000 1.250 🔺	00 G-500kg	0 100.0
$ \left  \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.8 1.500 1.875 50.0	3 G-750kg	3.500 10.0	0.0385	50 3.892	0 0001	1.650 50.0	0 0.8 1.250 1.563 .	50	0 10.0
Observed         11         373         510         12         301         50         11         300         12         500         11         125         11         301         125         11         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126         126	1.6 1.000 625 50.0	3 G-460kg	2.400 15.0	0.0540	50 2.778 250ke from dambe (0.1ha)	3.000	1.400 150.0	0 16 2000 1250 1		0 200
12         319         32         50         11         50         11         50         11         50         11         50         11         50         11         50         11         50         11         50         11         50         11         50         12         50         130         130         120         50         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130         130	ub [									
	1.2 375 313 5.0		0.0	0.0500	25 2.500 250kz from dambo (0.2ha)	400 0	750 0.0	0 12 500 417	25	
(5ec.)         10         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750         750 </td <td></td> <td></td> <td>0.0</td> <td>0.0600</td> <td>00   1.667   150kr from dambe (0.4ha)</td> <td>200</td> <td></td> <td>0 04 500 1250</td> <td></td> <td></td>			0.0	0.0600	00   1.667   150kr from dambe (0.4ha)	200		0 04 500 1250		
v $v$ <td>le (Sec.) 1.0 750 750</td> <td></td> <td>0.0</td> <td>0.0527</td> <td>50 4.748 Irrom dambe (0.6ha), banana</td> <td>3 000 0</td> <td>1000 0.0</td> <td>1 0 1 000 1 000</td> <td>50.8</td> <td></td>	le (Sec.) 1.0 750 750		0.0	0.0527	50 4.748 Irrom dambe (0.6ha), banana	3 000 0	1000 0.0	1 0 1 000 1 000	50.8	
a         b         c         0.0         0.0600         100         2.00         0.0         0.00         0.0         0.00         0.0         0.00         0.0         0.00         0.0         0.00         0.0         0.0         0.0         0.0         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.0         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00			0.0	0.0500	00 2 000 625ke from dembo (0.6ha)	-	00	0 06 750 1250	<u> </u>	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			0.0	0.0500	50 3.000 400kg from damba (0.2ha)		100	0 0.8 500 625	TB-200kg (0.4ha)	5 000
$\frac{1}{10000000000000000000000000000000000$	0.3 375 1.250 0.0		0.0	0.0500	00 2,000	200 0	475 0.0	0 0.6 500 833	25	
Observation         Observation         Inclusion	airman) [ [		0.0	0.0521	25 4.319 400kg from dambo (0.8ha)	0 0	0.0	0 1 0	[TB-150kg (0.4ha)	3.000
V:H. Philusci)         18         1.20         750         10         1.20         250         1.21         1.20         250         21.51         1.21         1.20         250         20.51         20.50         20.50         20.50         20.50         20.50         20.50         20.51         20.50         20.50         20.51         20.50         20.51         20.50         20.51         20.50         20.51         20.50         20.51         20.50         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51         20.51										
Million         0         00         000         000         133         1500         133         1500         133         1500         133         1500         133         1500         133         1500         133         1500         130         133         1500         130         133         1500         130         133         1500         133         1500         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         133         1300         131         1300         131         1300         131         1300         131         1300         131         1300         131         1300         131         1300         131         1300         131         131         1300         131         131         131         131         131         131         131         131         131         131	(V.H. Phulusa1) 1.6 1.200 750	[P-300kg, SP-200kg, B-200kg, G-800kg	16.400 20.0	0.0150	00 6.667 425kg from dambo (0.2875ha), JP-650kg (0.2ha), SC (0.2ha) 2	20,500 0	1,725 0.0	0 1.6 1.350 844	50 (B-150kg, herd beans-100kg, 3P-1,000kg	4,900
08       1.260       1560       16.00 (1.50)       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500       1.500	0.6 800 1.333 150.0	-	0.0	0.0075	0 0 very little from dembo (0.04ha)	0 0	800 0.0	0 0.6 1.125 1.875	26	0
H. Hhuluezi)         0.8         1.440         1550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.550         1.500         1.50         1.50         1.500         1.50         1.500         1.50         1.500         1.50         1.50         1.500         1.50         1.50         1.50         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.500         1.50	0.8 1,000 1.250 150.0	3 SP-60kg (0.03ha)	1,200 4,5	0.0075	15 2.000 37.5kg from dambo (0.05ha), B-2kg, IP-45kg	480 D	1.053 150.0	0 0.8 1.250 1.563	50 B-50kg. SP-125kg	700 50.0
Note         1         100         0.01         100         120         2.400         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01	(H, Phulusa) 0.8 1.250 1.563 125.0		5.0		[190kg from dambe (0.1ha), JP-115kg (0.015ha)	750 0	1.440 150.0	0 0.8 1.050 1.313	00	8.0
Onlow         Image: Constraint of the constraint of										
Image: Normalize (1)         Some         D0150         100         6.667         100         6.667         100         6.667         100         100         00         02         00         02         11           Normatien')         1.6         1.001         6.55         5.00         100         1.00         1.00         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         3000         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         300         1.1.860         1.1.860         300         1.1.860         300         1.1.860         1.1.860         1.1.860         1.1.860	ombe			0.0500	20 2 2400	0 0	00		0	amus
Image			some	0.0150	00 6.667	0 0	0.0	0 02	L	1.0
1         1         1.080         575         500         110-100%         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         1000         10000         10000000         1000000000000000000000000000000000000				0.0750	D0 1.333	0 0	0.0			some
Interfer         1         1.68         300         1.6         1.260         2.050         0         1.880         3000         1.6         4.050         2.631         2.050         0         1.880         3000         1.6         4.050         2.631         2.050         0         1.880         3000         1.6         4.050         2.631         2.050         2.051         1.881         300-400         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2.651         2										
hb         0.8         1.1.540         1.488         2500         0.60         1.540         2500         0.6         1.540         2500         0.6         1.540         2500         0.6         1.540         2500         1.540         2500         1.540         2500         1.1.76         1500         0.6         1.550         2.550         1.550         1.550         1.560         1.560         1.560         2.550         1.1.76         1500         0.68         1.1.36         1.336         1.336         1.336         1.560         1.560         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650         2.650	Von member) 1.6 1.080 675 50.0	2 TB-1,000kg	70,000 100.0		810kg from dambo (0.4ha)	2,050 0	0.000 300.0	0 1.6 4.050 2.531 32	70 TB-1.200kg (1ha)	
Average 0.22 0.37 1.220 2.86 5.433 1.3.1 0.0453 1.29 2.860 6 1.776 1.500 0.88 1.138 1.397 3.56 7.563 2.65	ub) 0.8 1.190 1.489 250.0	3  sold 750kg of maize	10,250 0.0		350kg from dambe (0.07ha), sold 250kg of maize	4,000 0	1,540 250,0	0 0.8 1,190 1,488	0 G-630kg	25.0
	Average 0.92 937 1.020 73.6	6	5.433 13.1	0.0453	29 2,860	2.000 0	1.176 150.0	0 0.86 1.139 1.319	90	1.650 26.3

Note 2: Volume of fertilizer excludes handouts.