APPENDIX-9

INVENTORY OF SH IRRIGATION POTENTIAL SITES

Chapter 1. Potential Area by Inventory Survey

During the first and second field surveys, an inventory survey for the self-help smallholder irrigation scheme was conducted at all the eight ADDs, namely Karonga, Mzuzu, Kasungu, Salima, Lilongwe, Machinga, Blantyre and Shire Valley ADDs. Inventory survey involved all the 178 EPA offices in the country, which are broken down into 15 EPAs for Karonga, 31 EPAs for Mzuzu, 23 EPAs for Kasungu, 8 EPAs for Salima, 36 EPAs for Lilongwe, 31 EPAs for Machinga, 23 EPAs for Blantyre and 11 EPAs for Shire Valley.

According to the inventory survey, a total number of 883 potential sites was identified for the eight ADDs, among which 230 sites were existing schemes and 653 were proposed (new) schemes and the total potential area amounts to 11,260 ha as summarized in the table below. These will be considered as potential areas for the self-help small-scale irrigation schemes in the eight ADDs. The list of the sites is also shown on attached Tables 4.3 and 4.4.

During the implementation of the verification project in Kasungu and Lilongwe ADDs, EPA officers have developed many more sites than the ones they identified by the inventory survey. Hence, it is expected that EPA officers in all the ADDs could develop more sites than their listing irrigation potential sites in this inventory survey, once they are trained or involved in smallholder irrigation development.

Table 1.1 Number of Inventory Survey Sites and Potential Area

ADD	Existing Scheme		New Scheme		Total	
	No of sites	Area (ha)	No of Sites	Area (ha)	No of Sites	Area (ha)
Karonga ADD	16	230	36	360	52	590
Mzuzu ADD	22	270	144	1,660	166	1,930
Kasungu ADD	64	900	87	1,210	151	2,110
Salima ADD	6	650	37	290	43	940
Lilongwe ADD	59	800	133	1,320	192	2,120
Machinga ADD	21	400	125	1,790	146	2,190
Blantyre ADD	34	170	50	320	84	490
Shire Valley ADD	8	170	41	720	49	890
Total	**230**	**3,590**	**653**	**7,670**	**883**	**11,260**

Chapter 2. Categorization of Potential Irrigation Sites

The type of irrigation schemes for inventory survey is mostly the surface (gravity river diversion) irrigation system as it was so arranged to identify potential sites suitable to self-help smallholder farmers. The potential sites for the self-help smallholder irrigation scheme will be categorized into different types of irrigation technology as referred to the existing system in Malawi. As a result, majority of the potential sites falls in “Stream/River” in terms of water source, “Gravity” for water abstraction method and “Open Canal” as water delivery method.

Out of the total 883 sites, stream / river as water source counts for 691 sites or 78% of the total sites, followed by impounding dam with 108 sites or 12% of the total sites. In terms of water abstraction type, 791 sites or 90 % of the total sites are applied with gravity irrigation, followed by treadle pump with 63 sites or 7% of the total sites. As for water delivery type,

open canal system is applied in 813 sites or 92 % of the total sites, followed by pressurized pipe system with 61 sites or 7 % of the total sites (See Table 2.1 below).

Table 2.1 Number of Potential Irrigation Sites by Irrigation Technology

Water Source		Water Abstraction		Water Delivery	
Type	**Site**	**Type**	**Site**	**Type**	**Site**
1. Stream / river	691	1. Gravity	791	1. Open canal	813
2. Impounding dam	108	2. Treadle pump	63	2. Pressure pipe(sprinkler)	61
3. Spring	49	3. Motorized pump	26	3. Manpower carry	9
4. Shallow well (dug well)	28	4. Watering cans/ buckets	3		
5. Deep well (tube well)	0				
6. Lake	7				

Table 2.2 Summary of the Inventory by EPA, RDP, ADD (1/3)

Region	ADD	RDP	EPA		No. of sites			Serial No.
					Total	Existing	New	
North	Karonga	Chitipa	1	Kameme	1	0	1	KR 1
			2	Lufita	3	2	1	KR 2 - KR 4
			3	Misuku	5	4	1	KR 5 - KR 9
			4	Kavukuku	3	0	3	KR 10 - KR 12
			5	Chisenga	5	2	3	KR 13 - KR 17
			6	Mwamkumbwa	6	0	6	KR 18 - KR 23
		Karonga	7	Vinthukutu	2	0	2	KR 24 - KR 25
			8	Karonga	1	1	0	KR 26
			9	Karonga south	2	2	0	KR 27 - KR 28
			10	Karonga north	1	1	0	KR 29
			11	Kaporo	1	1	0	KR 30
			12	Kaporo north	6	2	4	KR 31 - KR 36
			13	Mpata	5	1	4	KR 37 - KR 41
			14	Kaporo south	5	0	5	KR 42 - KR 46
			15	Lupembe	6	0	6	KR 47 - KR 52
		Total of Karonga			**52**	**16**	**36**	
	Mzuzu	Nkhata Bay	1	Chikwina	5	0	5	MZ 1 - MZ 5
			2	Mzenga	8	0	8	MZ 6 - MZ 13
			3	Mpamba	5	1	4	MZ 14 - MZ 18
			4	Chinthechi	5	2	3	MZ 19 - MZ 23
			5	Nkhata Bay	5	0	5	MZ 24 - MZ 28
			6	Tukombo	5	0	5	MZ 29 - MZ 33
			7	Chitheka	5	0	5	MZ 161 - MZ 165
		Rumphi/N.Mzimba	8	Mphonpha	5	0	5	MZ 34 - MZ 38
			9	Chiweta	5	2	3	MZ 39 - MZ 42, 166
			10	Mhuju	5	1	4	MZ 43 - MZ 47
			11	Ntchenachena	5	0	5	MZ 48 - MZ 52
			12	Katowo	6	2	4	MZ 155 - MZ 160
		Central Mzimba	13	Mpherembe	5	0	5	MZ 53 - MZ 57
			14	Malidade	5	0	5	MZ 58 - MZ 62
			15	Emsizini	5	2	3	MZ 63 - MZ 65, 95, 96
			16	Zombwe	5	1	4	MZ 66 - MZ 70
			17	Bulala	5	0	5	MZ 71 - MZ 75
			18	Emfeni	4	0	4	MZ 76 - MZ 79
			19	Njuyu	5	2	3	MZ 80 - MZ 84
			20	Champhila	8	1	7	MZ 85 - MZ 92
			21	Khosolo	5	0	5	MZ 93, 94, 97 - MZ 99
			22	Luwerezi	5	0	5	MZ 100 - MZ 104
			23	Manyamula	8	1	7	MZ 105 - MZ 112
			24	Bwengu	5	1	4	MZ 113 - MZ 117
			25	Mjinga	4	0	4	MZ 118 - MZ 121
			26	Eswazini	5	0	5	MZ 122 - MZ 126
			27	Kazombo	5	0	5	MZ 127 - MZ 131
			28	Euthine	5	4	1	MZ 132 - MZ 136
			29	Mbalachanda	5	2	3	MZ 137 - MZ 141
			30	Mbawa	6	0	6	MZ 142 - MZ 147
			31	Vibangalala	7	0	7	MZ 148 - MZ 154
		Total of Mzuzu			**166**	**22**	**144**	

Table 2.2 Summary of the Inventory by EPA, RDP, ADD (2/3, con'd)

Region	ADD	RDP	EPA		No. of sites			Serial No.
					Total	Existing	New	
Central	Kasungu	Kasungu	1	Chamama	7	7	0	KU 1 - KU 7
			2	Lisasadzi	6	0	6	KU 8 - KU 13
			3	Chipala	8	2	6	KU 14 - KU 21
			4	Santhe	4	4	0	KU 22 - KU 25
			5	Kaluluma	6	0	6	KU 26 - KU 31
			6	Bowe	6	1	5	KU 32 - KU 37
		Ntchisi	7	Chipuka	9	9	0	KU 38 - KU 46
			8	Chikwatula	6	5	1	KU 47 - KU 52
			9	Malomo	6	6	0	KU 53 - KU 58
			10	Kalira	8	4	4	KU 59 - KU 66
		Dowa	11	Mvera	9	9	0	KU 67 - KU 75
			12	Nachisaka	8	2	6	KU 76 - KU 83
			13	Modolera	6	2	4	KU 84 - KU 89
			14	Madisi	4	0	4	KU 90 - KU 93
			15	Chisepo	6	0	6	KU 94 - KU 99
			16	Mponela	8	1	7	KU 100 - KU 107
			17	Chivala	8	0	8	KU 108 - KU 115
		Mchinji	18	Mlonyeni	5	2	3	KU 116 - KU 120
			19	Chioshya	9	4	5	KU 121 - KU 129
			20	Kalulu	5	3	2	KU 130 - KU 134
			21	Msitu	3	0	3	KU 135 - KU 137
			22	Mikundi	6	0	6	KU 138 - KU 143
			23	Mkanda	8	3	5	KU 144 - KU 151
		Total of Kasungu			**151**	**64**	**87**	
	Salima	Nkhotakota	1	Mwansambo	6	0	6	SA 1 - SA 6
			2	Linga	5	0	5	SA 7 - SA 11
			3	Zidyana	7	0	7	SA 12 - SA 18
			4	Nkhunga	4	0	4	SA 19 - SA 22
		Salima	5	Khombedza	6	2	4	SA 23 - SA 28
			6	Chinguluwe	5	0	5	SA 29 - SA 33
			7	Chipoka	5	2	3	SA 34 - SA 38
			8	Tembwe	5	2	3	SA 39 - SA 43
		Total of Salima			**43**	**6**	**37**	
	Lilongwe	Lilongwe West	1	Demera	8	0	8	LL 1 - LL 8
			2	Ukwe	6	1	5	LL 9 - LL 14
			3	Ming'ong'o	5	2	3	LL 15 - LL 19
			4	Mpingu	5	2	3	LL 20 - LL 24
			5	Thawale	5	2	3	LL 25 - LL 29
			6	Malingunde	5	0	5	LL 30 - LL 34
			7	Mitundu	5	0	5	LL 35 - LL 39
			8	Chileka	5	3	2	LL 40 - LL 44
			9	Chilaza	5	0	5	LL 45 - LL 49
			10	Mlombwa	5	0	5	LL 50 - LL 54
			11	Mwala-Nthondo	5	1	4	LL 55 - LL 59
			12	Mngwangwa	9	0	9	LL 60 - LL 68
		Lilongwe East	13	Chiwamba	5	2	3	LL 69 - LL 73
			14	Chitekwere	9	4	5	LL 74 - LL 82
			15	Chigonthi	3	0	3	LL 83 - LL 85
			16	Chitsime	5	3	2	LL 86 - LL 90
			17	Nyanja	5	1	4	LL 91 - LL 94, 191
			18	Mkwinda	5	0	5	LL 95 - LL 99
			19	Mpenu	5	4	1	LL 100 - LL 104
		Dedza West (Thiwi-Lifidzi)	20	Lobi	5	0	5	LL 105 - LL 109
			21	Chafumbwa	5	0	5	LL 110 - LL 114
			22	Kabwazi	5	2	3	LL 115 - LL 119
			23	Linthipe	5	1	4	LL 120 - LL 124
		Dedza East (Dedza Hills)	24	Kaphuka	5	2	3	LL 125 - LL 129
			25	Mayani	6	1	5	LL 130 - LL 135
			26	Mtakataka	5	0	5	LL 136 - LL 140
			27	Kanyama	6	2	4	LL 141 - LL 145, 192
			28	Golomoti	5	3	2	LL 146 - LL 150
			29	Bembeke	5	4	1	LL 151 - LL 155
		Ntcheu	30	Nsipe	6	6	0	LL 156 - LL 161
			31	Manjawira	4	1	3	LL 162 - LL 165
			32	Bilira	5	0	5	LL 166 - LL 170
			33	Njolomole	5	0	5	LL 171 - LL 175
			34	Tsangano	5	5	0	LL 176 - LL 180
			35	Kandeu	5	4	1	LL 181 - LL 185
			36	Shapevale	5	3	2	LL 186 - LL 190
		Total of Lilongwe			**192**	**59**	**133**	

Table 2.2 Summary of the Inventory by EPA, RDP, ADD (3/3, con'd)

Region	ADD	RDP	EPA	No. of sites			Serial No.
				Total	Existing	New	
South	Machinga	Mangochi	1 Mpilipili	6	0	6	MHG 1 - MHG 6
			2 Nasenga	5	0	5	MHG 7 - MHG 11
			3 Lungwenya	5	1	4	MHG 12 - MHG 16
			4 Nankumba	5	2	3	MHG 17 - MHG 21
			5 Masuku	6	1	5	MHG 22 - MHG 27
			6 Chilipa	5	0	5	MHG 28 - MHG 32
			7 Mthilmanja	4	1	3	MHG 33 - MHG 36
			8 Katuli	3	0	3	MHG 37 - MHG 39
			9 Ntiya	4	0	4	MHG 40 - MHG 43
			10 Mbwadzulu	5	0	5	MHG 44 - MHG 48
		Balaka	11 Utale	5	0	5	MHG 49 - MHG 53
			12 Phalula	1	0	1	MHG 54
			13 Bazale	5	0	5	MHG 55 - MHG 59
			14 Ulongwe	5	0	5	MHG 60 - MHG 64
			15 Rivirivi	5	0	5	MHG 65 - MHG 69
			16 Mpilisi	5	0	5	MHG 70 - MHG 74
		Machinga	17 Nsanama	4	2	2	MHG 75 - MHG 78
			18 Nampeya	5	2	3	MHG 79 - MHG 83
			19 Mbonekera	3	1	2	MHG 84 - MHG 86
			20 Nyambi	6	0	6	MHG 87 - MHG 92
			21 Mtubwi	6	1	5	MHG 93 - MHG 98
			22 Nanyumu	4	4	0	MHG 99 - MHG 102
			23 Chuweq	3	0	3	MHG 103 - MHG 105
			24 Ngwelero	5	0	5	MHG 106 - MHG 110
		Zomba	25 Thondwe	5	4	1	MHG 111 - MHG 115
			26 Chingale	5	0	5	MHG 116 - MHG 120
			27 Mpokwa	5	0	5	MHG 121 - MHG 125
			28 Nsondole	4	0	4	MHG 126 - MHG 129
			29 Likangala	7	0	7	MHG 130 - MHG 136
			30 Dzaone	5	2	3	MHG 137 - MHG 141
			31 Malosa	5	0	5	MHG 142 - MHG 146
		Total of Machinga		**146**	**21**	**125**	
	Blantyre	Neno	1 Neno	4	4	0	BLT 1 - BLT 4
			2 Lisungwi	2	1	1	BLT 16 - BLT 17
		Mwanza	3 Mwanza	5	3	2	BLT 6 - BLT 10
			4 Thambani	5	3	2	BLT 11 - BLT 15
		Blantyre	5 Lirangwe	1	0	1	BLT 19
			6 Chipande	4	4	0	BLT 20 - BLT 23
			7 Ntonda	5	0	5	BLT 24 - BLT 28
			8 Kunthembwe	5	1	4	BLT 29 - BLT 32, 18
		Phalombe	9 Nkhulambe	3	0	3	BLT 33 - BLT 35
			10 Kasongo	1	0	1	BLT 36
		Chiradzulu	11 Mombezi	1	0	1	BLT 37
			12 Mbulumbuzi	1	0	1	BLT 38
			13 Thumbwe	6	6	0	BLT 39 - BLT 44
		Mulanje	14 Milonde	4	1	3	BLT 45 - BLT 48
			15 Mulanje Boma	2	0	2	BLT 49 - BLT 50
			16 Thuchila	6	0	6	BLT 51 - BLT 56
			17 Kamwendo	5	3	2	BLT 57 - BLT 61
		Thyolo	18 Masambanjati	4	3	1	BLT 62 - BLT 65
			19 Thekelani	4	0	4	BLT 66 - BLT 69
			20 Thyolo centre	3	0	3	BLT 70 - BLT 72
			21 Dwale	7	0	7	BLT 73 - BLT 79
			22 Khonjeni	2	1	1	BLT 80 - BLT 81
			23 Matapwata	4	4	0	BLT 82 - BLT 85
		Total of Blantyre		**84**	**34**	**50**	
	Shire Valley	Chikwawa	1 Dolo	5	0	5	SHV 1 - SHV 5
			2 Kalambo	10	0	10	SHV 6 - SHV 15
			3 Mitole	4	1	3	SHV 16 - SHV 18, 51
			4 Livunzu	4	0	4	SHV 19 - SHV 22
			5 Mbewe	5	3	2	SHV 23 - SHV 27
			6 Mikalango	4	2	2	SHV 28 - SHV 31
		Nsanje	7 Zunde	5	0	5	SHV 32 - SHV 36
			8 Nyachilenda	2	0	2	SHV 39 - SHV 40
			9 Makhanga	5	1	4	SHV 41 - SHV 45
			10 Mpatsa	3	0	3	SHV 46 - SHV 48
			11 Magoti	2	1	1	SHV 49 - SHV 50
		Total of Shire Valley		**49**	**8**	**41**	
			Grand total	**883**	**230**	**653**	

Chapter 3. Willingness, Needs, Affordability, etc.

The inventory survey has asked concerned farmer representative(s) of; 1) self-help works they have undertaken in the past, 2) why they have not constructed the irrigation system by themselves and what they need to construct the irrigation system, 3) willingness to provide voluntary labors, 4) willingness to bear cash contribution and how much, 5) needs to start irrigation upon completion of the irrigation scheme, 6) lunch offer to the GOM officers engaged, and 7) how much percentage the government should undertake as a whole, etc. Following are the summary:

3.1 Self-help Works

So far, almost all the villages have carried out some sort of their own self-help works, except for Blantyre ADD, where around 30% of the villages have no significant experiences of self-help works. These are village road construction/ rehabilitation, molding bricks in most of the cases, and in some cases canalization and building schools. Food for work and other works under provision of tool and materials have not so often been done; only about 0 to 20% community have experienced.

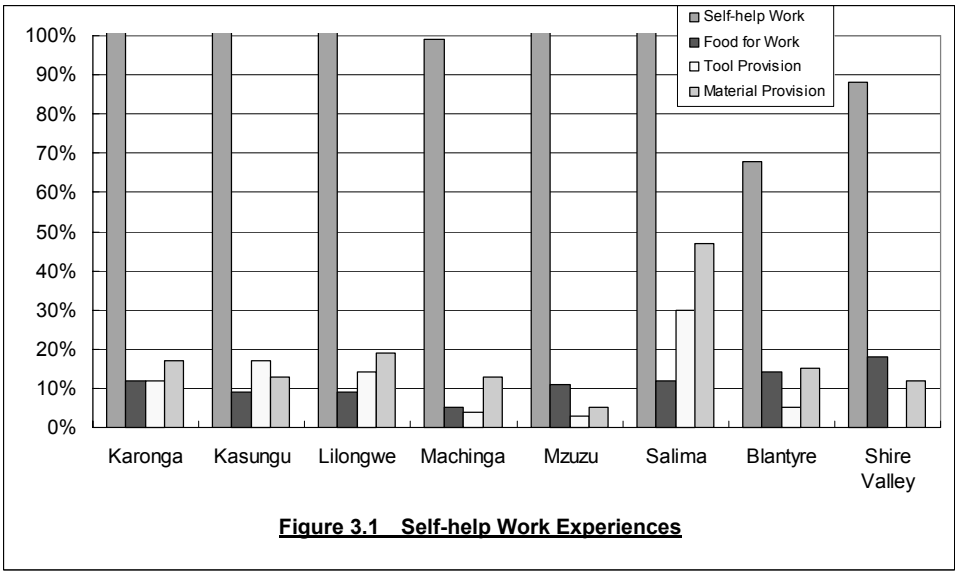


Figure 3.1 Self-help Work Experiences

3.2 Causes of not Starting Irrigation

Despite the irrigation potential besides them, why they have not yet started the irrigation to date are: do not know how to use the water for irrigation with about 30% to as much as 50%; lack of initiative is about 30% to 40%; lack of technical services and/ or tools and materials are most commonly cited as about 50% to more than 90%. Of tools and materials they lack, most often cited were wheelbarrow, shovels, and cement.

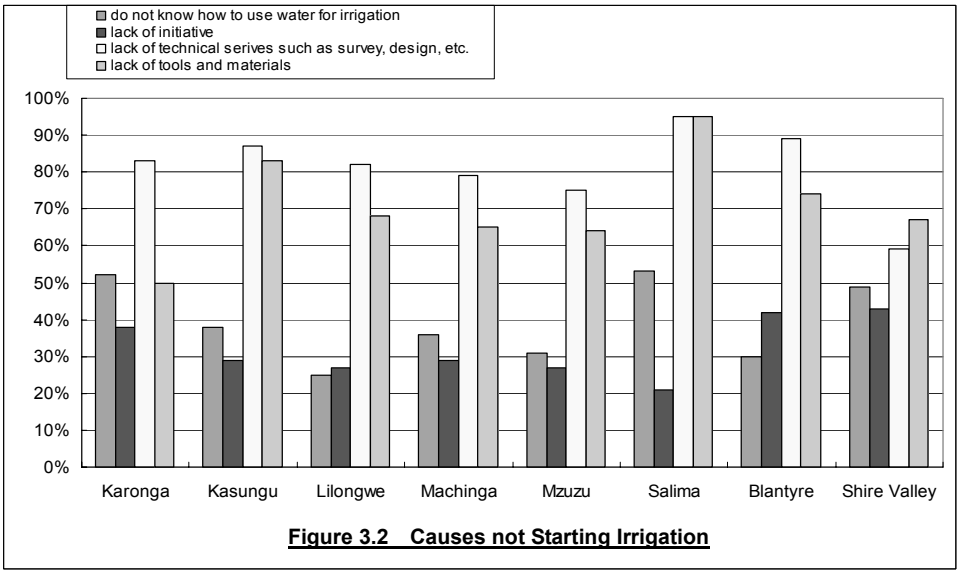


Figure 3.2 Causes not Starting Irrigation

3.3 Willingness to Provide Voluntary Work

About 75% to 90% by ADD have replied that they are ready to provide all the voluntary work required for the construction work (voluntary means no provision of food, etc.). The working hour would be limited to 3 to 4 hours a day since they do not take enough food, making them difficult to work over noon. While, the reason why about 10% village cannot provide the labor is mostly food shortage or busy for getting the food.

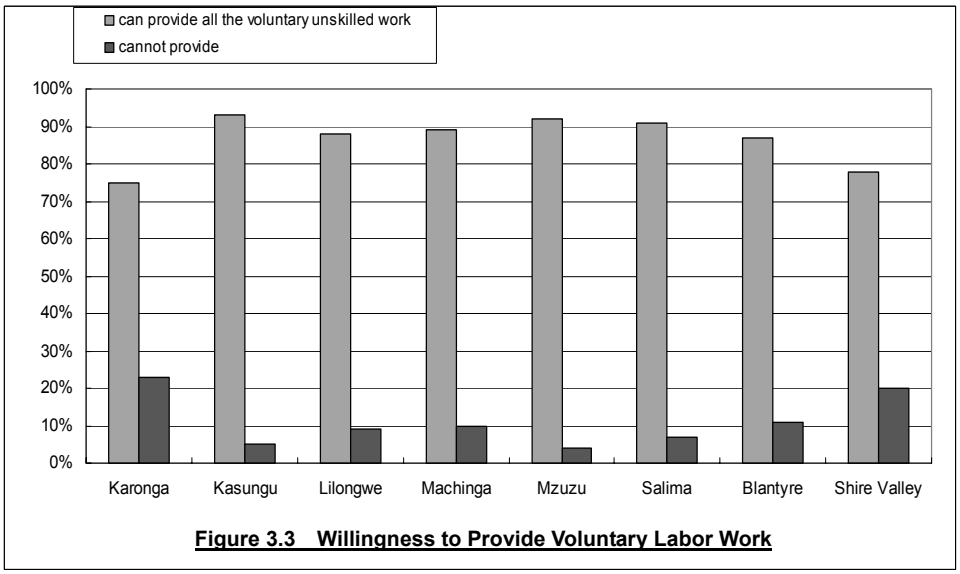


Figure 3.3 Willingness to Provide Voluntary Labor Work

3.4 Willingness for Cash Contribution

Irrigation system may require some foreign materials such as cements, wire, etc. In this case, cash contribution from the community will be needed. The amount how much they willingly contribute in cash to procuring the foreign materials is; less than MK 50 per household with about 10% to 25%, MK 50 – 100 per household with 30 to 40% which is the majority, more than MK 100 becomes less in percentage.

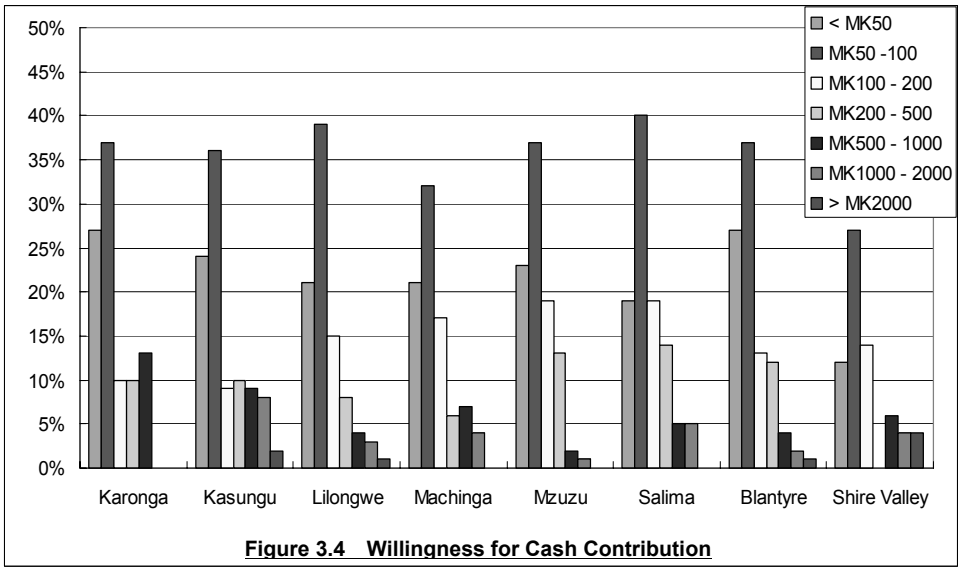


Figure 3.4 Willingness for Cash Contribution

3.5 Readiness to Start Irrigation upon Work Completion

About 60% responded they would start irrigation upon completion of the construction work. However, about 20% to 30% responded that they would still need some technical assistance such as training of water management. This tendency is less in southern part of the country. One unique thing is that more than half of the 30% responded they need seed and fertilizer otherwise they may not start irrigation. Seed and fertilizer are presently provided under a program called TIP, and this may have led the villagers to have that mind.

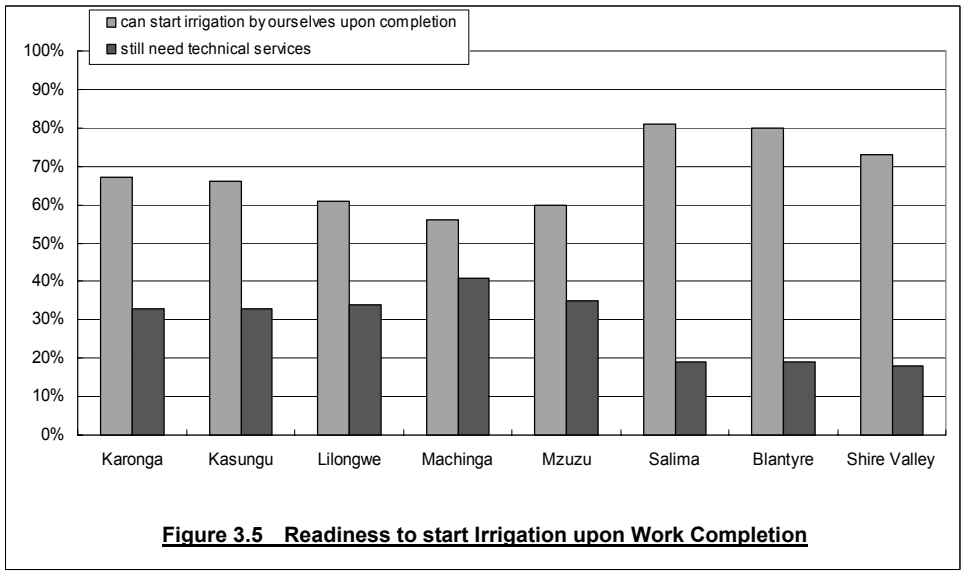


Figure 3.5 Readiness to start Irrigation upon Work Completion

3.6 Lunch Offer to the Gvt Officers

During the construction work, the government officers have to attend the site. A question was given if the villagers are ready to offer lunch for the government officers. More than 80% responded, except Machinga and Blantyre, that they could provide local lunch. The

reasons for the respondents who say that they cannot provide lunch are simply shortage of food in the village or fund to arrange the food. Machinga falls in a poorer region, so that the answer may have reflected the situation.

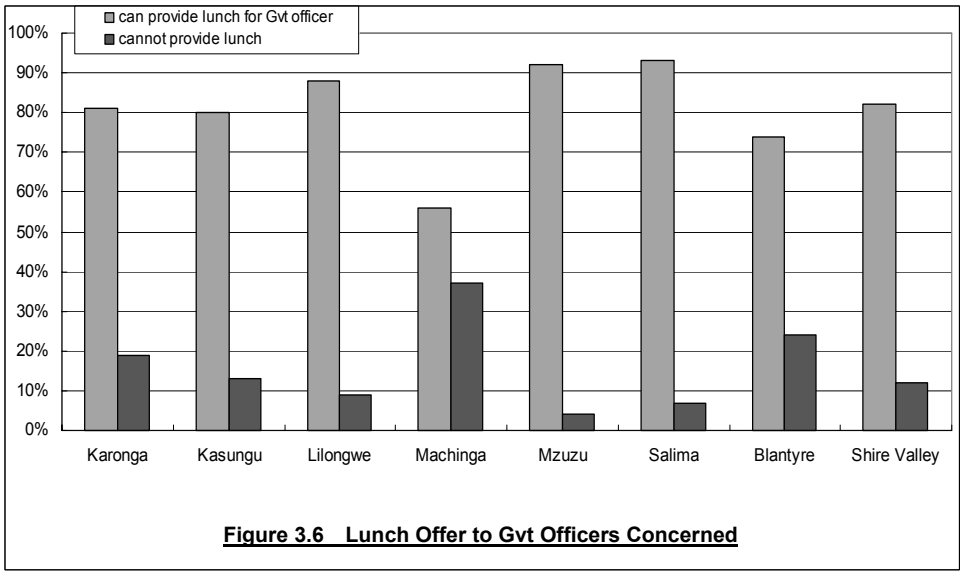


Figure 3.6 Lunch Offer to Gvt Officers Concerned

3.7 Government Contribution to the Project

As a whole, how much percentage do you want your government to undertake the construction/ rehabilitation work of the irrigation system was a question. The majority, about one every 3 villages, responded the government should bear about 40 to 60% of the whole construction requirement, meaning half-half sharing between the two.

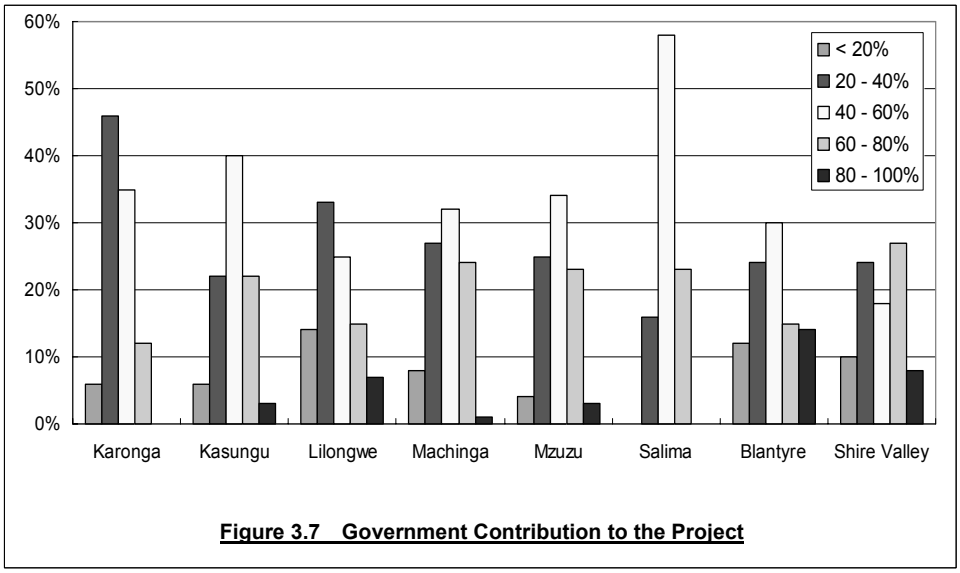


Figure 3.7 Government Contribution to the Project

Chapter 4. Prioritization of Potential Areas

According to the result of the inventory survey, potential of smallholders irrigation development were rated in each level of EPA, RDP and ADD. The potential of EPA was ranked among the EPAs under the same subordinate RDP, likewise the potential of RDP, which is the sum of potentials of its subordinate EPAs, was ranked among the RDPs belonging to same ADD. Finally the potential of ADD was ranked among them.

The ranking was conducted from the viewpoints of physical condition, degree of self-effort of villagers, and the observation of concerned AEDOs on strength of the community. These points (indicators) were individually evaluated. Each indicator was scored as following explanations in Table 4.1 below and the result of the ranking is shown in Table 4.2.

Table 4.1 Indicators of EPA, RDP and ADD for Ranking

Indicator		Way of Scoring
1. Physical condition		The number of potential sites modified by the river flow condition is used. If the river flow of a site is perennial, score 1 is given and if it is seasonal, the score is 0. If the river flow of the site is seasonal, it is not included in the potential site.
2. Self-effort of villagers	2.1 Labor contribution	In each site, village leader was asked if they were willing to contribute labor. If the answer is yes, it is scored 1, otherwise 2. Average of the score of all the sites in an EPA is compared to that of other EPAs belonging to the same RDP. The lower the score is, the higher the EPA is ranked.
	2.2 Cash contribution	In each site, village leader was asked how much they could contribute to irrigation development. The score was given 1 to the answer of “less than 50MK”, 2 to 50 – 100MK”, 3 to “100 – 200MK”, 4 to “200 – 500MK”, 5 to “500 – 1000MK”, 6 to “1000 – 2000MK”, and to 7 to “more than 2000MK”. Average of the score of all the sites in an EPA is compared to that of other EPAs belonging to the same RDP. The higher the score is, the higher the EPA is ranked.
	2.3 Expectation to Government	In each site, village leader was asked how much they thought the government should subsidize to irrigation development. The score was given 1 to the answer of “less than 20%”, 2 to “20 – 40%”, 3 to “40 – 60%”, 4 to “60 – 80%”, 5 to “more than 80%”. Average of the score of all the sites in an EPA is compared to that of other EPAs belonging to the same RDP. The lower the score is, the higher the EPA is ranked.
3. Community strength (AEDO observation)		AEDO assessed the communities from the viewpoints of (1) Leadership, (2) Coherence, and (3) Dependency with 1 to “very strong”, 2 to ”strong”, 3 to “medium”, 4 to “weak” and 5 to “very weak” for each point. The score is aggregated by the form of (1)×(2) / (3). The higher the score is, the higher the EPA is ranked.

Table 4.2 Ranking of EPA, RDP and ADD on Smallholders Irrigation Development (1/3)

ADD	RDP	EPA	Physical Condition	Labor Contribution	Cash Contribution	Less Expectation to Gvt	Community Strength
Lilongwe	Lilongwe West	Mpingu	1	1	5	9	11
		Thawale	2	1	5	1	8
		Mlombwa	3	8	10	3	5
		Mitundu	4	1	7	2	1
		Mngwangwa	5	12	7	10	6
		Demera	6	11	2	7	8
		Ukwe	7	8	1		
		Chileka	8	1	3	4	7
		Ming'ong'o	9	1	7	5	1
		Malingunde	10	1	12	7	4
		Mwala-Nthondo	11	1	3		10
		Chilaza	12	8	11	5	1
	RDP Total(Average)		1	3	5	2	1
	Lilongwe East	Chitekwere	1	1	4	7	3
		Nyanja	2	1	5	4	5
		Mkwinda	3	1	6	1	5
		Chiwamba	4	1		2	2
		Chitsime	5	1	3	6	1
		Chigonthi	6	1	2	5	4
		Mpenu	7	1	1	3	
	RDP Total(Average)		2	1	2	3	3
	Ntcheu	Kandeu	1	1	1		6
		Tsangano	2	7	3	2	5
		Shapevale	3	1	6	2	6
		Njolomole	4	1	4	4	2
		Nsipe	5	6	2	5	3
		Bilira	6	1	6	1	1
		Manjawira	7	1	5		4
	RDP Total(Average)		3	3	1	4	5
	Dedza East (Dedza Hills)	Kanyama	1	1	3	5	4
		Mayani	2	1		3	
		Mtakataka	3	1	1	1	1
		Kaphuka	4	1	2	6	2
		Golomoti	5	1	4	2	5
		Bembeke	6	1	4	4	3
	RDP Total(Average)		4	1	2	1	3
	Dedza West (Thiwi-Lifidzi)	Chafumbwa	1	1	1	1	1
		Linthipe	2	4	2	4	
		Lobi	3	1	2	3	1
		Kabwazi	4	1	2	1	3
	RDP Total(Average)		5	3	4	4	2
ADD Total(Average)			1	2	4	2	6
Mzuzu	Central Mzimba	Champhila	1	1	2	10	16
		Manyamula	2	1	7	4	8
		Emsizini	3				
		Luwerezi	4	1	18	11	6
		Kazombo	5	1	10	2	3
		Khosolo	6	1	3	4	8
		Bwengu	7	17	9	18	17
		Mbawa	8	1	16	11	8
		Eswazini	9	1	5	1	3
		Malidade	10	1	7	8	13
		Zombwe	11	1	6	4	13
		Mjinga	12	1	10	7	11
		Emfeni	13	1	4	3	11
		Mpherembe	14	18	16	17	18
		Mbalachanda	15	1	10	15	2
		Njuyu	16	1	10	11	6
		Vibangalala	17	1	15	14	5
		Euthine	18	1	10	15	15
		Bulala	19	1	1	8	1
	RDP Total(Average)		1	1	2	1	3
	Nkhata Bay	Mzenga	1	1	2	1	2
		Chitheka	2	1	5	5	3
		Mpamba	3	1	2	3	6
		Chinthechi	4	1	7	2	1
		Tukombo	5	7	1	6	3
		Nkhata Bay	6	1	6	6	5
		Chikwina	7	1	4	4	7
	RDP Total(Average)		2	1	1	2	1
	Rumphi/N.Mzimba	Katowo	1	1	1	5	3
		Mphonpha	2	4	2	3	1
		Mhuju	3	4	5	4	
		Ntchenachena	4	1	3	1	4
		Chiweta	5	1	3	1	2
	RDP Total(Average)		3	3	2	3	1
ADD Total(Average)			2	2	7	6	1

Table 4.2 Ranking of EPA, RDP and ADD on Smallholders Irrigation Development (2/3) Con'd

ADD	RDP	EPA	Physical Priority	Labor Contribution	Cash Contribution	Less Expectation to	Community Strength
Kasungu	Dowa	Mvera	1	1	3	5	7
		Nachisaka	2	7	2	4	5
		Chivala	3	1	5	2	2
		Chisepo	4	1	3	1	6
		Madisi	5	1	1	6	4
		Mponela	6	1	7	3	1
		Modolera	7	1	6	7	3
	RDP Total(Average)		1	1	4	3	1
	Ntchisi	Chipuka	1	1	2	3	3
		Kalira	2	4	3	4	1
		Chikwatula	3	1	4	1	4
		Malomo	4	1	1	2	2
	RDP Total(Average)		2	3	2	1	2
	Mchinji	Mkanda	1	1	2	2	3
		Mlonyeni	2	1	6	3	1
		Chioshya	3	1	5	1	2
		Kalulu	4	6	3	4	4
		Msitu	5	1	3	5	4
		Mikundi	6	1	1	5	6
	RDP Total(Average)		3	1	3	4	4
	Kasungu	Chipala	1	5	3	4	4
		Chamama	2	1	2	6	2
		Santhe	3	6	1	2	3
		Lisasadzi	4	1	6	3	1
		Bowe	5	1	4	5	5
		Kaluluma	6	1	5	1	6
	RDP Total(Average)		4	3	1	2	3
ADD Total(Average)			3	1	4	4	5
Machinga	Mangochi	Mpilipili	1	1	5	4	8
		Masuku	2	1	4	3	5
		Nankumba	3	1	2	4	
		Lungwenya	4	10	1	10	
		Mthilmanja	5	1	7	8	1
		Ntiya	6	1	7	1	6
		Chilipa	7	1	9	9	6
		Katuli	8	1	6	4	3
		Nasenga	9	1	10	7	4
		Mbwadzulu	10	1	3	1	2
	RDP Total(Average)		1	1	3	3	1
	Zomba	Thondwe	1	1	6	6	
		Malosa	2	1	5	3	1
		Mpokwa	3	1	2	2	2
		Likangala	4	7	4	4	4
		Dzaone	5	1	3	7	
		Chingale	6	1	1	1	5
		Nsondole	7	1		5	2
	RDP Total(Average)		2	1	4	1	4
	Balaka	Ulongwe	1	1	5	1	1
		Utale	2	5	1	5	1
		Mpilisi	3	1	3	4	
		Rivirivi	4	1	5	3	
		Bazale	5	1	3	1	
		Phalula	6	5	2	6	1
	RDP Total(Average)		3	4	2	2	3
	Machinga	Mtubwi	1	7	5	6	8
		Nyambi	2	1	2	5	5
		Mbonekera	3	1	4	8	2
		Nsanama	4	1	3	4	4
		Nampeya	5	1	1	1	6
		Ngwelero	6	6	7	7	7
		Nanyumu	7	1	6	2	1
		Chuweo	8	7		3	3
	RDP Total(Average)		4	3	1	3	2
ADD Total(Average)			4	2	2	3	4

Table 4.2 Ranking of EPA, RDP and ADD on Smallholders Irrigation Development (3/3) Con'd

ADD	RDP	EPA	Physical Priority	Labor Contribution	Cash Contribution	Less Expectation to Gvt	Community Strength
Blantyre	Thyolo	Dwale	1	1	3	2	4
		Masambanjati	2	1	2	4	1
		Thekelani	3	1	5	3	3
		Thyolo centre	4	1	6	1	2
		Khonjeni	5	1	4	5	
		Matapwata	6	6	1	6	4
	RDP Total(Average)		1	1	3	1	1
	Mulanje	Thuchila	1	3	1	1	2
		Kamwendo	2				
		Milonde	3	1	2	3	2
		Mulanje Boma	4	1	2	2	1
	RDP Total(Average)		2	5	7	4	4
	Blantyre	Kunthembwe	1	3	3	2	4
		Ntonda	2	2	2	3	2
		Chipande	3	1	1	1	3
		Lirangwe	4	4		4	1
	RDP Total(Average)		3	7	2	2	3
	Mwanza	Thambani	1	1	2	2	1
		Mwanza	2	1	1	1	2
	RDP Total(Average)		4	1	5	3	5
	Neno	Neno	1	1	1	1	2
		Lisungwi	2	2	2	2	1
	RDP Total(Average)		5	6	1	6	7
	Chiradzulu	Thumbwe	1	1	3	1	2
		Mbulumbuzi	2	1	1	3	3
		Mombezi	3	1	1	2	1
	RDP Total(Average)		6	1	6	4	2
	Phalombe	Nkhulambe	1	1	2	2	1
		Kasongo	2	1	1	1	1
	RDP Total(Average)		7	1	4	7	6
ADD Total(Average)			5	2	7	8	2
Shire	Chikwawa	Kalambo	1	5	3	5	5
		Livunzu	2	1	4	4	1
		Mikalango	3	1		3	3
		Mitole	4	1	4	1	4
		Dolo	5	6	1	6	2
		Mbewe	6	1	2	1	
	RDP Total(Average)		1	1	1	1	1
	Nsanje	Makhanga	1				
		Zunde	2	1	3	2	
		Nyachilenda	3	4		1	1
		Magoti	4	1	2	3	
		Mpatsa	5	1	1	3	1
	RDP Total(Average)		2	1	2	2	2
ADD Total(Average)			6	2	1	4	6
Karonga	Karonga	Kaporo north	1	8	1	6	3
		Kaporo south	2	9	8	8	1
		Mpata	3	1	3	5	6
		Karonga south	4	1	2	2	4
		Vinthukutu	5	1	4	2	4
		Karonga	6	1	4	2	7
		Kaporo	7	1	9	9	9
		Karonga north	8	1	4	7	2
		Lupembe	9	1	7	1	8
	RDP Total(Average)		1	2	2	1	2
	Chitipa	Chisenga	1	1	6	4	5
		Lufita	2	1	3	3	2
		Kavukuku	3	1	1	1	3
		Mwamkumbwa	4	5	4	4	6
		Misuku	5	5	2	2	4
		Kameme	6	1	4	6	1
	RDP Total(Average)		2	1	1	2	1
ADD Total(Average)			7	2	4	1	2
Salima	Nkhotakota	Zidyana	1	1	3	1	3
		Linga	2	1	4	1	
		Nkhunga	3	1	1	4	1
		Mwansambo	4	4	2	3	2
	RDP Total(Average)		1	1	2	2	1
	Salima	Tembwe	1	4	1	2	4
		Chipoka	2	1	4	4	1
		Khombedza	3	3	2	2	2
		Chinguluwe	4	1	3	1	3
	RDP Total(Average)		2	2	1	1	1
ADD Total(Average)			8	8	2	7	6

Table 4.3 Inventory List of Self-help Small-Scale Irrigation System (Existing Sites)

(Existing Sites)

No	Site No.	1. Name of Site	2. Location						3. Year Built	4. Operation	5. Present Irrigated Area		6. Potential Area		7. Fund Source	8. Altitude			9. Source of Water	10. Name of River /Dam/Dambo	11. River Flow		12. Width of River
			Region	District	ADD	RDP	EPA	Village			Wet S. (ha)	Dry S. (ha)	Wet S. (ha)	Dry S. (ha)		(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
1	KR-2	Chibula	North	Chitipa	Karonga	Chitipa	Lufita	Mbegani and Cheni	2002					30	Malawi Government	400	412	328	Stream	Chibula	Perennial		2
2	KR-3	Namwafi 1&2	North	Chitipa	Karonga	Chitipa	Lufita	Nandunda	2002					10	Malawi Government	4000	417	354	Stream	Namwafi	Perennial		11
3	KR-5	Sato	North	Chitipa	Karonga	Chitipa	Misuku	Yeniyeni	1990	Operation	8.00	7.00	15	14	Self help				Stream	Witumba	Perennial	All year	0
4	KR-6	Ilyoto	North	Chitipa	Karonga	Chitipa	Misuku	Yeniyeni	1996	Partial operation	13.00	8.00	17	14	Others Unknown				Stream	Tondo	Perennial	All year round	0
5	KR-7	Kabanga	North	Chitipa	Karonga	Chitipa	Misuku	Kaleghama 1	1991	Partial operation	9.00	4.00	11	6	Others Unknown				Stream	Witumba	Perennial	All year round	0
6	KR-8	Chifwa	North	Chitipa	Karonga	Chitipa	Misuku	Kaleghama 1	1998	Partial operation	12.00	5.00	16.0	9.0	Others Unknown				Stream	Chisansu	Perennial	All year round	0
7	KR-13	Malawa	North	Chitipa	Karonga	Chitipa	Chisenga	Malawa			2.00	1.00	19	19	HIPC		432	936	Stream	Malawa	Perennial		3
8	KR-14	Muthandizi	North	Chitipa	Karonga	Chitipa	Chisenga	Ibuluma	2001		3.00	3.00	1	1	HIPC		447	13	Stream	Muchenyenthe & Chambo	Perennial	January - December	
9	KR-26	Sanambe	North	Karonga	Karonga	Karonga	Karonga	kaphika	2002	Partial operation		9.00	8.0	18	Unknown	2150	620	8841	Stream	Sanambe	Perennial		3
10	KR-27	Zgangathuli	North	Karonga	Karonga	Karonga	Karonga south	Chagoma	1987	Partial operation	15.00	15.00	18.0	18	Unknown	1800	6122	8846	River	Wovwe	Perennial		5
11	KR-28	Kapyere Rice Irrigation Scheme	North	Karonga	Karonga	Karonga	Karonga south	Mtangala	1987	Partial operation	1.00	17.00	17	17	Unknown	1900	620	8845	River	Wovwe	Perennial		5
12	KR-29	Ighembe	North	Karonga	Karonga	Karonga	Karonga north	Benjamini Chawinga	1981	Partial operation	2.50	0.50	3	3	Self help				Stream	Ighembe	Perennial		
13	KR-30	Tiyane	North	Karonga	Karonga	Karonga	Kaporo	Chakwera	2002	Not operation		5.80	6	6	Unknown				River	Ngaramu	Perennial		
14	KR-31	Lyamayolo	North	Karonga	Karonga	Karonga	Kaporo north	Lyamayolo	1951	Partial operation	43.00	15.00	43	43					River	Kabale			5
15	KR-32	Timothy	North	Karonga	Karonga	Karonga	Kaporo north	Timothy	1950	Partial operation	20.00	15.00	20	20	Self help				Stream	Ngisi	Perennial		7
16	KR-37	Mkungwi	North	Karonga	Karonga	Karonga	Mpata	Mwebembe	1999	Partial operation	8.00	6.00	8	6	World Vision		925	978	Spring	Nyahango	Perennial		
17	MZ-14	Mbombozi	North	Nkhata-Bay	Mzuzu	Nkhata Bay	Mpamba	Mzimu	1997	Not Operational	2.5	3.0	9.0	15.0	Foreign government	1,850	11	34	River	Mbombozi river	Perennial	Year round	2.0
18	MZ-19	Mazembe Irrigation scheme	North	Nkhata bay-Bay	Mzuzu	Nkhata Bay	Chinthechei	Mphimbi	2002	Operational	0.4	0.0	15.0	12.0	H.I.P.C. fund		17	78	River	Dombola river	Perennial	Year round	4.0
19	MZ-20	Ntchete	North	Bay-Bay	Mzuzu	Nkhata Bay	Chinthechei	Kamika	1971	Not Operational			20.0	18.0	Self in the village		26	85	River	Ntchete river	Perennial	Year round	5.0
20	MZ-39	Chihanga	North	Rumphi	Mzuzu	Rumphi	Chiweta	Kayimange	2000-2001	Partially Operational		5.0			NGO/ self fund				River	Chitimba river	Perennial	Year round	8.0
21	MZ-40	Mankuli	North	Rumphi	Mzuzu	Rumphi	Chiweta	Mkuski	2000-2001	Operational	2.5	6.5	1.5	8.0	NGO/ self fund				River, Impounding dam	Mankuli river	Perennial	Year round	4.5
22	MZ-43	Kafukwe	North	Rumphi	Mzuzu	Rumphi	Mhuju	Jino	1995-1997	Partially Operational		5.0		10.0	Malawi government				Stream	Kafukwe stream	Perennial	Year round	5.0
23	MZ-95	Chotchanyumba	North	Mzimba	Mzuzu	Mzimba	Emsizini	Kamweko	1998		2.0	1.5	14.0	12.0					River	Chotchanyumba	Perennial	Year round	6.0
24	MZ-96	Kanajaha	North	Mzimba	Mzuzu	Mzimba	Emsizini	Aron soko	2002		2.0	10.0	12.0			4,200	33	11	River	Kanajaha river	Perennial	Year round	3.0
25	MZ-66	Kadawonda	North	Mzimba	Mzuzu	Mzimba	Zombwe	Chimbalamoyo	1999	Partially Operational		10.0		6.0	Self, Malawi government		599	8737	River	Lunyangwa river	Perennial	Year round	5.0
26	MZ-80	Champhako	North	Mzimba	Mzuzu	Mzimba	Njuyu	Chauluma mhango	1950	Partially Operational	10.0	15.0	12.0	18.0	European Union				Impounding dam, Groundwater	Champhako dam	Seasonal	Dec-Oct	
27	MZ-81	Kaviwowo	North	Mzimba	Mzuzu	Mzimba	Njuyu	Safari jere	1950	Partially Operational	6.0	12.0	10.0	15.0	German government				Impounding dam	Kaviwowo dam	Seasonal	Dec-Oct	
28	MZ-85	Kamalambo	North	Mzimba	Mzuzu	Mzimba	Champhila	Malepo/jenda	1998-2000	Partially Operational	40.0	30.0	50.0	45.0	Danida	365	4630	365	Impounding dam	Kamalambo dam	Perennial	Year round	
29	MZ-105	Kanyanje	North	Mzimba	Mzuzu	Mzimba	Manyamula	Katambalala phiri	1966	Partially Operational	0.5	3.0	4.0	6.0	Danida	850	691	468	Stream, Impounding dam	Kanyange dam	Perennial	Year round	4.0
30	MZ-113	Katope	North	Mzimba	Mzuzu	Mzimba	Bwengu	Matomora	1999	Operational	12.0	12.0	20.0	20.0	NGO (Word Vision)				River	Katope river	Perennial	Year round	4.0
31	MZ-132	Kasalu chikuyu	North	Mzimba	Mzuzu	Mzimba	Euthini	Tondo		Partially Operational		10.0	8.0	10.0		54	30	100	Dambo	Kasalu Chikuyu dambo	Seasonal		120.0
32	MZ-134	Muyehere	North	Mzimba	Mzuzu	Mzimba	Euthini	Mherere	1957	Partially Operational	10.0	8.0	14.0	11.0	Self fund	18	18	9	River	Mzambazi river	Seasonal		18.0
33	MZ-135	Katete	North	Mzimba	Mzuzu	Mzimba	Euthini	Mumba	1968	Operational	7.0	10.0	10.0	12.0	Self fund				River Impounding	Katete river	Seasonal		50.0
34	MZ-136	Jombo	North	Mzimba	Mzuzu	Mzimba	Euthini	Dolola	1955	Operational	8.0	6.0	5.0	3.0	Self fund	100	78	24	Impounding dam	Jombo dam			30.0
35	MZ-137	Mskete	North	Mzimba	Mzuzu	Mzimba	Mbalachanda	Mukwangwa	2002	Partially Operational	40.0	11.0	60.0	15.0	Self fund				Stream	Mskete stream	Seasonal	Dec-Sept	15.0
36	MZ-138	Chiwama	North	Mzimba	Mzuzu	Mzimba	Mbalachanda	Madede	1998	Not operation	5.0	9.0	23.0	30.0					Stream	Chant stream	Seasonal	Dec-Aug	2.0
37	MZ-155	Zolokere	North	Rumphi	Mzuzu	Rumphi	Katowo	Nkutamali	1998	Operational		1.5		3.0	Self fund				River	Hewe river	Perennial	Year round	7.0
38	MZ-156	Thamila	North	Rumphi	Mzuzu	Rumphi	Katowo	Thamila	1999	Partially Operational	4.0	4.0	4.0	4.0	Malawi government				River	Hewe river	Perennial	Year round	8.0
39	KU-1	Mwendamadzi	Central	Kasungu	Kasungu	Kasungu	Chamama	Mtekera	2002	Partially Operational	18.0	18.0	20.0	20.0	Self fund				River	Mwendamadzi river	Perennial	Year round	5.0
40	KU-2	Chilipa	Central	Kasungu	Kasungu	Kasungu	Chamama	Fow	2001	Partially Operational	0.8	7.5	4.0	8.0	Self fund				Stream	Chilipa stream	Seasonal	Nov-Sept	3.0
41	KU-3	Chiswamiyala	Central	Kasungu	Kasungu	Kasungu	Chamama	Chimwaye	2001	Partially Operational	7.6	9.0	12.0	12.0	NGO (World Vision)				River	Dwangwa river	Perennial	Year round	40.0
42	KU-4	Damba	Central	Kasungu	Kasungu	Kasungu	Chamama	Joolo	1997	Operational	20.0	20.0	38.0	38.0	Self fund				River	Damba river	Perennial	Year round	12.0
43	KU-5	Kuwanila	Central	Kasungu	Kasungu	Kasungu	Chamama	Chikuyu	2001	Operational	5.4	7.8	10.8	12.8	Self fund				Spring	Kawanila spring	Seasonal		5.0

(Existing Sites)

No	Site No.	1. Name of Site	2. Location						3. Year Built	4. Operation	5. Present Irrigated Area		6. Potential Area		7. Fund Source	8. Altitude			9. Source of Water	10. Name of River /Dam/Dambo	11. River Flow		12. Width of River
			Region	District	ADD	RDP	EPA	Village			Wet S. (ha)	Dry S. (ha)	Wet S. (ha)	Dry S. (ha)		(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
44	KU-6	Chamalaza	Central	Kasungu	Kasungu	Kasungu	Chamama	Chikoya	1998	Operational	20.0	20.0	23.0	23.0	Self fund				Stream	Chamalaza stream	Perennial	Year round	6.0
45	KU-7	Sambira	Central	Kasungu	Kasungu	Kasungu	Chamama	Sambiru	2000	Operational	12.0	18.0	12.0	18.0	Self fund				Stream	Damba stream	Seasonal	Dec-Oct	6.0
46	KU-16	Cholwe	Central	Kasungu	Kasungu	Kasungu	Chipala	Cholwe		Partially operational	8.0	10.0	6.5		Uknown				Groundwater		Perennial	Year round	
47	KU-17	Mdzunda	Central	Kasungu	Kasungu	Kasungu	Chipala	Mdzunda		Partially operational	6.0	4.0	8.0	10.0					Stream	Kakuyu stream	Perennial	Year round	4.0
48	KU-22	Chiwatsi	Central	Kasungu	Kasungu	Kasungu	Santhe	Chidzuma		Not	6.0	5.0	32.0	24.0	Uknown				River	Rusa river	Perennial	Year round	5.0
49	KU-23	Mkhota	Central	Kasungu	Kasungu	Kasungu	Santhe	Mkhota		Partially operational	12.0	8.0	6.0						River	Bua river	Perennial	Year round	12.0
50	KU-24	Kazimkambani	Central	Kasungu	Kasungu	Kasungu	Santhe	Kadzimkambani		Partially operational	14.0	6.0	5.0		International Bank				River	Bua river	Perennial	Year round	
51	KU-25	Chidoola	Central	Kasungu	Kasungu	Kasungu	Santhe	Chikoko		Partially operational	15.0	5.0			NGO				River	Bua river	Perennial	Year round	4.0
52	KU-32	Katambo	Central	Dowa	Kasungu	Dowa	Bowe	Katambo	1967	Not operational			5.0	7.0	Malawi government	4,000			Stream	Katambo dam	Seasonal	Jan-Mar	10.0
53	KU-38	Chiliwa	Central	Ntchisi	Kasungu	Ntchisi	Chipuka	Khoti	2000		6.1	11.3	10.4	15.8					River	Chiliwa river	Perennial	Year round	8.0
54	KU-39	Mpatsa	Central	Ntchisi	Kasungu	Ntchisi	Chipuka	Masinalo		Operational	9.4	14.3	13.9	16.7	Self fund					Kasangadzi	Perennial	Year round	
55	KU-40	Chikwatu	Central	Ntchisi	Kasungu	Ntchisi	Chipuka	Sibano		Partially operational	11.0	11.0	11.8	19.8	Self fund				River	Chikwalu river	Seasonal		3.0
56	KU-41	Chikhungwa	Central	Ntchisi	Kasungu	Ntchisi	Chipuka	Chikhungwa			10.3	20.3	16.9	23.6	Self fund					Mamina	Perennial	Year round	4.0
57	KU-42	Kasemwe	Central	Ntchisi	Kasungu	Ntchisi	Chipuka		1998	Operational	3.4	5.8	10.3	14.2	Self fund				River	Kasemwe river	Perennial	Year round	6.0
58	KU-43	Katope	Central	Ntchisi	Kasungu	Ntchisi	Chipuka	Simwaza	1999	Partially operational	0.8	2.0	3.5	4.2	Self fund				Stream	Katope stream	Perennial	Year round	3.0
59	KU-44	Mselembo	Central	Ntchisi	Kasungu	Ntchisi	Chipuka	Mselembo 1	2001	Partially operational	4.0	8.0	6.0	10.0	Self fund				River	Mamina river	Perennial	Year round	5.0
60	KU-45	Seza	Central	Ntchisi	Kasungu	Ntchisi	Chipuka	Seza	2000	Partially operational	2.8	2.8	3.4	5.6	Self fund				River	Mpherere river	Perennial	Year round	15.0
61	KU-46	Kachembele	Central	Ntchisi	Kasungu	Ntchisi	Chipuka	Chipolokazi	2001		1.1	3.1	2.6	5.4					River	Mamina river	Perennial	Year round	2.0
62	KU-47	Dwazi	Central	Ntchisi	Kasungu	Ntchisi	Chikwatula	Mphanda	2002	Operational	5.0	5.0	15.0	15.0	Self fund				River	Chafumbi river	Perennial	Year round	700.0
63	KU-48	Thendo	Central	Ntchisi	Kasungu	Ntchisi	Chikwatula	Thendo	2002	Operational	6.0	6.0	10.0	10.0	Self fund	1,200			Stream	Kapneno stream	Perennial	Year round	25.0
64	KU-49	Chabwinkha	Central	Ntchisi	Kasungu	Ntchisi	Chikwatula	Chabwinkha	1994	Operational	40.0	40.0	120.0	120.0	Self fund	1,300			River	Kapiripidzi river	Perennial	Year round	500.0
65	KU-50	Magwero a Bango	Central	Ntchisi	Kasungu	Ntchisi	Chikwatula	Mdakulenga	2002	Operational	3.0	3.0	5.0	5.0	Self fund	1,300			Impounding dam	Bango dam	Perennial	Year round	35.0
66	KU-51	Chafumbi	Central	Ntchisi	Kasungu	Ntchisi	Chikwatula	Mchere	2002	Partially operational	2.0	2.0	10.0	10.0	Self fund				River	Chafumbi river	Perennial	Year round	500.0
67	KU-53	Kaufa	Central	Ntchisi	Kasungu	Ntchisi	Malomo	Chapingama		Operational	0.5	2.5	4.5	12.0	Self fund	3,250	92	54	Impounding dam	Kaufa dam			
68	KU-54	Chitawotawo	Central	Ntchisi	Kasungu	Ntchisi	Malomo		2002		2.0	6.0	2.0	12.0		3,250	92	54	Spring				
69	KU-55	Mapasa	Central	Ntchisi	Kasungu	Ntchisi	Malomo	Mayende	New				7.5	15.0		4,350	96	42	Spring				
70	KU-56	Chilanga mwali 1	Central	Ntchisi	Kasungu	Ntchisi	Malomo			Operational	3.5	6.0	6.0	15.0		3,400	90	54	Spring	Chilangamwali spring			
71	KU-57	Kagumbwa	Central	Ntchisi	Kasungu	Ntchisi	Malomo	Kabvulala		Partially operational	0.2	0.4	0.5	13.0	Self fund	3,200	92	53		Kagumbwa Dambo	Perennial	Year round	
72	KU-58	Chilangamwali 2	Central	Ntchisi	Kasungu	Ntchisi	Malomo	Liwenga	2002		3.5	6.0	6.0	15.0	Self fund	3,500	90	54	Spring	Chilangamwali spring			
73	KU-59	Msambaimfa	Central	Ntchisi	Kasungu	Ntchisi	Kalira	Mnchila	2002	Partially operational		4.0		20.0	Self fund	1,450	E33-55	S13-28	Stream	Kala stream	Perennial	Year round	0.5
74	KU-60	Chandumba	Central	Ntchisi	Kasungu	Ntchisi	Kalira	Mbalame	2000	Operational	16.0	15.0	16.0	15.0	Self fund	4,500	35	187	River	Chandumba river	Perennial	Year round	15.0
75	KU-61	Mkuludzina	Central	Ntchisi	Kasungu	Ntchisi	Kalira	Kusa	2001	Operational	0.5	2.5	6.0	8.0	Self fund	5,100	980	160	Stream	Mkulumadzi stream	Perennial	Year round	
76	KU-62	Dwazi	Central	Ntchisi	Kasungu	Ntchisi	Kalira	Nyanga	2000	Operational	10.0	8.0	30.0	10.0	Self fund	4,750	68	215	River	Dwazi river	Perennial	Year round	5.0
77	KU-67	Chimsolo	Central	Dowa	Kasungu	Dowa	Mvera	Simpha	2000	Partially operational	1.0	8.0	5.0	15.0	Self fund				Impounding dam	Lowi river	Perennial	Year round	10.0
78	KU-68	Tikolole	Central	Dowa	Kasungu	Dowa	Mvera	Fandani		Partially operational		2.0		10.0	Self fund	1,150	E34-01	S13-44	Stream	Fumbwe	Perennial	Year round	12.0
79	KU-69	Kakule	Central	Dowa	Kasungu	Dowa	Mvera	Ngwere			2.0	4.0	7.0	11.0					Stream	Kakule stream	Perennial	Year round	5.0
80	KU-70	Mkundi	Central	Dowa	Kasungu	Dowa	Mvera	Chimphiri			2.0	3.0	8.0	8.0					River	Luje river	Perennial	Year round	
81	KU-71	Tiyesele	Central	Dowa	Kasungu	Dowa	Mvera	Chikuse		Partially operational	2.0	1.2	3.0	16.0	Self fund				River	Katete river	Perennial	Year round	5.0
82	KU-72	Makaka	Central	Dowa	Kasungu	Dowa	Mvera	Eliya	2000		0.4	3.0	1.0	12.0					Stream	Makaka stream	Perennial	Year round	10.0
83	KU-73	Lufe	Central	Dowa	Kasungu	Dowa	Mvera	Chiudza		Partially operational	3.0	1.5	8.0	15.0	Self fund				River	Lufe river	Perennial	Year round	8.0
84	KU-74	Kambwale	Central	Dowa	Kasungu	Dowa	Mvera	Mwasangu		Partially operational	3.0	12.0	15.0	9.0	Self fund				Impounding dam	Kambwale Dambo	Perennial	Year round	3.0
85	KU-75	Msipe	Central	Dowa	Kasungu	Dowa	Mvera	Kambulire		Not			4.0	4.0					Stream	Msipe stream	Perennial	Year round	10.0
86	KU-76	Titukulane	Central	Dowa	Kasungu	Dowa	Nachisaka	Kalikwembe	2002	Operational		12.0		16.0	Malawi government	1,350			River	Uzami river	Perennial	Year round	11.0
87	KU-78	Msakanena-Chiluwa	Central	Dowa	Kasungu	Dowa	Nachisaka	Khomani-Malipa	2001	Partially operational		8.2			Self fund				River	Msakanena-Chiluwa river	Perennial	Year round	8.0
88	KU-84	Kaseleka	Central	Dowa	Kasungu	Dowa	Mndolera	Kaseleka	Unkno wn	Not operational	40.0	3.0	65.0	16.0	Malawi government				River	Kaseleka dam	Perennial	Year round	400.0
89	KU-85	Namilulu	Central	Dowa	Kasungu	Dowa	Mndolera	Tsalakunja			36.0	12.0	78.0	45.0	Malawi government					Mazi dam	Seasonal	Dec-Sept	
90	KU-105	Kaseleka	Central	Dowa	Kasungu	Dowa	Mponela	Teweza	Betwee n1960 &1970	Not operational	Nil	Nil			Malawi government				Stream	Kaseleka stream	Seasonal		50.0
91	KU-116	Chimkhomo	Central	Mchinji	Kasungu	Mchinji	Mlonyeni	Chamveka	2001	Partially operational	1.6	2.4	8.0	12.0	Self fund				River	Bua river	Perennial	Year round	10.0
92	KU-117	Chikadza	Central	Mchinji	Kasungu	Mchinji	Mlonyeni	Chikadza		Partially operational	15.0	8.0	35.0	15.0	Self fund				Steam	Namilolo stream	Perennial	Year round	10.0
93	KU-121	Kamwankhuku	Central	Mchinji	Kasungu	Mchinji	Chioshya	Mateyo	2002	Partially operational	10.0	6.0	8.0	5.0	Self fund				Ground Water	Kamwankhuku Dambo		Dec-May	10.0

(Existing Sites)

No	Site No.	1. Name of Site	2. Location						3. Year Built	4. Operation	5. Present Irrigated Area		6. Potential Area		7. Fund Source	8. Altitude			9. Source of Water	10. Name of River /Dam/Dambo	11. River Flow		12. Width of River
			Region	District	ADD	RDP	EPA	Village			Wet S. (ha)	Dry S. (ha)	Wet S. (ha)	Dry S. (ha)		(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
94	KU-123	Kakoma	Central	Mchinji	Kasungu	Mchinji	Chioshya	Mphasa& Ndawala	1960	Not operational	Nil	10.0	25.0	15.0	Self fund				Impounding dam	Kakoma Dambo	Seasonal	Dec-July	3.0
95	KU-124	Ludzi	Central	Mchinji	Kasungu	Mchinji	Chioshya	Pototazio/Chisaka	2002	Operational	12.0	10.0	18.0	15.0	Self fund				Spring	Ludzi spring	Perennial	Year round	
96	KU-125	Ludzi	Central	Mchinji	Kasungu	Mchinji	Chioshya	Kaballa	2002	Partially operational	10.0	10.0	15.0	15.0	Malawi government				River	Ludzi river	Perennial	Year round	150.0
97	KU-130	Chatuwa	Central	Mchinji	Kasungu	Mchinji	Kalulu	Chimutu	2002	Partially operational	10.0	15.0	25.0	20.0	Self fund		45	920	River/Impoundi ng dam	Nthumbule river	Perennial	Year round	150.0
98	KU-131	Kaluwira	Central	Mchinji	Kasungu	Mchinji	Kalulu	Kaluwira	2002		4.0	6.0	8.0	16.0	Malawi government				River	Rusa river	Seasonal	Jan-Mar	30.0
99	KU-134	Kapotwe/Mbedza	Central	Mchinji	Kasungu	Mchinji	Kalulu	Kapotwe/Mbedza	2002	Partially operational	8.0	12.0	8.0	8.0	Malawi government					Mtombodzi	Perennial	Year round	5.0
100	KU-144	Samphala Channel II	Central	Mchinji	Kasungu	Mchinji	Mkanda	Samphala	2002	Operational	11.0	4.3	10.0	7.0	HIPC				River	Luweledzi river	Perennial	Year round	5 to 10
101	KU-145	Chisauka	Central	Mchinji	Kasungu	Mchinji	Mkanda	Chisauka	2002		2.0		3.0	5.0	Malawi government				River	Matizi river	Perennial	Year round	5.0
102	KU-149	Mtenthela	Central	Mchinji	Kasungu	Mchinji	Mkanda	Mpazi	2002	Partially operational	4.7	8.0	3.7	5.0	Malawi government				River	Liwelezi	Perennial	Year round	8.0
103	SA-23	Msenjere	Central	Salima	Salima	Salima	Khombedza	Mwadyakale	2000	Partially operational	5.0	5.0	9.0	6.0	Self fund				Stream	Msenjere stream	Seasonal	Dec-Sept	2.0
104	SA-24	Liwadzi	Central	Salima	Salima	Salima	Khombedza	Chimpala	2000	Partially operational	5.0	5.0	8.0	8.0	Self fund				River	Liwadzi river	Perennial	Year round	1.5
105	SA-34	Mchololo	Central	Salima	Salima	Salima	Chipoka	Mwenyekazi	2002	Partially operational	12.0	12.0	20.0	20.0	Self fund		504	588	River	Mchololo river	Perennial	Year round	8.0
106	SA-35	Ulimi Nkuonela	Central	Salima	Salima	Salima	Chipoka	Chilambula	1980	Not		4.0	8.0	4.0	ADMARC	1,600	653	453	River	Ngodzi river	Seasonal	Nov-Oct	8.0
107	SA-39	Mkundi	Central	Salima	Salima	Salima	Tembwe	Chimombo	2002	Operational	0.5	0.5	6.0	6.0	Self fund				River	Nagwamyanje river	Perennial	Year round	4.0
108	SA-40	Mwatambalala	Central	Salima	Salima	Salima	Tembwe	Nkhangayawala	1999	Partially operational	0.8	0.8	6.6	6.6	Self fund				River	Mwatambalala river	Perennial	Year round	3.5
109	LL-9	Mphetsankhuli	Central	Lilongwe	Lilongwe	Lilongwe West	Ukwe	Mphetsankhuli	Just starting	Partially Operational		3.0	5.0	18.0	African Development Bank				River/Impoundi ng dam	Kalambe river	Seasonal	Nov-May	6.0
110	LL-15	Mandala	Central	Lilongwe	Lilongwe	Lilongwe West	Ming'ong'o	Mandala	2002	Partially Operational	12.0	8.0	5.0	10.0	NGO (Care International)				River	Flat river	Perennial	Year round	150.0
111	LL-16	Mnyaika	Central	Lilongwe	Lilongwe	Lilongwe West	Ming'ong'o	Mnyaika	1990	Operational	5.0	15.0	5.0	13.0	Self fund				Spring	Kakoma spring	Seasonal	Dec-Apr	3.0
112	LL-20	Likuni	Central	Lilongwe	Lilongwe	Lilongwe West	Mpingu	Msija	2002		35.0	80.0	74.0	92.0	Self fund				River	Likuni river	Perennial	Year round	950.0
113	LL-21	Kafinya	Central	Lilongwe	Lilongwe	Lilongwe West	Mpingu	Kaduwa	2002	Partially Operational	5.0	15.0	15.0	20.0					Stream & groundwater	Kafinya & Chivite river	Perennial	Year round	700.0
114	LL-26	Kadamsana	Central	Lilongwe	Lilongwe	Lilongwe West	Thawale	Beni & Dzoole	1982	Partially Operational	10.4	14.6	17.7	19.8	Self fund				River	Diamphwi river	Perennial	Year round	3.0
115	LL-27	Chimzinga	Central	Lilongwe	Lilongwe	Lilongwe West	Thawale	Tailosi	1980	Partially Operational	9.2	8.0	17.0	17.0					River	Lilongwe river	Perennial	Year round	3.0
116	LL-40	Tsokole	Central	Lilongwe	Lilongwe	Lilongwe West	Chileka	Chadza	1997	Operational	12.0	18.0	40.0	40.0	Self fund				Spring	Tsokole spring	Seasonal	Dec-July	
117	LL-42	Namitete	Central	Lilongwe	Lilongwe	Lilongwe West	Chileka	Mwandauka	1963	Operational	8.4	20.0	15.5	30.0					Spring	Namitete spring	Perennial	Year round	
118	LL- 44	Kakuyu	Central	Lilongwe	Lilongwe	Lilongwe West	Chileka	Mozesi	1960	Operational	4.0	18.0	4.2	18.0					Groundwater	Kakuyu			
119	LL-55	Ndalama	Central	Lilongwe	Lilongwe	Lilongwe West	Mwala Nthondo	Ndalama	2001	Operational	9.0	7.0	11.0	11.0	NGO (Care International)				Groundwater	Mwala	Seasonal	Dec-Mar	6.0
120	LL-69	Nankhanga	Central	Lilongwe	Lilongwe	Lilongwe East	Chiwamba	Elias Msambo	2001	Operational	3.0	1.2	5.0	2.0					Stream	Nankhanga stream	Perennial	Year round	7.0
121	LL-70	Mgototo	Central	Lilongwe	Lilongwe	Lilongwe East	Chiwamba	Malumbila	2002	Operational	7.0	3.0	7.0	5.0	Self fund				Stream	Katete stream	Perennial	Year round	4.0
122	LL-74	Diamphwe	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Chisindo	1992	Not operational			4.0	4.0	Israel & USA				River	Diamphwe & Linthipe river	Perennial	Year round	25.0
123	LL-75	Mchenga Linthipe	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Gwenembe	1994	Not			6.0	6.0	DANIDA				River	Linthipe river	Perennial	Year round	70.0
124	LL-81	Kanthumbi	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Khongo	2001	Operational	2.6	3.2	8.4	10.0	NGO (Care International)				Impounding dam	Khongo dam	Seasonal	Nov-Aug	15.0
125	LL-82	Kambiri	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Chabwe	2002	Operational	12.0	8.0	7.0	5.0	European Union				Impounding dam	Chikhutu dam			
126	LL-86	Kamtenga	Central	Lilongwe	Lilongwe	Lilongwe East	Chitsime	Mbewa	2002	Operational	4.0	4.0	8.0	8.0	ACORD				Stream	Kantenga stream	Seasonal	Nov-Sept	30.0
127	LL-87	Chambwe	Central	Lilongwe	Lilongwe	Lilongwe East	Chitsime	Chambwe	2002	Operational	3.0	3.0	4.0	4.0	ACORD				River	Nanjiri river	Perennial	Year round	8.0
128	LL-88	Mtuwambalame	Central	Lilongwe	Lilongwe	Lilongwe East	Chitsime	Nyemba II	2001	Operational	1.5	1.5	3.0	3.0	Self fund				River	Nanjiri river	Perennial	Year round	10.0
129	LL-91	Kalele	Central	Lilongwe	Lilongwe	Lilongwe East	Nyanja	Mambala	2001	Partially operational	12.8	5.2	12.8	5.2			601	8436	Stream	Namikoko stream	Perennial	Year round	
130	LL-100	Kapeni	Central	Lilongwe	Lilongwe	Lilongwe East	Mpenu	Magombe	2001	Partially operational		3.5		3.0	Self fund				River	Kapeni river	Seasonal	Jan-Oct	10.0
131	LL-101	Mtonjovu	Central	Lilongwe	Lilongwe	Lilongwe East	Mpenu	Kaphadamchenba	2002	Partially operational		3.0		6.5	Self fund	1,060	E33-56	S14-02	Stream	Mtonjovu stream	Perennial	Year round	13.0
132	LL-102	Chitumbi	Central	Lilongwe	Lilongwe	Lilongwe East	Mpenu	Saopa	200	Operational	4.0		3.0		Self fund				Stream	Machule stream	Seasonal	Jan-Sept	10.0
133	LL-103	Ngoni I	Central	Lilongwe	Lilongwe	Lilongwe East	Mpenu	Kufakwaanthu	2002	Partially operational	4.0	4.0	1.5	1.5	Self fund				Stream	Nanjiri stream	Seasonal	Jan-Sept	10.0
134	LL-115	Chibvulu-bvulu	Central	Dedza	Lilongwe	Thiwi- Lifidzi	Kabwazi	Kamkodola		Not operational	0.5	3.4	1.5	5.0	Foreign government				Stream	Chibvulu-bvulu stream	Seasonal	Dec-Sept	4.0
135	LL-116	Mwayiwathu	Central	Dedza	Lilongwe	Thiwi- Lifidzi	Kabwazi	Chinichi	2001	Partialy operational	0.3	1.5		1.8	Malawi government				Stream	Kamphemba stream	Seasonal	Dec-June	3.0
136	LL-120	Chitimbe	Central	Dedza	Lilongwe	Thiwi- Lifidzi	Linthipe	Chitimbe	1999 / 200	Partialy operational	10.0	8.0	8.0	5.0	SHDI				River/Impoundi ng dam	Thiwi river	Perennial	Year round	
137	LL-125	Kakolo	Central	Dedza	Lilongwe	Dedza Hills	Kaphuka	Chikwasa	2001	Operational	15.0	8.0	10.0	8.0	Self fund				Stream	Kakolo stream	Seasonal	Jan-Oct	3.0
138	LL-126	Chandwe	Central	Dedza	Lilongwe	Dedza Hills	Kaphuka	Kaphuka	1999	Operational	12.0	5.0	8.0	5.0	Self fund				Stream	Chandwe stream	Perennial	Year round	5.0
139	LL-130	Mkantha	Central	Dedza	Lilongwe	Dedza Hills	Mayani	Chembe	1999 / 2000	Partialy operational	1.5	2.5	3.0	4.0	Self fund				Stream	Mkantha stream	Perennial	Year round	25.0
140	LL-141	Windu	Central	Dedza	Lilongwe	Dedza Hills	Kanyama	Thundu	1998	Operational		16.5	30.0	19.0	Self fund		641	8428	Stream	Windu stream	Perennial	Year round	1.0
141	LL-142	Mtengeza	Central	Dedza	Lilongwe	Dedza Hills	Kanyama	Thomo	1964	Operational	16.0	16.0	16.0	18.0	Self fund		640	8425	Stream	Mtengeza stream	Perennial	Year round	8.0
142	LL-146	Chejero	Central	Dedza	Lilongwe	Dedza Hills	Golomoti	Chejero	2002	Not operational			10.0	10.0	Malawi government				Lake	Lake Malawi	Perennial	Year round	
143	LL-147	Msungo	Central	Dedza	Lilongwe	Dedza Hills	Golomoti	Store I	2001	Operational	15.0		20.0		Self fund				Stream	Nambuna stream	Seasonal	Dec-Aug	6.0
144	LL-148	Chimwankuku	Central	Dedza	Lilongwe	Dedza Hills	Golomoti	Thuliza	2002			1.0		4.0	Self fund				River	Livulezi river	Perennial	Year round	15.0
145	LL-151	Nachilambo	Central	Dedza	Lilongwe	Dedza Hills	Bembeke	Kalilombe	1998		6.0	8.0	10.0	19.0	DANIDA	52,100	52	8	Dambo	Nachilambo dambo	Seasonal	Jan-Feb	3.0

(Existing Sites)

No	Site No.	1. Name of Site	2. Location						3. Year Built	4. Operation	5. Present Irrigated Area		6. Potential Area		7. Fund Source	8. Altitude			9. Source of Water	10. Name of River /Dam/Dambo	11. River Flow		12. Width of River
			Region	District	ADD	RDP	EPA	Village			Wet S. (ha)	Dry S. (ha)	Wet S. (ha)	Dry S. (ha)		(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
146	LL-152	Nachilambo	Central	Dedza	Lilongwe	Dedza Hills	Bembeke	Kauve	1998		0.8	5.0	9.0	12.0	DANIDA	5,100	51	12	Dambo	Nachilambo dambo	Seasonal	Jan-Feb	3.0
147	LL-154	Nachilambo	Central	Dedza	Lilongwe	Dedza Hills	Bembeke	Chimlambe	1998		6.0	8.0	10.0	10.0	DANIDA	5,200	51	09	Dambo	Nachilambo dambo	Seasonal	Jan-Feb	4.0
148	LL-155	Nachilambo	Central	Dedza	Lilongwe	Dedza Hills	Bembeke	Kantande		Operational	1.0	3.8	10.0	15.2	DANIDA	5,100	91	09	Dambo	Nachilambo dambo	Seasonal	Jan-Feb	3.0
149	LL-156	Chimvu	Central	Ntcheu	Lilongwe	Ntcheu	Nsipe	Dambule	1949	Partialy operational	19.0	17.0	20.0	18.0	Malawi government	880	689	8344	Impounding dam	Chimvu dam	Seasonal	Jan-Sept	4.0
150	LL-157	Zipilana	Central	Ntcheu	Lilongwe	Ntcheu	Nsipe	Zipilana	2001	Operational		6.0		10.0	Self fund	1,550	73	51	River	Mpira & Livinvi	Perennial	Year round	8.0
151	LL-158	K.Mpakiza	Central	Ntcheu	Lilongwe	Ntcheu	Nsipe	K. mpakiza	1997	Operational		8.0		15.0	Self fund	700	97	54	River	K.mpakiza river	Perennial	Year round	
152	LL-159	Namphwate	Central	Ntcheu	Lilongwe	Ntcheu	Nsipe	Nenekeza	1994	Operational		4.0		10.0	Self fund	1,000	64	80	Stream	Namphwate stream	Seasonal	Dec-Sept	10.0
153	LL-160	Katsake	Central	Ntcheu	Lilongwe	Ntcheu	Nsipe	Ndembo	1995	Operational		10.5		11.0	Self fund	1,080	86	57	Groundwater	Katsake	Seasonal	Mar-Aug	15.0
154	LL-161	Chikombora	Central	Ntcheu	Lilongwe	Ntcheu	Nsipe	Kamwendo	1990	Operational		3.0		10.0		1,210	79	64	Groundwater	Chikombola	Seasonal	Dec-Nov	5.0
155	LL-162	Bawi	Central	Ntcheu	Lilongwe	Ntcheu	Nsipe	Manjawira	Adamu	Operational	12.0	10.0	20.0	20.0	Self fund	800	95	8354	River	Bawi river	Perennial	Year round	5.0
156	LL-176	Michedwe	Central	Ntcheu	Lilongwe	Ntcheu	Tsangano	Undani	1999	Operational	12.0	8.2	16.0	12.0	Self fund	1,420	679	8333	River	Michedwe river	Perennial	Year round	4.0
157	LL-177	Lilankhunda	Central	Ntcheu	Lilongwe	Ntcheu	Tsangano	Kakhobwe	1999	Operational		4.2		16.0	Self fund	1,680	676	8333	Stream	Satemwa stream	Perennial	Year round	6.0
158	LL-178	Mwachetsa	Central	Ntcheu	Lilongwe	Ntcheu	Tsangano	Kabango 1	1999	Operational	15.0	15.0	19.0	19.0	Self fund	1,380	677	8323	Dam	Mwachedwa dam	Perennial	Year round	5.0
159	LL-179	Chinseche	Central	Ntcheu	Lilongwe	Ntcheu	Tsangano	Kankhuni II	1986	Operational	18.0	18.0	20.0	20.0	Self fund	1,520	674	8324	River	Chiseche river	Perennial	Year round	15.0
160	LL-180	Nsaluziwiri	Central	Ntcheu	Lilongwe	Ntcheu	Tsangano	Kabango II	2001	Operational	15.0	15.0	20.0	20.0	Self fund	1,320	675	8327	River	Nansenga river	Perennial	Year round	10.0
161	LL-181	Nakopela	Central	Ntcheu	Lilongwe	Ntcheu	Kandeu	Msungo	2002	Operational	3.0	3.0	10.0	10.0	Self fund	945	684	8376	River	Makopolela river	Perennial	Year round	4.0
162	LL-182	Mtendedzi	Central	Ntcheu	Lilongwe	Ntcheu	Kandeu	Zintambira	1996	Operational	6.0	10.0	20.0	20.0	Self fund	825	665	8399	River	Mtendedzi river	Perennial	Year round	25.0
163	LL-183	Chauluka	Central	Ntcheu	Lilongwe	Ntcheu	Kandeu	Chauluka	2000	Operational	19.0	19.0	78.0	50.0	Self fund	960	672	8378	River	Mponda river	Perennial	Year round	12.0
164	LL-184	Chiwisi	Central	Ntcheu	Lilongwe	Ntcheu	Kandeu	Katsense	2002	Operational	8.0	8.0	18.0	18.0	Self fund	915	671	8382	River	Kathadzi river	Perennial	Year round	6.0
165	LL-186	Bwembe	Central	Ntcheu	Lilongwe	Ntcheu	Sharpevale	Salota	2002	Not	6.0	6.0	12.0	8.0	Self fund				Spring	Bwembe spring	Perennial	Year round	3.0
166	LL-187	Mpemba	Central	Ntcheu	Lilongwe	Ntcheu	Sharpevale	Zalengera	2002	Not	12.0	10.0	20.0	12.0	Self fund				Spring	Mpemba spring	Perennial	Year round	2.0
167	LL-188	Mawira	Central	Ntcheu	Lilongwe	Ntcheu	Sharpevale	Mawira	2002	Not	5.0	3.0	10.0	8.0	Self fund				Spring	Mawira spring	Perennial	Year round	0.5
168	MHG-12	Chiulika	South	Mangochi	Machinga	Mangochi	Lungwenya	Kadango	2001	Operational	1.3	1.3	2.5	1.8	NGO				Spring, groundwater	Chiulika spring	Perennial	Year round	
169	MHG-17	Mangani	South	Mangochi	Machinga	Mangochi	Nankumba	Makumba	2002	Operational	40.0	40.0	45.0	60.0	Mmalawi government		932	4	Spring	Namichimba & Tsekwele river	Perennial	Year round	10.0
170	MHG-18	Kabunila	South	Mangochi	Machinga	Mangochi	Nankumba	Saidi Matope	2002	Not operational	25.0	20.0	25.0	20.0	Malawi government		933	46	Impounding dam	Kabudila dam	Seasonal	March	2.0
171	MHG-22	Nakatete	South	Mangochi	Machinga	Mangochi	Masuku	Kwilindi	1986	Partially operational	10.0	9.0	10.0	9.0	Self fund				Groundwater	Nakatete	Perennial	Year round	7.0
172	MHG-33	Msenjere	South	Mangochi	Machinga	Mangochi	Mthilmanja	Machenje	1998		0.8	2.5	3.5	4.0	Mangochi RDP office				River	Nasenga river	Perennial	Year round	10.0
173	MHG-75	Nkhande	South	Machinga	Machinga	Machinga	Nsanama	Khuzumba	1998	Operational	18.0	10.0	20.0	20.0	Self fund				Stream	Nkhande stream	Seasonal	Dec-Oct	46.0
174	MHG-77	Sambuzi	South	Machinga	Machinga	Machinga	Nsanama	Lukongolo	2002	Operational	1.0	1.0	5.0	5.0	Self fund				Stream	Sambuzi stream	Perennial	Year round	0.5
175	MHG-79	Sukambale	South	Machinga	Machinga	Machinga	Nampeya	Machepa	2002	Operational		1.2	10.0	10.0	Self fund				Stream	Mpiri stream	Seasonal	Dec-Sept	10.0
176	MHG-82	Kanjeza	South	Machinga	Machinga	Machinga	Nampeya	Matola	2002	Operational		0.3	6.0	6.0	Malawi government		8359	790	Stream	Sankhwi stream	Seasonal	Dec-Oct	7.0
177	MHG-85	Chikuluma	South	Machinga	Machinga	Machinga	Mbonekera	Chikuluma	1984	Partially operational	18.9	2.8	20.0	13.4	Self fund				River	Masanje river	Perennial	Year round	5.0
178	MHG-93	Lingoni Irrigation	South	Machinga	Machinga	Machinga	Mtubwi	Sawawa	2002	Operational	12.0	12.0	12.0	12.8	Self fund		625	212	River	Lingoni river	Perennial	Year round	5.0
179	MHG-99	Makwemba	South	Machinga	Machinga	Machinga	Nanyumbu	Makwemba	1998	Partially operational	18.0	3.0	20.0	20.0	Self fund				River	Naming'azi river	Seasonal	September	
180	MHG-100	Naming'azi	South	Machinga	Machinga	Machinga	Nanyumbu	Chitundu	1979	Partially operational	240.0	18.0	40.0	40.0	Self fund				River	Naming'azi river	Seasonal	September	100.0
181	MHG-	Maganga	South	Machinga	Machinga	Machinga	Nanyumbu	Suwedi	2001	Not	8.0	20.5	20.5	8.0	Self fund				River	Naming'azi river	Seasonal	September	7.0
182	MHG-102	Mikoko	South	Machinga	Machinga	Machinga	Nanyumbu		1986	Partially operational	45.0		100.0		Self fund				River	Mikoko river	Seasonal	August	10.0
183	MHG-111	Tinyade	South	Zomba	Machinga	Zomba	Thondwe	Mainga	1996	Operational	12.0	12.0	15.0	15.0	Self fund				Impounding dam/river/stream	Linjidzi river	Perennial	Year round	
184	MHG-	Misenjele	South	Zomba	Machinga	Zomba	Thondwe	Chilongo	1981	Operational		10.0	5.0	25.0	Self fund				Groundwater		Perennial	Year round	
185	MHG-113	Namakungwa	South	Zomba	Machinga	Zomba	Thondwe	Chipande	1984	Operational		15.0	15.0	25.0					Stream	Namakungwa stream	Perennial	Year round	
186	MHG-	Linjidzi	South	Zomba	Machinga	Zomba	Thondwe	Kunsiya	1996			32.0	32.0	40.0	40.0	Self fund			River		Perennial	Year round	3.0
187	MHG-137	Katunga	South	Zomba	Machinga	Zomba	Dzaone	Katunga	1978	Partially oparational	12.0	12.0	30.0	18.0					Impounding dam / groundwater		Seasonal	Nov-Sept	50.0
188	MHG-138	Malunguni Dam	South	Zomba	Machinga	Zomba	Dzaone	Ntholowa	1979	Partially operational	30.0	30.0	35.0	48.0					Dam/dambo				70.0
189	BLT-1	Mkadziwandani	South	Neno	Blantyre	Neno	Neno	Kamoto	2000	Oparation	0.40	0.60	1	3	Self fund	2500	74	96	Stream	Msekani	Perennial		5
190	BLT-2	Makungwa	South	Neno	Blantyre	Neno	Neno	Kamoto	2001	Oparation	5.00	4.00	7	12	Self fund	2750	74	96	Stream	Chitika	Perennial	All year	4
191	BLT-3	Nanjiwa	South	Neno	Blantyre	Neno	Neno	Kamoto	2001	Oparation	3.00	6.00	5	9	Self fund	2750	74	96	Stream	Nanjiwa	Perennial		5
192	BLT-4	Tsemberani	South	Neno	Blantyre	Neno	Neno	Tsemberani	2003	Oparation		0.50		2	CADECOM	3250	71	96	Stream	Chikwere	Perennial		7
193	BLT-6	Kungubwi	South	Mwanza	Blantyre	Mwanza	Mwanza	Kasuza	2002		2.60	2.60	6	4	Self fund				river	Kungubwi	Perennial		2
194	BLT-7	Thethula Irrigation Scheme	South	Mwanza	Blantyre	Mwanza	Mwanza	Kapise	2002		5.00	5.00	5.0	5.0	Self fund				Stream		Perennial		2
195	BLT-8	Nkantho	South	Mwanza	Blantyre	Mwanza	Mwanza	Kasuza	2002	Operation	6.00	6.00	10	10	Self fund				river	Nkantho	Perennial		15
196	BLT-11	Tiyanjane Irrigation Scheme	South	Mwanza	Blantyre	Mwanza	Thambani	Eneko	2000	Oparation	0.40	0.40	2	2	Malawi government				Stream	Jerejere	Perennial		2
197	BLT-12	Nsungwi 6	South	Mwanza	Blantyre	Mwanza	Thambani	Kallma	2002	Oparation	0.40	0.40	1.0	1	Self fund				river	Ngona	Perennial	Jan - Dec	10
198	BLT-14	Namitembe Irrigation Scheme	South	Mwanza	Blantyre	Mwanza	Thambani	Tsegulani	1999	oparation	3.00	2.00	6.0	6	ACTION AID				Stream	Namitembe	Perennial		1 to 2
199	BLT-16	Zalewa	South	Neno	Blantyre	Neno	Lisungwi	Zalewa	2000	partial oparation	4.00	2.50	4	4	Self fund	1200	99	90	river	Shire	Perennial	All year	400
200	BLT-20	Namwiri	South	Blantyre	Blantyre	Blantyre	Chipande	Maleule	1958	partial oparation	1.50	0.50	4	5	Self fund				Impounding dam	Namwiri dam	Perennial		1900/2/19
201	BLT-21	Matindi Irrigation	South	Blantyre	Blantyre	Blantyre	Chipande	Kajawo	2001	partially operation	3.00	1.00		2	Self fund			176746	river	Matindi river	Perennial		3
202	BLT-22	Mvoniha	South	Blantyre	Blantyre	Blantyre	Chipande	Puledi	1958	partially operation	1.00	0.02	2	3	Self fund			255980	Impounding dam	Mvoniha	Perennial		60
203	BLT-23	Namanjambo	South	Blantyre	Blantyre	Blantyre	Chipande	Masilikali	1998	Oparation	0.40	0.40	0	0	Self fund	3	3	1	Stream	Namatambo stream	Perennial		3

(Existing Sites)

No	Site No.	1. Name of Site	2. Location						3. Year Built	4. Operation	5. Present Irrigated Area		6. Potential Area		7. Fund Source	8. Altitude			9. Source of Water	10. Name of River /Dam/Dambo	11. River Flow		12. Width of River
			Region	District	ADD	RDP	EPA	Village			Wet S. (ha)	Dry S. (ha)	Wet S. (ha)	Dry S. (ha)		(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
204	BLT-29	Milala Irrigation Scheme	South	Blantyre	Blantyre	Blantyre	Kunthembwe	Teula	1960-61	Oparation	10.00	5.00	10	5	Malawi government	2350	98	733	Impounding dam	Milala	Perennial		40
205	BLT-39	Malele Richadi	South	Chiradzulu	Blantyre	Chiradzulu	Thumbwe	Malele	years ago	Oparartion	3.00	4.00	3	5	Self fund				Stream	Richard	Perennial	January	30.00
206	BLT-40	Masalani	South	Chiradzulu	Blantyre	Chiradzulu	Thumbwe	Chikwakwata	years ago	Operation	2.00	3.00	1	4	Self fund	746	8259		River	Masalani	Perennial	January	40.00
207	BLT-41	Malangalanga	South	Chiradzulu	Blantyre	Chiradzulu	Thumbwe	Witika		Operation		1.00	8	5	Self fund				river	Malagalanga	Seasonal	January - February	30.00
208	BLT-42	Mangulama	South	Chiradzulu	Blantyre	Chiradzulu	Thumbwe	Mangulama	years ago	Operation	3.00	5.00	5	3	Self fund				Stream	Namitembe	Seasonal	January	40.00
209	BLT-43	Namulu	South	Chiradzulu	Blantyre	Chiradzulu	Thumbwe	Namulu	1999	Operation	5.00	10.00	5.0	15	Self fund				River	Namiseche	Seasonal	December - March	30.00
210	BLT-44	Sabuni	South	Chiradzulu	Blantyre	Chiradzulu	Thumbwe	Sabuni		Opparation	2.00	3.00	3	4	Self fund				River	Chimwawa	Seasonal	January	40
211	BLT-45	Mtikhe	South	Mulanje	Blantyre	Mulanje	Milonde	Mtikhe	2001		22.00	10.00	15	10	OXFAM				River	Muloza	Perennial		18
212	BLT-57	Khokhoriwa	South	Mulanje	Blantyre	Mulanje	Kamwendo	Khokhoriwa			1.50	1.50	5.0	5.0	Self fund				Stream	Phalombe			12
213	BLT-58	Chisawani	South	Mulanje	Blantyre	Mulanje	Kamwendo	Chitimbe	1999	partial oparation	2.50	2.50	6	6	Malawi government				river	Thuchira	Perennial		
214	BLT-59	Sadibwa	South	Mulanje	Blantyre	Mulanje	Kamwendo	Sadibwa	1996	partial oparation	2.50	2.50	3	6	NGO				river	Thuchira	Perennial		10
215	BLT-62	Chaoneka	South	Thyolo	Blantyre	Thyolo	Masambanjati	Chaoneka	2002	partial oparation		0.60	10	2	Self fund		249	105	Stream	Namulenga stream	Perennial	Through out	2
216	BLT-63	Nambuna	South	Thyolo	Blantyre	Thyolo	Masambanjati	Kuweluza	2003	Oparation		1.20	5.0	3.0	Self fund		275	53	Stream	Nambuna	Perennial		2
217	BLT-64	Madalitso Nambuzi	South	Thyolo	Blantyre	Thyolo	Masambanjati	Changata	2001	Oparation		10.50	8	12	Self fund		305	205	Stream	Nambuzi 11	Perennial		2
218	BLT-80	Ngwirizano	South	Thyolo	Blantyre	Thyolo	Khonjeni	Ngamwani 11	20003	partial oparation		5.00		6	Self fund				Stream	Chididi	Perennial		10
219	BLT-82	Nansadi Irrigation System	South	Thyolo	Blantyre	Thyolo	Matapwata	Blantyre	1975		4.75	3.75	5	5	Self fund				river	Nansadi			6
220	BLT-83	Chikowa Irrigation Project	South	Thyolo	Blantyre	Thyolo	Matapwata	Chikhwaza	1983	partial oparation	2.50	1.30	4	4	Self fund				Stream	Chikowa			3
221	BLT-84	Nanoleche Irrigation	South	Thyolo	Blantyre	Thyolo	Matapwata	Chiwoko	1987	partial oparation	3.80	2.50	4	3	Self fund				Groundwater	Nanoleche			
222	BLT-85	Nthelamawu Irrigation	South	Thyolo	Blantyre	Thyolo	Matapwata	Nantheza	1998	partial oparation	2.30	2.30	4	4	Self fund								
223	SHV-23	Chakudza	South	Chikwawa	Shire Valley	Chikwawa	Mbewe	Chipakudzi,	2002 / 03	Operational		3.00		15	Malawi govt. (treadle Pumps on loan)		699	820	River	Mkombedzi			4
224	SHV-24	Chitimbe One	South	Chikwawa	Shire Valley	Chikwawa	Mbewe	Mankhokwe	2001	Partially Operational		0.80	2	5	Foreign govt		680	45	Stream	Mkombedzi	Seasonal	Nov- Aug.	10
225	SHV-27	Chombwa 2	South	Chikwawa	Shire Valley	Chikwawa	Mbewe	Tomali	2001/02	Partially Operational	0.50	0.50	5	8	Self- fund		690	821		Chombwa	Seasonal	Nov- April	5
226	SHV-28	Kanjedza	South	Chikwawa	Shire Valley	Chikwawa	Mikalango	Chonzi	2001	Operational		0.30		1	NGO (World Vision International)	950	06835	81778	Stream	Mikalango	Perennial		2
227	SHV-29	Nkombedzi	South	Chikwawa	Shire Valley	Chikwawa	Mikalango	Nzangaya	2002	Operational		13.00		100	Malawi govt.	200	705503	8195200	River	Nkombedzi	Perennial		4
228	SHV-41	Masenjere	South	Nsanje	Shire Valley	Nsanje	Makhanga	Namanya	1972		6.00	4.00	20.0	10.0	Chinese Mission	80	24	893	River	Milore	Perennial		3
229	SHV-49	Mpisamanja	South	Nsanje	Shire Valley	Nsanje	Magoti	Mpisamanja	2002	Partially Operational		3.00	9	9	Malawi Government				Impounding dam	Chambalo	Perennial		
230	SHV-51	Kapasule	South	Chikwawa	Shire Valley	Chikwawa	Mitole	Kapasule		Partially Operational	20.00	15.00	30	20	Self- fund		8219	6958	Stream	Mthumba	Perennial	All year	15

Table 4.4 Inventory List of Self-help Small-Scale Irrigation System (Proposed Sites)

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
1	KR-1	Lweni	North	Chitipa	Karonga	Chitipa	Kameme	Iyanga	8.00	6.00	40	0.20	52	4			Lweni		January - December	4
2	KR-4	Witimba	North	Chitipa	Karonga	Chitipa	Lufita	Ibanda		40.00	340	0.10	4200	455	249	Impounding dam	Witimba	Perennial		30
3	KR-9	Mabula	North	Chitipa	Karonga	Chitipa	Misuku	Mwakayela	10.00	6.00	25	0.20				Stream	Mabula			0
4	KR-10	Chawezga	North	Chitipa	Karonga	Chitipa	Kavukuku	Gamba		2.40	10	0.24		571	8841	River	Chavyululu	Perennial		10
5	KR-11	Shanilo	North	Chitipa	Karonga	Chitipa	Kavukuku	Gamba		1.60	10	0.16		570	8840	Stream	Shanilo	Perennial		1
6	KR-12	Kaskamusenga	North	Chitipa	Karonga	Chitipa	Kavukuku	Kanjikiti		12.00	40	0.30		567	8848	Impounding dam	Kaskamusenga	Seasonal		10
7	KR-15	Mbalizi	North	Chitipa	Karonga	Chitipa	Chisenga	Chuba	19.00	16.00	80	0.20		428	906	River	Mbalizi	Perennial	January - December	5
8	KR-16	Kakasu	North	Chitipa	Karonga	Chitipa	Chisenga	Mulembe	90.00	50.00	250	0.20		416	865	River	Kakasu	Perennial	January - December	2
9	KR-17	Sato/Chuwa	North	Chitipa	Karonga	Chitipa	Chisenga	Chuba	16.00	8.00	40	0.10		445	896	Stream	Sato	Perennial	January - December	1
10	KR-18	Chisafi	North	Chitipa	Karonga	Chitipa	Mwamkumbwa	Abel	7.20	4.20	18	0.40	4550	26	36	Impounding dam	Chisafi	Seasonal	November to December	
11	KR-19	Nachidili	North	Chitipa	Karonga	Chitipa	Mwamkumbwa	Kasisi 2	12.00	6.00	15	0.90	4350	21	43	Stream	Kaghoma	Seasonal		4
12	KR-20	Nsanganya	North	Chitipa	Karonga	Chitipa	Mwamkumbwa	Robert	17.00	9.00	18	0.60	4150	23	47	River	Kaghoma	Seasonal	November	4
13	KR-21	Chanunkha	North	Chitipa	Karonga	Chitipa	Mwamkumbwa		7.00	13.00	22	0.86	4200	23	47	River	Kaghoma	Seasonal	November	4
14	KR-22	Nkhangwa	North	Chitipa	Karonga	Chitipa	Mwamkumbwa	Isaac	8.00	2.50	20	0.40	4500	27	43	Stream	Nkhangwa	Seasonal	December to September	
15	KR-23	Zingalupili	North	Chitipa	Karonga	Chitipa	Mwamkumbwa	Zingalupili	17.00	7.00	19	0.90	4150	23	49	Stream	Kaghoma	Seasonal	November to	4
16	KR-24	Matera	North	Karonga	Karonga	Karonga	Vinthukutu	Chilawira	5.00	10.00	65	0.15	1650	6128	8831	River	Chitimba	Perennial		5
17	KR-25	Tavyilane	North	Karonga	Karonga	Karonga	Vinthukutu	Mtangala	8.00	15.00	40	0.20	1850	7122	8845	River	Woywe	Perennial		5
18	KR-33	Kamilabandali	North	Karonga	Karonga	Karonga	Kaporo north	Mwenipela		6.00	50	0.12				Impounding dam	Kyungu	Perennial		40*15
19	KR-34	Mwandambo	North	Karonga	Karonga	Karonga	Kaporo north	Mwandambo	38.00	25.00	450	0.20				River	Songwe	Perennial		21
20	KR-35	Ngalamu	North	Karonga	Karonga	Karonga	Kaporo north	Gidion	13.00	6.00	23	0.26				Stream	Ngalamu	Perenial		
21	KR-36	Lukyala	North	Karonga	Karonga	Karonga	Kaporo north	Mwaisondola	45	18	288	0.20				Stream	Lukyala	Perennial		8
22	KR-38	kayerekera	North	Karonga	Karonga	Karonga	Mpata	Kayerekere	15.00	6.00	20	0.15		752	981	Stream	Mapambo	Perennial	Throughout	3
23	KR-39	Iponga	North	Karonga	Karonga	Karonga	Mpata	Peter Mwangalabo	15.00	8.00	40	0.20		973	17	River	Rukuru	Perennial	Throughout	30
24	KR-40	Nyasulu	North	Karonga	Karonga	Karonga	Mpata	Mulwa 11	5.00	0.40	10	0.40		936	954	Spring	Nyasulu	Perennial	Throughout	4
25	KR-41	Chimese	North	Karonga	Karonga	Karonga	Mpata	Chibaya	1.80	1.20	38	0.04		914	953	Spring	Chimese	Perennial	Throughout	
26	KR-42	Sharison	North	Karonga	Karonga	Karonga	Kaporo south	Sharoson	20.00	17.00	80	0.20	1600ft	957	145	River	Lufilya	Perennial		20
27	KR-43	Kayimbiri	North	Karonga	Karonga	Karonga	Kaporo south	Mwangwera	15.00	15.00	40	0.30	1600ft	951	146	River	Lufilya	Perennial		20
28	KR-44	Njara	North	Karonga	Karonga	Karonga	Kaporo south	Mwangwera	20.00	12.00	80	0.20	1600ft	938	152	River	Lufilya	Perennial		20.0
29	KR-45	Chirambo	North	Karonga	Karonga	Karonga	Kaporo south	Peter Gondwe	20.00	20.00	95	0.20	1650	905	206	River	Kaundi			20
30	KR-46	Kalambo	North	Karonga	Karonga	Karonga	Kaporo south	Kalambo	20.00	20.00	100	0.20	1650	915	210	Impounding dam and Spring		Perennial		
31	KR-47	Chiwembe	North	Karonga	Karonga	Karonga	Lupembe	Mweniiondo	20.00		120	0.20		922	52	Stream	Chomora	Seasonal		2
32	KR-48	Nthora	North	Karonga	Karonga	Karonga	Lupembe	Melele	14.00		50	0.30		969	29	Stream, Groundwater	Makwita	Seasonal	December to April	1
33	KR-49	Chiwondo	North	Karonga	Karonga	Karonga	Lupembe	Kisyombe	20.00		136		833	99	933	Lake	Lake Malawi	Seasonal	March	45cm
34	KR-50	Mwenetupembe	North	Karonga	Karonga	Karonga	Lupembe	Mwenelupembe	20.00		200	0.10		868	99	Lake	Malawi	Seasonal	December to March	2
35	KR-51	Makwale	North	Karonga	Karonga	Karonga	Lupembe	Kayuni	20.00		100	0.10		875.0	98	River	Wayi			2
36	KR-52	Chitindi	North	Karonga	Karonga	Karonga	Lupembe	Mwanyaska 1	20.00		112	0.20		758	158	River	Lemero	Seasonal	December to May	2
37	MZ 1	Kapolmence Vegetable Group	North	Nkhata Bay	Mzuzu	Nkhata Bay	Chikwina	Vwenyera	6.0	5.0	10	1.1				Stream / River	Chanjati / Luvuwo	Perennial		2
38	MZ 2	Manje	North	Nkhata Bay	Mzuzu	Nkhata Bay	Chikwina	Mtenje	6.0	4.0	30	0.3				Stream / River	Kaweni stream, Nyanduwuka R. & Thete R.	Perennial		3
39	MZ 3	Kachikumba	North	Nkhata Bay	Mzuzu	Nkhata Bay	Chikwina	Chigwere	5.0	5.0	10	1.0				Stream / River	Luwawo	Perennial		3
40	MZ 4	Kabogodo	North	Nkhata Bay	Mzuzu	Nkhata Bay	Chikwina	Mlandang'ombe	10.0	6.0	10	1.0				Stream / River	Lukalazi	Perennial		2
41	MZ 5	Kachonga	North	Nkhata Bay	Mzuzu	Nkhata Bay	Chikwina	Kachonga	12.0	10.0	14	1.2				Stream / River	Chongozi	Perennial		2
42	MZ 6	Chendasi	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mzenga	Tunduma	14.0	11.0	53	0.3				Stream / River	Chendasi	Perennial	Throughout year	8
43	MZ 7	Ekiloni	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mzenga	Likungwi	10.0	10.0	48	0.2				Stream / River	Kawalazi Stream	Perennial	Throughout year	6
44	MZ 8	Kapoza	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mzenga	Mchingalombo	13.0	7.0	59	0.2				Stream / River	Kavuzi River	Perennial	Throughout year	12
45	MZ 9	Mukwakwa	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mzenga	Chihame	4.0	7.0	56	0.2				Stream / River	Kavuzi River	Perennial	Throughout year	12
46	MZ 10	Mcholoma	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mzenga	Mcholoma	11.0	8.0	67	0.2				Stream / River	Kavuzi River	Perenial	Throughout year	12
47	MZ 11	Muwuwa	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mzenga	Dungwa	6.0	4.0	51	0.2				Stream / River	Kakwewa	Perenial	Throughout year	10
48	MZ 12	Kampingo	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mzenga	Mchingalombo	8.0	11.0	69	0.2				Stream / River	Kavuzi River	Perenial	Throughout year	12
49	MZ 13	Kahenga	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mzenga	Chihame	13.0	10.0	58	0.3				Stream / River	Kavuzi River	Perenial	Throughout year	12
50	MZ 15	Mwambazi	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mpamba	Kango	3.0	5.0	30	0.2	1,850	11	34	Stream / River	Limphasa	Perenial	Throughout year	8
51	MZ 16	Kalwe	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mpamba	Chighachan-g'ombe	10.0	15.0	68	0.2	1,750	11	34	Stream / River	Kalwe	Perenial		5

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
52	MZ 17	Ntchezi	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mpamba	Chipwayila	4.0	1.0	13	0.3	1,850	11	34	Stream / River	Liskaska	Perenial	Throughout year	6
53	MZ 18	Chikhowi	North	Nkhata Bay	Mzuzu	Nkhata Bay	Mpamba	Mnguwo	6.0	30.0	100	0.3	1,750	11	34	Stream / River	Chikhowi	Perenial	Throughout year	4
54	MZ 21	Mbayani	North	Nkhata Bay	Mzuzu	Nkhata Bay	Chinthechi	Ngalawuka	5.0	15.0	200	0.4	27	94		Stream / River	KAWIYA, KATENDEZA	Perenial	Throughout year	5
55	MZ 22	Mawato	North	Nkhata Bay	Mzuzu	Nkhata Bay	Chinthechi	Mpalawazi	8.0	12.0	40	0.8	25	90		Stream / River	KATENDEZA, CHIWINU	Perenial	Throughout year	4
56	MZ 23	Laswaswa (Litende)	North	Nkhata Bay	Mzuzu	Nkhata Bay	Chinthechi	Zomelanga	3.0	4.0	30	0.2	16	88		Stream / River	SWASWA	Perenial	Throughout year	3
57	MZ 24	Kapembe	North	Nkhata Bay	Mzuzu	Nkhata Bay	Nkhata Bay	Chofwa	15.0	10.0	20	0.5	1,700	8	27	Stream / River	LING'INYA	Perenial	Throughout year	4
58	MZ 25	Chapakasi	North	Nkhata Bay	Mzuzu	Nkhata Bay	Nkhata Bay	Kang'oma	15.0	7.0	40	0.4	1,650	6	38	Stream / River	CHIPAKASI	Perenial	Throughout year	3.0
59	MZ 26	Chiphazi / Kambale	North	Nkhata Bay	Mzuzu	Nkhata Bay	Nkhata Bay	Chiphazi/Kambale	10.0	5.0	31	0.5	2,150	19	38	Spring	CHISKOMBE	Perenial	Throughout year	
60	MZ 27	Banga	North	Nkhata Bay	Mzuzu	Nkhata Bay	Nkhata Bay		15.0	10.0	30	0.4	1,600	5	31	Stream / River	BANGA	Perenial	Throughout year	15
61	MZ 27	Kawulasisi	North	Nkhata Bay	Mzuzu	Nkhata Bay	Nkhata Bay	Fwayafwaya	12.0	7.0	21	0.5				Stream / River	DAYI CLEAN AND MKHWALI	Perenial	Throughout year	4
62	MZ 29	Dombola	North	Nkhata Bay	Mzuzu	Nkhata Bay	Tukombo	Chavula	2.0	8.0	53	0.2	1,700	138	720	Stream / River	Mazembe	Perenial		7
63	MZ 30	Lifupa	North	Nkhata Bay	Mzuzu	Nkhata Bay	Tukombo	Malengasanga	4.0	12.0	94	0.1	42	146	894	Stream / River	Lifupa	Perenial		8
64	MZ 31	Chighala	North	Nkhata Bay	Mzuzu	Nkhata Bay	Tukombo	Chimika	5.0	10.0	61	0.2	1,700	139	897	Stream / River	Lifupa	Perenial		8
65	MZ 32	Tukombo	North	Nkhata Bay	Mzuzu	Nkhata Bay	Tukombo	Kalumpha	0.0	5.0	30	0.1	1,650	145	638	Stream / River	Tukombo	Perenial		3
66	MZ 33	Mayaya	North	Nkhata Bay	Mzuzu	Nkhata Bay	Tukombo	Kachande		6.0	16	0.1	1,650	140	672	Stream / River	Mayaya	Perenial		4
67	MZ 34	Liatizi Usowoya	North	Rumphi	Mzuzu	Rumphi	Mphompha	Chivwenene	20.0	15.0	60	0.4	1,400	62	87	Stream / River	Luatizi	Perenial	Throughout year	3
68	MZ 35	Kasenga	North	Rumphi	Mzuzu	Rumphi	Mphompha		80.0	20.0	100	0.4		61	87		Senga Thete	Perenial	Throughout	4
69	MZ 36	Luncazi	North	Rumphi	Mzuzu	Rumphi	Mphompha	Mwachilinda	10.0	10.0	60	0.1	1,400	62	87	Stream / River	Lungazi	Perenial	Throughout year	3
70	MZ 37	Kafulamchenga	North	Rumphi	Mzuzu	Rumphi	Mphompha	Katatawa	12.0	10.0	36	0.5	1,600	61	87	Stream / River	Kafulamchenga	Perenial	Throughout year	1
71	MZ 38	Luwatizi Kanga	North	Rumphi	Mzuzu	Rumphi	Mphompha	Chinyata	15.0	15.0	40	0.4	1,400	62	87	Stream / River	Katonthowole	Perenial		1
72	MZ 166	Jalawe	North	Rumphi	Mzuzu	Rumphi	Chiweta	Chilipapa	2.0	2.5	10	0.3				Impounding dam	Jalawe	Perenial		6
73	MZ 41	Chisasa	North	Rumphi	Mzuzu	Rumphi	Chiweta	Chipoka	5.0	1.5	25	0.2				Spring	Chisasa	Perenial		100
74	MZ 42	Chitimba	North	Rumphi	Mzuzu	Rumphi	Chiweta					0.1					Chitimba	Perenial		8
75	MZ 44	Tikolane	North	Rumphi	Mzuzu	Rumphi	Mhuju	Mbama	20.0	15.0	50	0.6		622021	43	Stream / River	Kakwale	Perenial	All year round	3
76	MZ 45	Mgampha	North	Rumphi	Mzuzu	Rumphi	Mhuju	Mgampha	17.0	12.0	35	0.4		11	5		Chimianga	Perenial		3
77	MZ 46	Bethani	North	Rumphi	Mzuzu	Rumphi	Mhuju	Mnyongani	17.0	10.0	40	0.2				Stream / River	Luvin	Perenial		4
78	MZ 47	Mdumuka	North	Rumphi	Mzuzu	Rumphi	Mhuju	Chisivya	18.0	15.0	120	0.5				Stream / River	Luvin	perenial		3
79	MZ 48	Chavwanyuma	North	Rumphi	Mzuzu	Rumphi	Ntchena chena	Chikakula	15.0	8.0	40	2.0				Stream / River	Chimuyanga	Perenial	Throughout year	3
80	MZ 49	Luwerezi	North	Rumphi	Mzuzu	Rumphi	Ntchena chena	Chiwerewere	15.0	9.5	48	2.0				Stream / River	Lura	Perenial	Throughout year	5
81	MZ 50	Lwatizi	North	Rumphi	Mzuzu	Rumphi	Ntchena chena	Mzimba	20.0	8.0	45	3.0				Stream / River	Lwatizi	perenial	Throughout year	4
82	MZ 51	Mwahomelo	North	Rumphi	Mzuzu	Rumphi	Ntchena chena	Mwahomero	25.0	10.0	55	2.0				Stream / River	Lubagha	Perenial	Throughout year	3
83	MZ 52	Chibale	North	RUMPHI	Mzuzu	Rumphi	Ntchena chena	Mkolasato	26.0	9.5	40	1.5				Stream / River	Ntchena chena	perenial	Throughout year	4
84	MZ 53	Tinthowele 1	North	Mzimba	Mzuzu	Mzimba	Mpherembe	Chauluma	12.0	14.0	50	0.2				Stream / River	Tonthowele	seasonal	January-May	20
85	MZ 54	Manthulu	North	Mzimba	Mzuzu	Mzimba	Mpherembe	Chauluma	10.0	15.0	72	0.2				Stream / River	Manthulu	seasonal	January-	150
86	MZ 55	Chavova	North	Mzimba	Mzuzu	Mzimba	Mpherembe	Chipemba	10.0	15.0	115	49.0				Stream / River	Chavova	seasonal	December-August	25
87	MZ 56	Luvwele	North	Mzimba	Mzuzu	Mzimba	Mpherembe	Kazaka	19.0	19.0	190	0.1				Stream / River	Luvwere	Perenial	Throughout year	50
88	MZ 57	Sokopo	North	Mzimba	Mzuzu	Mzimba	Mpherembe	Kabinyu	18.0		0	0.1				Stream / River	Sokopo	seasonal	December-September	40
89	MZ 58	Matimba	North	Mzimba	Mzuzu	Mzimba	Malidade	Yobe Jere	20.0	15.0	201	1.0				Stream / River	Matimba	seasonal	December-October	5
90	MZ 59	Chiukazi	North	Mzimba	Mzuzu	Mzimba	Malidade	Wombwe	60.0	15.0	145	0.1				Impounding dam	Chiukuzi	Perenial	Throughout year	20
91	MZ 60	Kalumbo	North	Mzimba	Mzuzu	Mzimba	Malidade	Mkatakulima	6.0	43.0	24	0.8				Stream / River	Matimba	Perenial	Throughout year	6
92	MZ 61	Chunda	North	Mzimba	Mzuzu	Mzimba	Malidade	Mzukulawaso	10.0	15.0						Stream / River	Chunda	seasonal	August	10
93	MZ 62	Jangavya	North	Mzimba	Mzuzu	Mzimba	Malidade	Lameck Lwanja		18.0	48	1.2				Stream / River	jangavya	seasonal	November-August	10
94	MZ 63	Luselo	North	Mzimba	Mzuzu	Mzimba	Emsizini	Chembezi	78.0	18.0	130	0.6				Stream / River	lusero	perenial	Throughout year	5
95	MZ 64	Lutete / Kajiti	North	Mzimba	Mzuzu	Mzimba	Emsizini	Kamangadazi	84.0	18.0	140	0.6	4,300	3355	11	Stream / River	lutete	Perenial	Throughout year	8
96	MZ 65	Lusangazi	North	Mzimba	Mzuzu	Mzimba	Emsizini	Zambo	48.0	12.0	80	0.6	4,300	33	1130	Stream / River	lusangazi	perenial	Throughout year	10
97	MZ 67	Lukonkhosi	North	Mzimba	Mzuzu	Mzimba	Zombwe	Chinombo chonga		10.0	20	0.4				Stream / River	likonkhowe	seasonal	Throughout year	10

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
98	MZ 68	Zunguziwa	North	Mzimba	Mzuzu	Mzimba	Zombwe	Machana	7.0							Stream / River	lunyangwa	Perenial	Throughout year	5
99	MZ 69	Lukonkhowe	North	Mzimba	Mzuzu	Mzimba	Zombwe	Malunda solko	2.0	6.0	70	0.2				Stream / River	lukonhowe	seasonal	Throughout year	7
100	MZ 70	Chisangano	North	Mzimba	Mzuzu	Mzimba	Zombwe	Matemanga	2.0	4.0	8	0.5				Stream / River	chisangano	seasonal	Throughout year	6
101	MZ 71	Kazembe	North	Mzimba	Mzuzu	Mzimba	Bulala	Mbayi mbayi	2.0	4.0						Stream / River	kazembe	seasonal	December-June	12
102	MZ 72	Malinyete	North	Mzimba	Mzuzu	Mzimba	Bulala	kanyalu chadewa	6.0	4.0	46	0.3				Impounding dam	visenthe	seasonal	Throughout year	35
103	MZ 73	Tonthowela	North	Mzimba	Mzuzu	Mzimba	Bulala	Yobe gama	6.0	6.0	30	0.2	5	486	64	Impounding dam	Tonthowele	seasonal	December-August	15
104	MZ 74	Lyanyuni	North	Mzimba	Mzuzu	Mzimba	Bulala		3.0	2.5	18	0.3	4,450	585	73	Stream / River	lwanyuni	seasonal	December-September	45
105	MZ 75	Chandende	North	Mzimba	Mzuzu	Mzimba	Bulala	Mahekeya mwandira	2.0	2.0	28	0.1	56	513	138	Stream / River	chandende	seasonal	December-August	30
106	MZ 76	Milanje	North	Mzimba	Mzuzu	Mzimba	Emfeni	Yobe nshlane	10.0	5.0	25	0.6	3,450	33	12	Stream / River	milenje	seasonal	10 month	6
107	MZ 77	Kakwale	North	Mzimba	Mzuzu	Mzimba	Emfeni	David jere	11.0	6.0	45		3,800	33	12	Stream / River	Kakwale	Perenial		4
108	MZ 78	Kamwala	North	Mzimba	Mzuzu	Mzimba	Emfeni	Julizga Balovi	12.0	8.0	91	0.2	3,650	33	12	Stream / River	milenje	perenial		7
109	MZ 79	Mlatawaleza	North	Mzimba	Mzuzu	Mzimba	Emfeni	Mwenye Nkhata	9.0	6.0	42	0.4	3,800	33	11	Stream / River	njewe	seasonal	December-April	4
110	MZ 82	Msambanyifwa	North	Mzimba	Mzuzu	Mzimba	Njuyu	David Nkhambule	5.0	18.0		1.6				Stream / River	kasito	Perenial		4
111	MZ 83	Jalawe	North	Mzimba	Mzuzu	Mzimba	Njuyu	Yapoma/Zimema	50.0	12.0						Stream / River	thitimila	seasonal	february	3
112	MZ 84	Chibavi	North	Mzimba	Mzuzu	Mzimba	Njuyu	Chibavi mvaba	25.0	8.0	30	1.2				Stream / River	kammembe	seasonal	December-October	2
113	MZ 86	Kamwankhuku	North	Mzimba	Mzuzu	Mzimba	Champhila	Dula chipusire	50.0	30.0	100	0.3	5,000	720	345	Stream / River	kamwankhuku	perenial	Throughout year	2
114	MZ 87	Kalanje	North	Mzimba	Mzuzu	Mzimba	Champhila	Kayuni	40.0	35.0	60	0.3	4,600	650	340	Stream / River	kalwanje	perenial	Throughout year	3
115	MZ 88	Mswamphila	North	Mzimba	Mzuzu	Mzimba	Champhila	Mswamphila	30.0	23.0	30	0.5	5,000	740	342	Stream / River	lupachce	perenial	Throughout year	2
116	MZ 89	Lunga	North	Mzimba	Mzuzu	Mzimba	Champhila	Kachilanga	55.0	40.0	115	0.5	4,950	775	432	Stream / River	lunga	Perenial	Throughout year	
117	MZ 90	Mutami	North	Mzimba	Mzuzu	Mzimba	Champhila	Zifera Chisi	35.0	25.0	120	0.3	4,800	680	402	Stream / River	chipate	perenial	Throughout year	4
118	MZ 91	Chipazi	North	Mzimba	Mzuzu	Mzimba	Champhila	Kajiwulo	50.0	40.0	150	0.3	4,900	740	412	Stream / River	chipazi	perenial	Throughout year	2
119	MZ 92	Kavalo Irrigation	North	Mzimba	Mzuzu	Mzimba	Champhila	Chikwa	40.0	30.0	62	0.4	4,900	770	400	Stream / River	kachibale	Perenial	Throughout year	2
120	MZ 93	Edeni	North	Mzimba	Mzuzu	Mzimba	Khosolo	Aron	3.0	3.0	30	0.1				Stream / River	kamimba	perenial		2
121	MZ 94	Kachendemuka	North	Mzimba	Mzuzu	Mzimba	Khosolo	Chikanamba	8.0	8.0	100	0.1				Stream / River	kachendemika	perenial		7
122	MZ 97	Vilani Mlaka	North	Mzimba	Mzuzu	Mzimba	Khosolo	Mlaka	10.0	10.0	52	0.1				Stream / River	kavimbumo	perenial		2
123	MZ 98	Chibavi	North	Mzimba	Mzuzu	Mzimba	Khosolo	Chibavi	10.0	8.0	36	0.2				Stream / River		Perenial		
124	MZ 99	Chankhome	North	Mzimba	Mzuzu	Mzimba	Khosolo	Mapila	15.0	15.0	20	0.1				Stream / River	chankhome	Perenial		2
125	MZ 100	Kamuhlambo	North	Mzimba	Mzuzu	Mzimba	Luwerezi	Kanyemba	13.0	12.0	80	0.2		567750	861950	Stream / River	luwerezi	perenial	Throughout year	
126	MZ 101	Chinkhawu	North	Mzimba	Mzuzu	Mzimba	Luwerezi	Kajumi	10.0	9.0	40	0.2		571600	8615050	Stream / River	luwerezi	Perenial	Throughout year	12
127	MZ 102	Kamwala	North	Mzimba	Mzuzu	Mzimba	Luwerezi	Mtambalika	30.0	20.0	191	0.3		579550	861300	Stream / River	kamwala	Perenial		2
128	MZ 103	Mchilawengo	North	Mzimba	Mzuzu	Mzimba	Luwerezi	Chihepa	18.0	15.0	120	0.2		568450	8621800	Stream / River	mchilawengo	Perenial	Throughout year	10
129	MZ 104	Chinyaza	North	Mzimba	Mzuzu	Mzimba	Luwerezi	James	20.0	7.0	25	0.3		571550	8615050	Stream / River	luwerezi	Perenial	Throughout year	10
130	MZ 106	Zachulu	North	Mzimba	Mzuzu	Mzimba	Manyamula	Kalyelamalo	12.0	8.0	194	0.1	900	459	853	Impounding dam	zachulu	perenial		6
131	MZ 107	Manyamula	North	Mzimba	Mzuzu	Mzimba	Manyamula	Zikhole Sakala	4.0	7.0			850	455	758	Impounding dam	manyamula	seasonal	November-August	50
132	MZ 108	Chazawe	North	Mzimba	Mzuzu	Mzimba	Manyamula	Matevo Ng'oma	19.0	5.0	15		850	457	802	Spring	chazawe	Perenial		3
133	MZ 109	Chikumbi	North	Mzimba	Mzuzu	Mzimba	Manyamula	Amon Nyirongo	1.5	3.5	36	0.1	850	501	751	Stream / River	njoka	perenial		6
134	MZ 110	Getsemani	North	Mzimba	Mzuzu	Mzimba	Manyamula	Daniel Tembo	2.0	2.0	13	0.2	850	452	855	Impounding dam	milala	Perenial		10
135	MZ 111	Zaninge	North	Mzimba	Mzuzu	Mzimba	Manyamula	Mubobo Mjila	1.0	2.0	20	0.2	850	514	668	Spring	yalede	perenial		2
136	MZ 112	Emazwini	North	Mzimba	Mzuzu	Mzimba	Manyamula	Mzondi Chumba	4.0	2.0	40	0.2	900	508	708	Stream / River	njoka	perenial		5
137	MZ 114	Jombo	North	Mzimba	Mzuzu	Mzimba	Bwengu	Matekenya Shawa	15.0	10.0	50	0.2	3,550	11	33	Impounding dam	jombo	seasonal		300
138	MZ 115	Katothowolo	North	Mzimba	Mzuzu	Mzimba	Bwengu	Mwanamwene	6.0	5.0	50	0.1	3,650	11	33	Stream / River	katonthowolo	Perenial	Throughout year	
139	MZ 116	Chitochi	North	Mzimba	Mzuzu	Mzimba	Bwengu	Kamangadazi	10.0	10.0	40	0.3	3,550	11	33	Spring	chitochi	Perenial	Throughout year	400
140	MZ 117	Chankhando	North	Mzimba	Mzuzu	Mzimba	Bwengu	Kacheche Mhango	20.0	20.0	100	0.2	3,450	11	33	Spring	chinkhando	Perenial		10
141	MZ 118	Masato 1	North	Mzimba	Mzuzu	Mzimba	Mjinge	Mjinge Zimba	8.0	15.0	20	0.3	3,900	36	82	Stream / River	masato	seasonal	December-July	300
142	MZ 119	Masato 2	North	Mzimba	Mzuzu	Mzimba	Mjinge	Chibwangandu Kamanga	2.6	6.0	18	0.3	3,900	37	83	Stream / River	masato	seasonal		120

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
143	MZ 120	Chavuwu	North	Mzimba	Mzuzu	Mzimba	Mjinge	Makamo	10.0	15.0	50	0.4	3,850	44	91	Stream / River	south rukuru	Perenial	Throughout year	15
144	MZ 121	Chiswanyanga	North	Mzimba	Mzuzu	Mzimba	Mjinge	Mjinge Zimba	2.0	6.0	20	0.2	3,850	40	80	Stream / River	south rukuru	Perenial	Throughout year	30
145	MZ 122	Matope	North	Mzimba	Mzuzu	Mzimba	Eswazini	Kavizombo	18.0	10.0	27	0.7	4,550	69	9	Impounding dam	lubyebye	perenial	Throughout year	15
146	MZ 123	Kawale	North	Mzimba	Mzuzu	Mzimba	Eswazini	Zefaniya Nyirenda	1.0	4.0	11		1,425	73	97	Impounding dam	mahowe	Perenial	Throughout year	4
147	MZ 124	Kang'wena	North	Mzimba	Mzuzu	Mzimba	Eswazini	Nkhani yawo	10.0	14.0	50	0.3	4,750	75	4	Impounding dam	luwerezi	seasonal		40
148	MZ 125	Kahola	North	Mzimba	Mzuzu	Mzimba	Eswazini	Mateyu and Zakeyo	7.0	10.0	10	1.0	465	70	11	Impounding dam	kahora	perenial	throughout	120
149	MZ 126	Mhlulu	North	Mzimba	Mzuzu	Mzimba	Eswazini	Daniel Moyo	20.0	12.0	20	0.6	4,600	66	7	Impounding dam	mhlulu	seasonal		50
150	MZ 127	Kaveyere	North	Mzimba	Mzuzu	Mzimba	Kazombo	Bokosi Hunga	5.0	13.0	19	0.3				Stream / River	kamwamphimbi	Perenial		3
151	MZ 128	Kavukula	North	Mzimba	Mzuzu	Mzimba	Kazombo	Jonasi Lowole	115.0	11.0	29	13.0				Spring	kavukula			
152	MZ 129	Ngoli	North	Mzimba	Mzuzu	Mzimba	Kazombo	Mzimba	5.0	12.4	62	0.2				Stream / River	ngoli	perenial		5
153	MZ 130	Chankhanga	North	Mzimba	Mzuzu	Mzimba	Kazombo	Samuel	4.0	10.0	52	0.2				Stream / River	chankhanga	Perenial		3
154	MZ 131	Kavukula	North	Mzimba	Mzuzu	Mzimba	Kazombo	Chimembe	8.0	12.0	26	0.3				Spring	kavukula	perenial		
155	MZ 133	Kampondo	North	Mzimba	Mzuzu	Mzimba	Euthini	Kapandu	60.0	15.0	106	0.2		53	48	Stream / River	kapando	seasonal		35
156	MZ 139	Kaluwe	North	Mzimba	Mzuzu	Mzimba	Mbalachanda	Chimukusa	5.0	7.0	120	0.1				Impounding dam	kaluweru	seasonal	December-August	5
157	MZ 140	Kaluwe	North	Mzimba	Mzuzu	Mzimba	Mbalachanda	Jeremia Chima	20.0	15.0	130	0.2	134	447458	379394	Stream / River	kaluwe	perenial	August	300
158	MZ 141	Jinga	North	Mzimba	Mzuzu	Mzimba	Mbalachanda	Chiti			240	0.4				Stream / River	chang'anga	seasonal	Dec-August	30
159	MZ 142	Kasambanamwali	North	Mzimba	Mzuzu	Mzimba	Mbawa	Mungoniwawo	13.0	9.0	50	0.2	4,150	552100	8655200	Stream / River	kakoma	perenial		60
160	MZ 143	Majiyatuwa	North	Mzimba	Mzuzu	Mzimba	Mbawa	Embagweni	10.0	8.0	60	0.1	4,300	5538	86584	Stream / River	majiyatuwa	seasonal	December-October	30
161	MZ 144	Kabumba	North	Mzimba	Mzuzu	Mzimba	Mbawa	Jamu Kumwenda	15.0	10.0	51	0.2	4,450	555800	8659400	Stream / River	kabumba	seasonal	December-September	70
162	MZ 145	Matuli	North	Mzimba	Mzuzu	Mzimba	Mbawa	Kamangadazi	10.0	14.0	60	0.1	4,360	552300	8665800	Stream / River	maturi	Perenial		50
163	MZ 146	Muhulaunda	North	Mzimba	Mzuzu	Mzimba	Mbawa	Echiyeni	2.0	4.0	16	0.3	3,875	545520	8654420	Stream / River	mahalaunda	perenial	Throughout year	7
164	MZ 147	Kamganje	North	Mzimba	Mzuzu	Mzimba	Mbawa	Kagaylia	10.0	17.0	34	0.4	3,975	533830	865540	Stream / River	kamsenje	seasonal		
165	MZ 148	Mtengowina	North	Mzimba	Mzuzu	Mzimba	Vibangalala	Muhabi Shawa	10.0	8.0	248	2.0	4,050	1233	469	Stream / River	matipa	seasonal	June-July	40
166	MZ 149	Kamlaza	North	Mzimba	Mzuzu	Mzimba	Vibangalala	Mapupu Ndhlovu	9.0	7.0	81	1.2	4,150	470	476	Stream / River	kamfulu	seasonal	July-August	60
167	MZ 150	Joka Lameki	North	Mzimba	Mzuzu	Mzimba	Vibangalala	Chindoka Jonasi	60.0	52.0	458	1.5				Stream / River	njoka	seasonal	Sptember	50
168	MZ 151	Kambindumbindu	North	Mzimba	Mzuzu	Mzimba	Vibangalala	Thomasi Chirwa	18.0	15.0	189	1.8	4,050	392	436	Stream / River	mtuzuzu	seasonal	May-June	125
169	MZ 152	Kadola	North	Mzimba	Mzuzu	Mzimba	Vibangalala	Kazatha Zgambo	15.0	10.0	152	1.5	4,250	508	420	Stream / River	kandola	seasonal		70
170	MZ 153	Ngundu	North	Mzimba	Mzuzu	Mzimba	Vibangalala	Mphande shawa	15.0	10.0	111	0.6	4,400	567	420	Stream / River	ngundu	seasonal	October	50
171	MZ 154	Ndawa	North	Mzimba	Mzuzu	Mzimba	Vibangalala	Chigula	16.0	11.0	151	0.7	4,350	548	488	Stream / River	ndawa	seasonal	October	40
172	MZ 157	Kamtumbile	North	Rumphi	Mzuzu	Rumphi	Katowo	Mwankhuni		3.0	20	0.2				Groundwater	Hewe	perenial		7
173	MZ 158	Mwathamanta	North	Rumphi	Mzuzu	Rumphi	Katowo	Mwathananta	10.0	10.0	71	0.2				Stream / River	chisimuka	Perenial		2
174	MZ 159	Tiwone	North	Rumphi	Mzuzu	Rumphi	Katowo	Mwailalambo		2.0	30	0.1				Stream / River	Hewe	Perenial		7
175	MZ 160	Chimbi	North	Rumphi	Mzuzu	Rumphi	Katowo	Kamunoli	2.0	2.0	20	0.1				Stream / River	Hewe	Perenial		7
176	MZ 161	Kang'oma	North	Nkhata-Bay	Mzuzu	Nkhata-Bay	Chitheka	Mbaya	52.0	66.0	50	0.1				Stream / River	Ting'ona	Perenial	throughout	5
177	MZ 162	Liungu	North	Nkhata-Bay	Mzuzu	Nkhata-Bay	Chitheka	Mwanjawira	90.0	20.0	25	0.8				Stream / River	Lichelemu	Perenial		8
178	MZ 163	Chitheka	North	Nkhata-Bay	Mzuzu	Nkhata-Bay	Chitheka	Gunda			130					Stream / River	Tupombo	Perenial	throughout	3
179	MZ 164	Chakupompha	North	Nkhata-Bay	Mzuzu	Nkhata-Bay	Chitheka	Chakupompha		25.0		2.0				Stream / River	Mvunduzi, Thithimira	perenial	throughout	15
180	MZ 165	Kadeti	North	Nkhata-Bay	Mzuzu	Nkhata-Bay	Chitheka	Kanyunya	90.0	18.0	54	1.0				Stream / River	Kadeti	Perenial		3
181	KU-8	Mpeni	Central	Kasungu	Kasungu	Kasungu	Lisasadzi	Mpeni	4.0	7.0	10	0.4				Stream / River	Lisasadzi	Perennial		80
182	KU-9	Kaminyala	Central	Kasungu	Kasungu	Kasungu	Lisasadzi	Jimu	5.0	5.0	20	0.3				Stream / River	Bua			30
183	KU-10	Kasakadza	Central	Kasungu	Kasungu	Kasungu	Lisasadzi	Mwanda II	5.0	10.0	30	0.3				Stream / River	Kasakadza	Seasonal	December-August	250
184	KU-11	Kholamaviwe	Central	Kasungu	Kasungu	Kasungu	Lisasadzi	Mbwindi	3.0	8.0	26	0.3				Stream / River	Bua	Perennial		50
185	KU-12	Chibwe	Central	Kasungu	Kasungu	Kasungu	Lisasadzi	Mphungu	20.0	15.0	35	0.4				Stream / River	Chibwe	Seasonal	February	200
186	KU-13	Kantchito	Central	Kasungu	Kasungu	Kasungu	Lisasadzi	Kantchito	150.0	12.0	20	0.8				Stream / River	Lisasadzi	Seasonal	January	100
187	KU-14	Lingadzi	Central	Kasungu	Kasungu	Kasungu	Chipala	Galika	25.0	18.0	45	0.8				Stream / River	Lingadzi	Perennial		12
188	KU-15	Kamaliwa	Central	Kasungu	Kasungu	Kasungu	Chipala	Kapawala	5.0	5.0	50	0.4				Impounding dam	Kamaliwa	Seasonal	January/February	5
189	KU-18	Chipala	Central	Kasungu	Kasungu	Kasungu	Chipala	Kanyenda	35.0	20.0	60	1.2				Stream / River	Lingadzi	Seasonal	Nov-Aug	10
190	KU-19	Chikoko	Central	Kasungu	Kasungu	Kasungu	Chipala	Kachitsa	40.0	20.0	100	2.4				Impounding dam	Kaziwa & Chikoko			100
191	KU-20	Thema	Central	Kasungu	Kasungu	Kasungu	Chipala	Mndume	5.0	3.0	25	1.4				Stream	Thema	Perennial	June	10
192	KU-21	Kandawe	Central	Kasungu	Kasungu	Kasungu	Chipala	Chipwaila	30.0	20.0	100	2.0				Impounding dam	Kandawe			100
193	KU-26	Yesaya	Central	Kasungu	Kasungu	Kasungu	Kalululuma	Gulumula	10.0	10.0	15	1.5				Stream	Msusu	Seasonal		6
194	KU-27	Makhaza	Central	Kasungu	Kasungu	Kasungu	Kalululuma	Makhaze	50.0	30.0	70	2.5				Stream		Seasonal		5
195	KU-28	Matandani	Central	Kasungu	Kasungu	Kasungu	Kalululuma	Sumba	40.0	10.0	20	2.0				Stream / River	Matandani	Seasonal		5
196	KU-29	Kamwala	Central	Kasungu	Kasungu	Kasungu	Kalululuma	Chisombeni	50.0	50.0	70	2.0				Stream / River	Kamwala	Seasonal		2
197	KU-30	Chiuzu	Central	Kasungu	Kasungu	Kasungu	Kalululuma	Chisikwa	20.0	20.0	110	1.5				Stream / River	Chuzu	Seasonal		4
198	KU-31	Lojwa	Central	Kasungu	Kasungu	Kasungu	Kalululuma	Chimudzi	20.0	10.0	30	1.5				Stream / River	Lojwa	Seasonal		3
199	KU-33	Chambidzi	Central	Dowa	Kasungu	Dowa	Bowe	Makalani	2.2	5.5	48	0.3	400			Groundwater	Chambidzi dambo	Seasonal	Jan-Sept	20
200	KU-34	Mgona	Central	Dowa	Kasungu	Dowa	Bowe	Kathengo	3.0	5.0	30	0.3				Groundwater	Mgona dambo	Seasonal	Jan-Feb	
201	KU-35	Chole	Central	Dowa	Kasungu	Dowa	Bowe	Chole	7.0	8.0	43	0.4	4,000			Stream / River	Kasangadzi	Perennial	12months	6
202	KU-36	Njawela	Central	Dowa	Kasungu	Dowa	Bowe	Katumuka	7.0	9.0	40	0.4	4,000			Impounding dam	Chimbewa dambo	Seasonal	6months	50
203	KU-37	Mkuyu	Central	Dowa	Kasungu	Dowa	Bowe	Ndeka	4.4	2.0	22	0.3				Stream / River	Kasangadzi	Perennial	Nil	12
204	KU-52	Masinja	Central	Ntchisi	Kasungu	Ntchisi	Chikwatula	Langa	15.0	15.0	20	0.3	1,200			River/Spring	Chafumbi	Perennial		400
205	KU-63	Kakwiza	Central	Ntchisi	Kasungu	Ntchisi	Kalira	Nkhwindima	3.0	6.0	18	0.5	5,100	5	163	Stream / River	Mpherere			

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
206	KU-64	Chiluwa	Central	Ntchisi	Kasungu	Ntchisi	Kalira	Mtupa/Chimwala	8.0	8.0	46	0.4	4,600	15	97	Stream / River	Chiluwa	Perennial		20-30
207	KU-65	Gontha	Central	Ntchisi	Kasungu	Ntchisi	Kalira	Chikwawe	18.0	11.2	74	0.3	4,450	47	105	Stream / River	Gontha	Perennial		50
208	KU-66	Kalema	Central	Ntchisi	Kasungu	Ntchisi	Kalira	Mzuche	18.0	5.0	38	0.1	1,350	987	106	Stream / River	Kala			1
209	KU-77	Lintchesi	Central	Dowa	Kasungu	Dowa	Nachisaka	Chiundira	20.0	16.0	80	0.2				Stream / River	Lintchesi	Perennial	Through out	7
210	KU-79	Timachedwa	Central	Dowa	Kasungu	Dowa	Nachisaka	Mdakondwera		6.0	22	0.3	1,350			Stream / River	Nkhokomo	Perennial		8
211	KU-80	Thawi/ Lintchesi	Central	Dowa	Kasungu	Dowa	Nachisaka	Nyakhwa/ Ndawambi	14.0	20.0	91	0.2				Stream / River	Thawi/Lintchesi	Perennial		3
212	KU-81	Mphodza	Central	Dowa	Kasungu	Dowa	Nachisaka	Nkathama	19.0	16.0	80	0.2				Stream / River	Mphodza	Perennial		10
213	KU-82	Lingadzi	Central	Dowa	Kasungu	Dowa	Nachisaka	Chiwale,Mtukwa, Mgwandali	18.0	12.0	60	0.2				Stream / River	Lingadzi	Perennial		15
214	KU-83	Madzialendo	Central	Dowa	Kasungu	Dowa	Nachisaka	Mdondwe T.Masimbe	32.0	6.4	32	0.2				Spring	Madzialendo	Perennial		6
215	KU-86	Kang'ona	Central	Dowa	Kasungu	Dowa	Mndolera	Mkomba	106.0	15.0	67	2.6	200			Impounding dam	Kang'ona river			
216	KU-87	Kasekese	Central	Dowa	Kasungu	Dowa	Mndolera	Dzoole	142.0	59.0	700	0.2				Stream / River	Kasekese dambo	Seasonal		260
217	KU-88	Chikandira	Central	Dowa	Kasungu	Dowa	Mndolera	Mwimba	23.0	20.0	789	0.3				Stream / River	Mliti	Seasonal	Up October	250
218	KU-89	Mkananyemba	Central	Dowa	Kasungu	Dowa	Mndolera	Mbachundu	80.0	17.0	300	0.3					Mkananyemba			460
219	KU-90	Khokholi	Central	Dowa	Kasungu	Dowa	Madisi	Namkhumba	8.0	20.0	75	0.3				Groundwater	Khokholi	Perennial	January,February	20
220	KU-91	Mthirirano	Central	Dowa	Kasungu	Dowa	Madisi	Chitwala	8.0	20.0	80	0.3				Stream / River	Mphemba	Perennial	Through out	5
221	KU-92	Chisapa	Central	Dowa	Kasungu	Dowa	Madisi	Mphamba	4.0	20.0	114	0.2				Stream / River	Kasangadzi	Perennial		7
222	KU-93	Mphemba	Central	Dowa	Kasungu	Dowa	Madisi	Waletsa	7.0	20.0	71	0.3				Impounding dam	Mphemba	Seasonal	Dec-June	150
223	KU-94	Katete	Central	Dowa	Kasungu	Dowa	Chisepo	Mtelemuka	4.0	2.5	22	0.3				Stream / River	Katete	Seasonal	Nov-Aug	200
224	KU-95	Choma	Central	Dowa	Kasungu	Dowa	Chisepo	Chiuniira/Thumba	20.0	30.0	600	0.3				Stream / River	Choma	Seasonal	Nov-Sept	400
225	KU-96	Chimamba	Central	Dowa	Kasungu	Dowa	Chisepo	Chimamba	30.0	18.0	37	0.4				River	Nambuma	Perennial		30
226	KU-97	Kamambala	Central	Dowa	Kasungu	Dowa	Chisepo	Kamphinda,Mangazi Pelese,mchoka,Sichipapa	20.0	30.0	500	0.4				Stream / River	Katete&Choma streams confluence	Seasonal	Nov-Sept	300
227	KU-98	Mondwe	Central	Dowa	Kasungu	Dowa	Chisepo	Mondwe	40.0	30.0	60	0.2				Stream / River	Nambuma	Perennial		300
228	KU-99	Madziayenda	Central	Dowa	Kasungu	Dowa	Chisepo	Madziayenda/ Chidzuma	15.0	20.0	25	25.0					Kanyungu	Perennial		15
229	KU-100	Chamwala	Central	Dowa	Kasungu	Dowa	Mponela	Mtekateka	18.0		30	0.6				Stream / River	Namwiri/Kanyungu	Seasonal		200
230	KU-101	Nkhamanga	Central	Dowa	Kasungu	Dowa	Mponela	Nkhamanga	8.0	10.0	12	0.6				Stream / River	Kasangadzi	Perennial		30
231	KU-102	Kamwambuzi	Central	Dowa	Kasungu	Dowa	Mponela	Chivute	9.0	15.0	20	0.4				Stream / River	Kamwambuzi	Seasonal		18
232	KU-103	Napsya	Central	Dowa	Kasungu	Dowa	Mponela	Chikusa,Ndawambi	10.0	25.0	30	0.3				Stream / River	Napsya		September	20
233	KU-104	Kabinde	Central	Dowa	Kasungu	Dowa	Mponela	Ching'ambe	25.0	25.0	60	0.4				Stream / River	Kabinde	Seasonal		25
234	KU-106	Chinthale	Central	Dowa	Kasungu	Dowa	Mponela	Mbalani/Kakusa	10.0	15.0	25	0.4				Stream / River	Chinthale	Seasonal		20
235	KU-107	Nkhatwe	Central	Dowa	Kasungu	Dowa	Mponela		25.0	50.0	50	0.4				Stream / River	Nkhatwe			30
236	KU-108	Chimwala Dambo	Central	Dowa	Kasungu	Dowa	Chivala	Kundwe		10.5	31	0.3				Stream / River	Chimwala	Seasonal	Jan & Feb	2
237	KU-109	Mwakafa	Central	Dowa	Kasungu	Dowa	Chivala	Funsani		10.4	52	0.2				Stream / River	Mwakafa dambo	Seasonal		
238	KU-110	Chipwenkha	Central	Dowa	Kasungu	Dowa	Chivala	Chipwenkha		4.0	12	0.3				Stream / River	Tovi	Seasonal	Jan	
239	KU-111	Mapondela	Central	Dowa	Kasungu	Dowa	Chivala	Mapondela		7.0	40	0.2				Stream / River	Lumbadzi	Perennial		
240	KU-112	Navumi	Central	Dowa	Kasungu	Dowa	Chivala	Jumpha		13.0	35	0.4				Stream / River	Navumi dambo	Seasonal	Jan	
241	KU-113	Bzyanzi	Central	Dowa	Kasungu	Dowa	Chivala	Ndalama		15.0	35	0.4				Stream / River	Bzyanzi	Perennial		
242	KU-114	Mzingwa	Central	Dowa	Kasungu	Dowa	Chivala	Chadza		12.0	32	0.4				Stream / River	Mzingwa dambo	Perennial		
243	KU-115	Nango	Central	Dowa	Kasungu	Dowa	Chivala	Mphalikwa		6.0	25	0.2				Stream / River	Nango	Perennial		
244	KU-118	Mkhande	Central	Mchinji	Kasungu	Mchinji	Mlonyeni	Mkhonde	10.0	8.0	40	0.5				Stream / River	Nkhande		10 to 11 Months	30
245	KU-119	Kambalu	Central	Mchinji	Kasungu	Mchinji	Mlonyeni	Kwalala	5.0	8.0	16	0.4				Impounding dam	Bua river /Mwenda dambo	Perennial		10
246	KU-120	Chimteteka	Central	Mchinji	Kasungu	Mchinji	Mlonyeni	Chimteteka	26.0	8.0	24	1.0				Stream / River	Namilolo	Perennial		25
247	KU-122	Kacheta	Central	Mchinji	Kasungu	Mchinji	Chioshya	Kacheta	15.0	12.0	72	0.2				Impounding dam	Mwati	Seasonal	Dec-March	
248	KU-126	Kachimbwi	Central	Mchinji	Kasungu	Mchinji	Chioshya	Chimuti	15.0	10.0	30	0.5				Spring	Kachimbwi	Seasonal	Nov-May	4
249	KU-127	Nyumbu	Central	Mchinji	Kasungu	Mchinji	Chioshya	Mndunga	12.0	12.0	25	0.5	3,500	778	275	Stream / River	Nyumbu		DEC-MAY	
250	KU-128	Chitamatume	Central	Mchinji	Kasungu	Mchinji	Chioshya	Kamchiuno	10.0	6.0	33	0.5				Stream / River	Bua river /Mwenda dambo	Perennial	Jan-Dec	100
251	KU-129	Chimwere	Central	Mchinji	Kasungu	Mchinji	Chioshya	Chimwere	6.0	12.0	45	0.3				Impounding dam	Chitinthi		Nov-June	4
252	KU-132	Chimbiri	Central	Mchinji	Kasungu	Mchinji	Kalulu	Kalulu	18.0	10.0	166	0.1		28	968	Impounding dam	Rusa river	Seasonal	Nov-Sept	500
253	KU-133	Kachere	Central	Mchinji	Kasungu	Mchinji	Kalulu	Kachere	10.0	6.0	10	0.3		4000		Impounding dam	Kachere		Dec-June	1000
254	KU-135	Mlomba	Central	Mchinji	Kasungu	Mchinji	Msitu	Kankhande	8.0	10.0	173	1.5				Stream / River	Likase River	Seasonal	Jan to Oct	35
255	KU-136	Zilinthaka	Central	Mchinji	Kasungu	Mchinji	Msitu	Mavwere	10.0	8.0	69	1.6					Kankhowo	Perennial		15
256	KU-137	Tikondane	Central	Mchinji	Kasungu	Mchinji	Msitu	Batinos	6.0	10.0	13	1.3				Stream / River	Kankhowo	Seasonal	Jan to Aug	20
257	KU-138	Katawa	Central	Mchinji	Kasungu	Mchinji	Mikundi	Katawa	15.0	10.0	31	0.5				Stream / River	Kalulu	Seasonal	Jan to June	400
258	KU-139	Kayerayera	Central	Mchinji	Kasungu	Mchinji	Mikundi	Chibungwe	12.0	20.0	75	0.3				Stream / River	Lunthwe dambo	Seasonal	Dec-July	800
259	KU-140	Mankhonongo	Central	Mchinji	Kasungu	Mchinji	Mikundi	Maole	8.0	14.0	35	0.4				Stream / River	Mankhonongo dambo	Seasonal	Dec-Aug	
260	KU-141	Kalulu	Central	Mchinji	Kasungu	Mchinji	Mikundi	Machilika	8.0	12.0	46	0.2				Impounding dam	Kalulu	Seasonal	DEC-JULY	390
261	KU-142	Mbewa	Central	Mchinji	Kasungu	Mchinji	Mikundi	Mbewa	18.0	8.0	40	0.2				Stream / River	Rusa river	Seasonal	DEC-SEPT	50
262	KU-143	Kamwala	Central	Mchinji	Kasungu	Mchinji	Mikundi	Gwaligwali	15.0	25.0	200	0.8				Stream / River	Msachembe	Seasonal	Dec-Aug	300
263	KU-146	Tigwirizane	Central	Mchinji	Kasungu	Mchinji	Mkanda	Shirini	7.5	12.5	25	0.5				Stream / River	Matizi	Seasonal	Oct	6
264	KU-147	Puye	Central	Mchinji	Kasungu	Mchinji	Mkanda	Jallosi	18.0	10.0	50	0.2				Stream / River	Puye	Seasonal	Dec-July	10
265	KU-148	Kambandekha	Central	Mchinji	Kasungu	Mchinji	Mkanda	Kambandekha	0.0	0.2	30	0.4				Stream / River	Matizi	Perennial		6
266	KU-150	Mutuwanjovu	Central	Mchinji	Kasungu	Mchinji	Mkanda	Nambera	7.5	17.0	35	0.4				Stream / River	Liwelezi	Perennial		6
267	KU-151	Mthirirano	Central	Mchinji	Kasungu	Mchinji	Mkanda	Dule wakuda	0.6	0.4	38	0.1				Stream / River	Liweledzi and ndamangwe	Perennial		10
268	SA-1	Mcholi	Central	Nkhotakota	Salima	Nkhotakota	Mwansambo	Changara	18.0	14.0	56	0.3				Impounding dam	Mcholi	Seasonal	Jan-Aug	4

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
269	SA-2	Chikowa	Central	Nkhotakota	Salima	Nkhotakota	Mwansambo	Nsangaambe	19.0	19.0	70	0.3				Impounding dam	Chikowa	Seasonal	Dec- Sept	3
270	SA-3	Matseketa	Central	Nkhotakota	Salima	Nkhotakota	Mwansambo	Chisani	8.0	10.0	51					Impounding dam	Matseketa	Seasonal	Dec-Aug	3
271	SA-4	Nachere	Central	Nkhotakota	Salima	Nkhotakota	Mwansambo	Ngombele	16.0	16.0	45	0.4				Stream / River	Nachere	Perennial	Jan- Dec	4
272	SA-5	Changolomi	Central	Nkhotakota	Salima	Nkhotakota	Mwansambo	Thandaude	12.0	12.0	52	0.2				Impounding dam	Changoloni	Seasonal	Dec- Sept	3
273	SA-6	Maloto	Central	Nkhotakota	Salima	Nkhotakota	Mwansambo	Mano	7.0	5.0	15	0.5				Stream / River	Namsongole	Perennial	Year round	2
274	SA-7	Lipimbi	Central	Nkhotakota	Salima	Nkhotakota	Linga	Kalusa	20.0	10.0	166	0.1				Stream / River	Mphikana	Perennial	Year round	10
275	SA-8	Kachande	Central	Nkhotakota	Salima	Nkhotakota	Linga	Mzumala	6.0	2.0	40	0.2				Impounding dam	Lunga	Perennial		5
276	SA-9	Mtonggowamimba	Central	Nkhotakota	Salima	Nkhotakota	Linga	Tambala	9.0	0.4	20	0.4				Stream / River	Lunga	Perennial	Feb/Mar	5
277	SA-10	Mthabithabi	Central	Nkhotakota	Salima	Nkhotakota	Linga	Chinziri	15.0	2.0	20	0.4				Groundwater	Mthabithabi	Perennial	Year round	
278	SA-11	Lunga	Central	Nkhotakota	Salima	Nkhotakota	Linga	Tenje		10.0	24	0.4				Stream / River	Lunga	Perennial	January	10
279	SA-12	Kangamowa	Central	Nkhotakota	Salima	Nkhotakota	Zidyana	Chikhutu	5.0	3.0	15	0.2				Impounding dam	Kangamowa	Perennial	Year round	4
280	SA-13	Naphala	Central	Nkhotakota	Salima	Nkhotakota	Zidyana	Chapota	50.0	15.0	60	0.2				Impounding dam	Naphala	Seasonal	Dec- Oct	5
281	SA-14	Tokwe/Kamloza	Central	Nkhotakota	Salima	Nkhotakota	Zidyana	Jinga 2	10.0	4.0	20	0.2				Impounding dam	Tokwe	Perennial	Dec-Mar	
282	SA-15	Michembo	Central	Nkhotakota	Salima	Nkhotakota	Zidyana	Mangulenje	1.0	3.0	30	0.1				Impounding dam	Salioha/	Perennial	Year round	6
283	SA-16	Chabango	Central	Nkhotakota	Salima	Nkhotakota	Zidyana	Bamba 2	8.0	6.0	40	0.1				Spring	Chabango	Perennial	Seasonal	5
284	SA-17	Kauye	Central	Nkhotakota	Salima	Nkhotakota	Zidyana	Bamba 1	10.0	8.0	35	0.2				Impounding dam	Kauye	Perennial	Year round	10
285	SA-18	Luwi	Central	Nkhotakota	Salima	Nkhotakota	Zidyana	Bamba 2	20.0	15.0	80	0.1				Impounding dam	Luwi	Perennial	Year round	5
286	SA-19	Kanjeche	Central	Nkhotakota	Salima	Nkhotakota	Nkhunga	Kafuzira	12.0	12.0	73	0.8				Stream / River	Kanjeche	Perennial		8
287	SA-20	Khuyu	Central	Nkhotakota	Salima	Nkhotakota	Nkhunga	Mbiwi	20.0	20.0	81	0.8				Stream / River	Khuyu	Perennial		15
288	SA-21	Banga	Central	Nkhotakota	Salima	Nkhotakota	Nkhunga	Mwamdimba	16.0	16.0	50	1.2				Stream / River	Banga	Perennial		15
289	SA-22	Mchilazi	Central	Nkhotakota	Salima	Nkhotakota	Nkhunga	Kalengezeka	4.0	12.0	30	0.8				Stream / River	Mchilazi	Perennial		20.0
290	SA-25	Khukhuto	Central	Salima	Salima	Salima	Khombedza	Chifundo 1	8.0	8.0	35	0.2				Stream / River	Khukhuto	Seasonal	Jan- Nov	1
291	SA-26	Wata	Central	Salima	Salima	Salima	Khombedza	Wata	8.0	8.0	15	0.5				Spring	Chitawo	Seasonal		3
292	SA-27	Ngoni	Central	Salima	Salima	Salima	Khombedza	Chimpala	8.0	8.0	25	0.3				Stream / River	Liwadzi	Perennial		2
293	SA-28	Chambidza	Central	Salima	Salima	Salima	Khombedza	Chifundo 2	8.0	8.0	43	0.2				Stream / River	Dwele	Perennial		6
294	SA-29	Maonga	Central	Salima	Salima	Salima	Chinguluwe	Maonga	4.0	4.0	70	0.1				Impounding dam	Namanda	Seasonal	Dec-Aug	5
295	SA-30	Mbalame	Central	Salima	Salima	Salima	Chinguluwe	Mbalame	1.0	1.8	30	0.1				Impounding dam	Kuti	Perennial		300m
296	SA-31	Mbwemba	Central	Salima	Salima	Salima	Chinguluwe	Mwalala	2.0	2.0	10	0.2				Impounding dam	Namanda	Seasonal		10
297	SA-32	Mailosi	Central	Salima	Salima	Salima	Chinguluwe	Mailosi	3.0	3.0	30	0.1				Impounding dam	Kuti	Perennial		6
298	SA-33	Nyankhwa	Central	Salima	Salima	Salima	Chinguluwe	Nyankhwa	6.0	6.0	12	0.5				Stream / River	Chimwankhanda	Perennial		2
299	SA-36	Chimwala	Central	Salima	Salima	Salima	Chipoka	Mwenyekazi	8.0	6.0	15	0.2				Stream / River	Chimwala	Perennial		7
300	SA-37	Manda	Central	Salima	Salima	Salima	Chipoka	Manda	3.0	2.5	26	0.1				Stream / River	Limphakwe	Perennial		10
301	SA-38	Mbalame	Central	Salima	Salima	Salima	Chipoka	Mbalame	7.0	5.0	30	0.2				Stream / River	Ngodzi	Perennial		10
302	SA-41	Tilinanu	Central	Salima	Salima	Salima	Tembwe	Tembwe	6.2	6.2	12	0.8				Stream / River	Lungumadzi	Perennial		5
303	SA-42	Chimwankhuku	Central	Salima	Salima	Salima	Tembwe	Mnenula	6.0	6.0	20	0.3				Stream / River	Chimwankhuku	Perennial		3
304	SA-43	Umoyowabwino	Central	Salima	Salima	Salima	Tembwe	Kaponda	4.0	4.0	21	0.4				Stream / River	Chimwankhuku	Perennial		7
305	LL-1	Bangolowawa	Central	Lilongwe	Lilongwe	Lilongwe West	Demera	Simaewa	19.2	19.2	32	0.6	No data			Stream / River	Mude	Seasonal	Dec-July	50
306	LL-2	Utabwalero	Central	Lilongwe	Lilongwe	Lilongwe West	Demera	Utabwalero	6.0	10.0	32	0.5	13,000			Groundwater	Mwedziwaurna	Seasonal	Nov.-April	9
307	LL-3	Chapalapata	Central	Lilongwe	Lilongwe	Lilongwe West	Demera	Chapalapata	6.0	6.0	14	0.4	13,000			Spring	Banda	Perennial	January	100
308	LL-4	Napolo	Central	Lilongwe	Lilongwe	Lilongwe West	Demera	Maole	10.0	18.0	25	0.2	13,000			Stream / River	Mtete	Perennial	December	500
309	LL-5	Msayama	Central	Lilongwe	Lilongwe	Lilongwe West	Demera	Msayama	12.4	12.4		0.4	34,000			Stream / River	Kankhongono	Perennial	No data	300
310	LL-6	Kasambwe	Central	Lilongwe	Lilongwe	Lilongwe West	Demera	Kasambwe	1.4	1.4	136	0.0				Spring	Kainsa	Seasonal	Jan- May	300
311	LL-7	Chipeni	Central	Lilongwe	Lilongwe	Lilongwe West	Demera	Chipeni	5.0	5.0	21	0.5	13,000			Groundwater	Kamuna	Perennial		20
312	LL-8	Chimbwi	Central	Lilongwe	Lilongwe	Lilongwe West	Demera	Chimbwi	5.0	9.0	20	0.1	13,000			Stream / River		Seasonal	Nov -April	5
313	LL-10	Bisa	Central	Lilongwe	Lilongwe	Lilongwe West	Ukwe	Bisa	3.0	16.0	41	0.4				Stream / River	Lingadzi	Perennial		10
314	LL-11	Mphamba	Central	Lilongwe	Lilongwe	Lilongwe West	Ukwe	Mphamba	8.0	14.0	83	0.2				Groundwater	Lingadzi	Seasonal	Nov.- August	10
315	LL-12	Nkhunga	Central	Lilongwe	Lilongwe	Lilongwe West	Ukwe	Mphonde	3.0	10.0	20	0.5				Stream / River	Chilinkhanda	Perennial	Year round	15
316	LL-13	Chituwara	Central	Lilongwe	Lilongwe	Lilongwe West	Ukwe	Chituwara	7.0	10.0	13	0.8				Stream / River	Chituwara	Perennial	Year round	15
317	LL-14	Chilipa	Central	Lilongwe	Lilongwe	Lilongwe West	Ukwe	Chilipa	3.0	6.0	10	0.6				Stream / River	Bvubwe	Seasonal	Nov.-Sept.	10
318	LL-17	Gundamtengo	Central	Lilongwe	Lilongwe	Lilongwe West	Ming'ong'o	Gundamtengo	10.0	10.0	67	0.4				Impounding dam	Chipoka	Seasonal	Dec-July	6
319	LL-18	Dobvu	Central	Lilongwe	Lilongwe	Lilongwe West	Ming'ong'o	Dobvu	6.0	8.0	30	0.4				Stream / River	Kakoma	Seasonal	Dec-March	7
320	LL-19	Mchadza	Central	Lilongwe	Lilongwe	Lilongwe West	Ming'ong'o	Mchadza	5.0	5.0	32	0.4				Stream / River	Kamanzi	Perennial	Year round	10
321	LL-22	Kanyerere	Central	Lilongwe	Lilongwe	Lilongwe West	Mpingu	Kanyerere	24.0	30.0	36	0.2				Groundwater	Kanyerere	Perennial		900
322	LL-23	Kafisi	Central	Lilongwe	Lilongwe	Lilongwe West	Mpingu	Kanyerere	20.0	20.0	9 villages	0.2				Spring	Kafisi	Perennial		900
323	LL-24	Kawanda	Central	Lilongwe	Lilongwe	Lilongwe West	Mpingu	Buluzi	8.0	24.0	9 villages	0.2				Groundwater	Kawanda	Perennial		700
324	LL-25	Chirimwe	Central	Lilongwe	Lilongwe	Lilongwe West	Thawale	Funsani	10.0	16.0	43	0.4				Stream / River				5
325	LL-26	Kachowe	Central	Lilongwe	Lilongwe	Lilongwe West	Thawale	Chimtenga	12.2	20.0	136	0.4				Stream / River	Diamphwi			3
326	LL-29	Chisauka	Central	Lilongwe	Lilongwe	Lilongwe West	Thawale	Chisauka	14.0	20.0	263	0.3				Stream / River	Lilongwe	Perennial		2.5
327	LL-30	Thindi	Central	Lilongwe	Lilongwe	Lilongwe West	Malingunde	Ndodo	5.0	5.0	10	0.5				Stream / River	Lifuchere	Perennial	Jan/Feb	200
328	LL-31	Takondwa	Central	Lilongwe	Lilongwe	Lilongwe West	Malingunde	Mankhanga/ Mbalame	7.0	7.0	17	0.4				Stream / River	Natchinkha	Semi Perennial	Jan/Feb	100
329	LL-32	Mpandamadzi	Central	Lilongwe	Lilongwe	Lilongwe West	Malingunde	Kabzala/ Kapininga	5.0	5.0	10	0.5				Stream / River	Natchinkha	Semi Perennial	Jan/Feb	100
330	LL-33	Mtundu II	Central	Lilongwe	Lilongwe	Lilongwe West	Malingunde	Msenga	5.9	5.9	18	0.3				Stream / River	Mtundu	Perennial	Jan/Feb	50
331	LL-34	Mtundu I	Central	Lilongwe	Lilongwe	Lilongwe West	Malingunde	Kamzimu	8.7	8.7	26	0.3				Stream / River	Mtundu	Semi Perennial	Jan/Feb	40
332	LL-35	Yoweli-William	Central	Lilongwe	Lilongwe	Lilongwe West	Mitundu	Yoweli-William	32.0	10.0	81	0.4				Stream / River		Perennial		6
333	LL-36	Nakuswaya-Dzundi	Central	Lilongwe	Lilongwe	Lilongwe West	Mitundu	Nakuswaya	23.2	9.0	58	0.4				Stream / River	Chiwiri	Perennial		6
334	LL-37	Nanjiri	Central	Lilongwe	Lilongwe	Lilongwe West	Mitundu	Kwansira	10.0	16.0	80	0.6				Stream / River	Nanjiri	Perennial	Year round	9
335	LL-38	Naming'anzi	Central	Lilongwe	Lilongwe	Lilongwe West	Mitundu	Kumkamba	82.0	8.0	40	0.2				Stream / River	Nanjiri	Perennial		9
336	LL-39	Kachono	Central	Lilongwe	Lilongwe	Lilongwe West	Mitundu	Kachono	65.2	18.0	163	0.4				Stream / River	Nanjiri	Perennial		9
337	LL-41	Chileka	Central	Lilongwe	Lilongwe	Lilongwe West	Chileka	Kamtsalira	0.2	0.2	40	2.1				Stream / River	Chileka		Dec- June	
338	LL-43	Kakoma	Central	Lilongwe	Lilongwe	Lilongwe West	Chileka	Mphandula	20.0	40.0	100	0.4				Stream / River	Kakoma	Seasonal	Dec-October	
339	LL-45	Santhe	Central	Lilongwe	Lilongwe	Lilongwe West	Chilaza	Santhe	15.0	10.0	50	0.4				Impounding dam	Kakolo	Seasonal	Dec-June	300
340	LL-46	Katsumwa	Central	Lilongwe	Lilongwe	Lilongwe West	Chilaza	Kalazi	10.0	10.0		0.6				Impounding dam	Katsumwa	Seasonal	Dec-August	165
341	LL-47	Kaso	Central	Lilongwe	Lilongwe	Lilongwe West	Chilaza	Nyanga	15.0	12.0	235	0.6				Impounding dam	Kaso	Seasonal		150

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
342	LL-48	Nthanzi	Central	Lilongwe	Lilongwe	Lilongwe West	Chilaza	Mtoso	15.0	10.5	316	1.5				Impounding dam	Chilinkhanda	Seasonal		100
343	LL-49	Mude	Central	Lilongwe	Lilongwe	Lilongwe West	Chilaza	Chaziya	14.0	16.0	95	0.5				Stream / River	Mude	Perennial		100
344	LL-50	Mpandula	Central	Lilongwe	Lilongwe	Lilongwe West	Mlombwa	Jonjo	4.0	15.0	19	0.4				Spring	Mpandula	Perennial	Year round	2
345	LL-51	Chalata	Central	Lilongwe	Lilongwe	Lilongwe West	Mlombwa	Mkanda	2.0	18.0	19	0.4				Stream / River	Mkanda	Perennial	Year round	2
346	LL-52	Mbuka	Central	Lilongwe	Lilongwe	Lilongwe West	Mlombwa	Nkuchi	4.0	14.0	15	0.8				Stream / River	Mbuka	Perennial	Year round	1
347	LL-53	Mtubvi	Central	Lilongwe	Lilongwe	Lilongwe West	Mlombwa	Kaponda	5.0	15.0	13	0.4				Stream / River	Mtubvi	Perennial	Nov.-Sept.	3
348	LL-54	Upper- Nanjiri	Central	Lilongwe	Lilongwe	Lilongwe West	Mlombwa	Maluwa	3.2	7.5	15	0.5				Dambo	Nanjiri	Perennial	Year round	6
349	LL-56	Kadalatali	Central	Lilongwe	Lilongwe	Lilongwe West	Mwala-Nthondo	Tengo	8.0	10.0	52	0.2				Impounding dam	Kadakali	Seasonal	Dec-Sept	20
350	LL-57	Pambwe	Central	Lilongwe	Lilongwe	Lilongwe West	Mwala-Nthondo	Pambwe	10.0	7.0	17	0.6				Impounding dam	Mude Stream	Perennial	Jan-December	10
351	LL-58	Lumwila	Central	Lilongwe	Lilongwe	Lilongwe West	Mwala-Nthondo	Lumwila	14.0	18.0	86	0.1				Stream / River	Nambuma Stream		Dec-August	10
352	LL-59	Mnjonjo	Central	Lilongwe	Lilongwe	Lilongwe West	Mwala-Nthondo	Mnjonjo	9.0	14.3	179	0.1				Stream / River	Nambuma Stream	Seasonal	Dec-August	10
353	LL-60	Mnguluwe	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Nguluwe	5.0	16.0	34					Impounding dam	Chokolo			
354	LL-61	Malembo	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Malembo	5.0	10.0	40	0.4				Stream / River	Mteza	Perennial		10
355	LL-62	Chamcholo	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Chamcholo	2.0	12.0	41	0.3				Stream / River	Chamcholo	Perennial		
356	LL-63	Kamphinga	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Kaphinga	6.0	13.0	102	0.2				Impounding dam	Kamphinga	Seasonal		
357	LL-64	Lombwa	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Lombwa	5.0	10.0	74	0.2				Stream / River	Chimwang'ombe/ Mteza	Perennial		7
358	LL-65	Malikha	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Malikha	5.2	8.0	63	0.2				Stream / River	Nambuma	Perennial		4
359	LL-66	Kambulire	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Kambulire	10.0	18.0	20	1.4				Impounding dam	Matanda Dambo	Seasonal		150
360	LL-67	Mzingo	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Mzingo	15.0	19.0	40	0.5				Impounding dam	Matanda Dambo	Seasonal		152
361	LL-68	Chiputu	Central	Lilongwe	Lilongwe	Lilongwe West	Mngwangwa	Chiputu	5.0	15.0	30	0.7				Stream / River	Chokolo	Seasonal		50
362	LL-71	Ngoma	Central	Lilongwe	Lilongwe	Lilongwe East	Chiwamba	Khaila	7.0	5.0	50	0.1				Stream / River	Ngoma	Perennial	Monthly	10
363	LL-72	Kafundu	Central	Lilongwe	Lilongwe	Lilongwe East	Chiwamba	Kafundu	5.0	3.0	60	0.8				Impounding dam	Khanthiro	Perennial	Year round	20
364	LL-73	Mlera	Central	Lilongwe	Lilongwe	Lilongwe East	Chiwamba	Chikomeni	1.4	1.4	5	0.3				Stream / River	Mlera	Seasonal	Nov.-March	10
365	LL-76	Ukonde	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Manjondo	9.0	18.0	65	0.3				Stream / River	Ukonde	Perennial		8
366	LL-77	Kasekese	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Chinkhowe II	5.0	16.2	90	0.2				Spring	Kasekese	Perennial		5
367	LL-78	Mgunda	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Masinja	2.0	2.0	24	0.1				Spring	Mgunda	Perennial		5
368	LL-79	Namsongole	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Mnjeremo	16.0	16.0	90	0.2				Spring	Namsongole	Perennial		30
369	LL-80	Kavuwu	Central	Lilongwe	Lilongwe	Lilongwe East	Chitekwere	Matuta	3.0	9.0	74	0.1				Stream / River	Kavuwu	Perennial		12
370	LL-83	Kawenga	Central	Lilongwe	Lilongwe	Lilongwe East	Chigonthi	Kawenga	5.0	2.5	20	0.5				Stream / River	Lumbadzi	Perennial		100
371	LL-84	Mwati	Central	Lilongwe	Lilongwe	Lilongwe East	Chigonthi	Mchepa	8.0	12.0	35	0.2				Stream / River	Lumbadzi	Perennial		20
372	LL-85	Madzimayera	Central	Lilongwe	Lilongwe	Lilongwe East	Chigonthi	Mvugo	4.0	7.0	35	20m^2				Stream / River	Mteza	Seasonal		8
373	LL-89	Mlira	Central	Lilongwe	Lilongwe	Lilongwe East	Chitsime	Mkwende		2.0	10	0.2				Stream / River	Kambuku	Seasonal		200
374	LL-90	Mkangamira	Central	Lilongwe	Lilongwe	Lilongwe East	Chitsime	Mkangamira	10.0	7.0	34	0.3				Stream / River	Mnganganda			10
375	LL-92	Kamwankhuku	Central	Lilongwe	Lilongwe	Lilongwe East	Nyanja	Kumwembe	8.0	3.0	30	0.1		599	8435	Stream / River	Kamwankhuku	Perennial		40
376	LL-93	Pende	Central	Lilongwe	Lilongwe	Lilongwe East	Nyanja	Gomboti	14.0	14.0	145	0.1		604	8430	Stream / River	Diamphwe	Perennial		
377	LL-94	Kamwankhuku	Central	Lilongwe	Lilongwe	Lilongwe East	Nyanja	Kuchitala	2.7	2.0	15	0.1		597	8432	Stream / River	Kamwankhuku	Perennial		40
378	LL- 191	Msanja	Central	Lilongwe	Lilongwe	Lilongwe East	Nyanja	Dzuwa	60.0	17.0	150	0.1		603	8441	Stream / River	Mwanang'ombe	Perennial		5
379	LL-95	Phaso	Central	Lilongwe	Lilongwe	Lilongwe East	Mkwinda	Mwenda Phaso	5.0	7.0	30	0.2				Stream / River	Machenche	Perennial	Jan-April	
380	LL-96	Mphanzi	Central	Lilongwe	Lilongwe	Lilongwe East	Mkwinda	Mphanzi	6.0	8.0	30	0.2				Impounding dam	Nasungudzi	Perennial	Dec-March	10
381	LL-97	Njuwala	Central	Lilongwe	Lilongwe	Lilongwe East	Mkwinda	Njuwala	8.0	10.0	30	0.3				Stream / River		Perennial		20
382	LL-98	Thunga	Central	Lilongwe	Lilongwe	Lilongwe East	Mkwinda	Chukukhiro	8.5	10.5	35	0.3				Stream / River	Thunga	Seasonal	Jan-April	10
383	LL-99	Gomani	Central	Lilongwe	Lilongwe	Lilongwe East	Mkwinda	Gomani	4.0	6.0	30	0.2				Impounding dam	Gomani	Perennial		50
384	LL-104	Kamphanda	Central	Lilongwe	Lilongwe	Lilongwe East	Mpenu	Namunje	5.0	2.5	17	0.4				Stream / River	Kamphanda	Seasonal	Jan-Sept	10
385	LL-105	Mchenkhula	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Lobi	Mchenkhula	3.0	4.5	25	0.8	1,296	604	8405	Spring	Kambirimbiri	Perennial	Dec-Nov	
386	LL-106	Kalumpha	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Lobi	Kafotokoza	2.0	2.0	15	0.6	1,296	605	8408	Spring	Kalumpha	Perennial	Dec-Jan	
387	LL-107	Msunduzi	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Lobi	Kambira		4.5	24	0.2	1,250	614	84135	Spring	Msunduzi	Seasonal	Dec-Sept	
388	LL-108	Kauma	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Lobi	Kauma	1.5	3.0	131	0.7	1,327	612	8405	Spring	Kaniedza	Seasonal	Dec-August	
389	LL-109	Mlamba	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Lobi	Chimowa	1.0	2.0	54	1.0				Spring	Mlamba	Seasonal	Dec-May	
390	LL-110	Chithawale	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Chafumbwa	Zipusa	5.0	19.0	82	0.2				Stream / River	Lifidzi	Seasonal		4
391	LL-111	Kasupe	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Chafumbwa	Mtutamala	16.0	10.0	33	0.3				Spring	Diwiti	Perennial		
392	LL-112	Takumana	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Chafumbwa	Njolomola	13.0	9.0	27	0.3				Stream / River	Kachewere	Perennial		12
393	LL-113	Lidowe	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Chafumbwa	Bokosi	9.0	7.0	18	0.3				Stream / River	Kachewere	Perennial		1.2
394	LL-114	Nasato	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Chafumbwa	Mwambula	14.0	12.0	60	0.2				Stream / River	Kadala	Seasonal		4.3
395	LL-117	Gilbert	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Kabwazi	Gilbert	0.3	2.1	20	0.1				Impounding dam	Chibvulu-bvulu	Seasonal	7 months	3
396	LL-118	Domoya/Mkantho	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Kabwazi	Domoya	0.8	3.0	22	0.2				Stream / River	Msunduzi	Seasonal	9 months	5
397	LL-119	Chinkhali	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Kabwazi	Ng'ombeyaqwada	2.0	5.0	30	0.2				Stream / River	Chibvulu-bvulu	Perennial	12 months	4
398	LL-121	Chisumphi	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Linthipe	Ngongomwa	9.0	6.0	75	0.2				Stream / River	Msunduzi	Seasonal	Nov- Aug	
399	LL-122	Ngoni	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Linthipe	Zuze	19.0	15.0	36	0.2				Stream / River	Linthipe	Perennial	Year round	
400	LL-123	Chilenje	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Linthipe	Tomasi	19.0	9.0	36	0.5				Stream / River	Linthipe	Perennial	Dec - Oct	15
401	LL-124	Chitowo	Central	Dedza	Lilongwe	Thiwi-Lifidzi	Linthipe	Nyankhwi	4.0	6.0	55	0.1				Impounding dam	Msunduzi -	Seasonal		20
402	LL-127	Kasungwi	Central	Dedza	Lilongwe	Dedza Hills	Kaphuka	Mleu	10.0	10.0	94	0.1				Stream / River	Kasungwi	Perennial	Jan-Dec	
403	LL-128	Chiwoza	Central	Dedza	Lilongwe	Dedza Hills	Kaphuka	Tawe	13.0	11.0	32	0.1				Stream / River	Chiwoza	Perennial	Jan-Dec	1
404	LL-129	Kumaano	Central	Dedza	Lilongwe	Dedza Hills	Kaphuka	Kumaano	6.0	5.0	60	0.0				Groundwater	Kakolo	Seasonal	Jan-Oct	2
405	LL- 131	Chiwanga	Central	Dedza	Lilongwe	Dedza Hills	Mayani	Mlolo	12.0	18.0	120	0.2				Spring	Chiwanga	Perennial		150
406	LL-132	Dziwelamizu	Central	Dedza	Lilongwe	Dedza Hills	Mayani	Mwadzama	5.0	12.0	20	0.3				Dambo	Dziwelamizu	Perennial		50
407	LL-133	Namikoko	Central	Dedza	Lilongwe	Dedza Hills	Mayani	Nyongo	10.5	15.0	83	0.1				Stream / River	Namikoko			50
408	LL-134	Thima- Mkanjenda	Central	Dedza	Lilongwe	Dedza Hills	Mayani	Mkanjenda	12.0	18.0	75	0.2				Stream / River	Thima	Perennial	Year round	30
409	LL-135	Chindindi	Central	Dedza	Lilongwe	Dedza Hills	Mayani	Lungala	3.4	5.0	15	0.2				Stream / River	Chindindi	Perennial	Year round	15
410	LL-136	Tsakalaka	Central	Dedza	Lilongwe	Dedza Hills	Mtakataka	Chatuwa	6.0	4.0	20	0.4				Groundwater	Nadzipula	Perennial		20
411	LL-137	Kamwisa	Central	Dedza	Lilongwe	Dedza Hills	Mtakataka	Kamwisa	6.0	6.0	25	0.4		364	709	Lake	Lake Malawi	Perennial		
412	LL-138	Mankhwa	Central	Dedza	Lilongwe	Dedza Hills	Mtakataka	Kafuka	2.0	6.0	15	0.4		358	714	Lake	Lake Malawi	Perennial		
413	LL-139	Katonga	Central	Dedza	Lilongwe	Dedza Hills	Mtakataka	Kasakala	10.0	6.0	30	0.4		335	705	Stream / River	Nadzipula	Perennial	Year round	20
414	LL-140	Mkundu	Central	Dedza	Lilongwe	Dedza Hills	Mtakataka	Chikakuda	10.0	10.0	60	0.4		335	125	Lake	Lake Malawi	Perennial	Year round	20
415	LL-143	Msongwe	Central	Dedza	Lilongwe	Dedza Hills	Kanyama	Tembwe	11.0	6.5	65	0.1		643	8431	Stream/Spring	Msongwe	Perennial	Year round	3

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
416	LL-144	Chizeze	Central	Dedza	Lilongwe	Dedza Hills	Kanyama	Khombe	22.0	12.0	25	0.3		644	8435	Stream / River	Chizeze	Perennial	Year round	4
417	LL-145	Dombole	Central	Dedza	Lilongwe	Dedza Hills	Kanyama	Kuseli	25.0	19.5	195	0.1		637	8425	Stream/Spring	Dombole	Perennial	Year round	12
418	LL-192	Chikhasu	Central	Dedza	Lilongwe	Dedza Hills	Kanyama	Kasumbu & 4 others		18.0	80	0.6	1,480	E34-22	S14-19	Stream / River	Chikhasu	Perennial	Year round	4
419	LL-149	Kalungama	Central	Dedza	Lilongwe	Dedza Hills	Golomoti	Mtandamara	15.0	15.0	87	0.2				Impounding dam	Kalungama	Seasonal	Dec-June	3
420	LL-150	Chipudzi	Central	Dedza	Lilongwe	Dedza Hills	Golomoti	Kalumo	8.0	8.0	63	0.1				Impounding dam	Chipudzi	Seasonal	Dec-June	8
421	LL-153	Nankhokwe	Central	Dedza	Lilongwe	Dedza Hills	Bembeke	Mkulu	18.0	10.0	100	0.2	5,050	51	7	Stream / River	Nankhokwe	Perennial	January	5
422	LL-163	Kapalikize	Central	Ntcheu	Lilongwe	Ntcheu	Manjawira	Chimpini	4.0	2.0	19	0.2	880	690	8344	Stream / River	Kapalikize	Seasonal	Jan-Nov	2
423	LL-164	Kalambo	Central	Ntcheu	Lilongwe	Ntcheu	Manjawira	Sabwera II	19.0	18.0	72	0.3	760	703	8347	Stream / River	Kalambo	Seasonal	Jan- Oct	
424	LL-165	Nachitheme	Central	Ntcheu	Lilongwe	Ntcheu	Manjawira	Gumbi	12.0	8.0	42	0.2	720	701	8345	Stream / River	Nachitheme			5
425	LL-166	Nsanga	Central	Ntcheu	Lilongwe	Ntcheu	Bilira	Majiga	0.4	0.8	50	0.2		023	721	Stream / River	Nsanga	Perennial	Year round	10
426	LL-167	Chigwirizano	Central	Ntcheu	Lilongwe	Ntcheu	Bilira	Austen	2.0	4.0	30			060	674	Stream / River	Liwawadzi	Seasonal	August	12
427	LL-168	Chitale	Central	Ntcheu	Lilongwe	Ntcheu	Bilira	Mtalika	0.3	4.0	150	0.0		066	582	Stream / River	Linengwe	Seasonal	Sept	11
428	LL-169	Nankhono	Central	Ntcheu	Lilongwe	Ntcheu	Bilira	Lazaro	0.4	1.0	30	0.3		057	582	Impounding dam	Linengwe	Seasonal	Oct	30
429	LL-170	Namwili	Central	Ntcheu	Lilongwe	Ntcheu	Bilira	Tambala	0.6	0.8	12	0.1		971	675	Stream / River	Kalungama	Perennial	Year round	15
430	LL-171	Namkokwe Upper	Central	Ntcheu	Lilongwe	Ntcheu	Njolomole	Kalima1&2	12.0	12.0	20	0.1	1,500	6530	84066	Stream / River	Namkokwe	Perennial		1.5
431	LL-172	Mkazimasika	Central	Ntcheu	Lilongwe	Ntcheu	Njolomole	Kalimali	3.0	6.0	20	6.0	1,500	6532	84065	Stream / River	Mkazimasika	Perennial		1.5
432	LL-173	Mdeka	Central	Ntcheu	Lilongwe	Ntcheu	Njolomole	Chipusile	4.0	5.0	25	0.2	1,500	6705	83845	Impounding dam	Mdeka	Perennial		2.5
433	LL-174	Matenya	Central	Ntcheu	Lilongwe	Ntcheu	Njolomole	Chibwana	4.0	4.0	17	0.2	1,500	6644	83945	Stream / River	Mathamadzi	Perennial		5.5
434	LL-175	Manyenje	Central	Ntcheu	Lilongwe	Ntcheu	Njolomole	Manyenje	4.0	4.0	10	4.0	1,500	6945	84039	Stream / River	Namkokwe	Perennial		5.0
435	LL-185	Sesani	Central	Ntcheu	Lilongwe	Ntcheu	Kandeu	Sesani	21.0	11.0	62	0.3	1,020	670	8372	Stream / River	Linkhuwe	Perennial		10.0
436	LL-189	Nansengwa	Central	Ntcheu	Lilongwe	Ntcheu	Sharpevalle	Chitsulu	10.0	2.0	50	0.1						Perennial		2.0
437	LL-190	Mtambalika II	Central	Ntcheu	Lilongwe	Ntcheu	Sharpevalle	Mtambalika	8.0	5.0	50	0.1				Impounding dam	Liwadzi	Perennial		5.0
438	MHG 1	Changauska	South	Mangochi	Machinga	Mangochi	Mpilipili	Lukoloma	29.0	9.0	30	0.6	1,600			Groundwater	Chingauska			
439	MHG 2	Kanthunkhama	South	Mangochi	Machinga	Mangochi	Mpilipili	Nkoka	4.8	22.5	15	1.5	1,650			Stream / River	Chanje	perenial	dec -	6
440	MHG 3	Liwale	South	Mangochi	Machinga	Mangochi	Mpilipili	Mdala Chitenje	11.0	3.5	13	0.8	1,650			Stream / River	Liwale	perenial		5
441	MHG 4	Liwoma	South	Mangochi	Machinga	Mangochi	Mpilipili	Onani	32.0	8.5	30	1.0	1,650			Stream / River	Litisa	perenial	dec - november	8
442	MHG 5	Masinda	South	Mangochi	Machinga	Mangochi	Mpilipili	Mdala Chitenje	20.0	8.0	20	0.8	1,700			Stream / River	Lipangati	perenial		10
443	MHG 6	Madalitso	South	Mangochi	Machinga	Mangochi	Mpilipili	Mwachikupa	30.0	12.0	30	1.0	1,750			Stream / River	Lipangati	perenial		7
444	MHG 7	Ngombwa	South	Mangochi	Machinga	Mangochi	Nasenga	Mwichande	200.0	50.0	250	0.2				Stream / River	Mtemangokwe	perenial		25
445	MHG 8	Mpembena-changali	South	Mangochi	Machinga	Mangochi	Nasenga	Mpembena	30.0	20.0	150	0.2				Stream / River	Kulungwi	seasonal	november	15
446	MHG 9	Mkupekupe	South	Mangochi	Machinga	Mangochi	Nasenga	Kwitambo	120.0	100.0	400	0.3					Lake Malombe	perenial		
447	MHG 10	Chiwimbi	South	Mangochi	Machinga	Mangochi	Nasenga	Nchisi	40.0	15.0	100	0.4				Stream / River	Nasenga river	seasonal	november	25
448	MHG 11	Chapola	South	Mangochi	Machinga	Mangochi	Nasenga	Luwembe	120.0	120.0	400	0.3				Lake	Lake Malombe			
449	MHG 13	Makumba	South	Mangochi	Machinga	Mangochi	Lungwenya	Makumba	10.0	10.0	150	0.1				Stream / River	Mkuli	perenial		10
450	MHG 14	Lusalumwe	South	Mangochi	Machinga	Mangochi	Lungwenya		20.0	15.0	150	0.1				Stream / River	Lusalumwe	perenial		7
451	MHG 15	Kalanje	South	Mangochi	Machinga	Mangochi	Lungwenya	Biti Kalanje	10.0	6.0	150	0.1				Impounding dam	Lungwena	seasonal	september	7
452	MHG 16	Lutende	South	Mangochi	Machinga	Mangochi	Lungwenya	Namalaka	1.8	1.8	32	0.1				Spring	Lutende	perenial		7
453	MHG 19	Thema	South	Mangochi	Machinga	Mangochi	Nankumba	Namkumba	23.0	20.0	110	0.2		944	105	Impounding dam	Thema	perenial	throughout	20
454	MHG 20	Matenje	South	Mangochi	Machinga	Mangochi	Nankumba	Jumanbanga	26.0	22.0	120	0.2		979	17	Stream / River	Nanyange	perenial	throughout	10
455	MHG 21	Namawawu	South	Mangochi	Machinga	Mangochi	Nankumba		21.0	21.0	210	0.1		958	178	Stream / River	Namawawu	perenial	throughout	
456	MHG 23	Nangalamu	South	Mangochi	Machinga	Mangochi	Masuku	Budu	14.0	10.0	60	0.2				Spring	Nangalamu	perenial	throughout	5
457	MHG 24	Chinyamota	South	Mangochi	Machinga	Mangochi	Masuku	Budu	12.0	8.0	57	0.2				Spring	Chinyamoto	perenial	throughout	4
458	MHG 25	Ntiya	South	Mangochi	Machinga	Mangochi	Masuku	Mkopa	15.0	10.0	98	0.1				Spring	Mtiya	perenial	throughout	6
459	MHG 26	Nangapoche	South	Mangochi	Machinga	Mangochi	Masuku	Ngokwe	12.0	9.0	107	0.1				Stream / River	Nangapoche	perenial	throughout	3.0
460	MHG 27	Namiyaja	South	Mangochi	Machinga	Mangochi	Masuku	Masuku	5.0	9.0	44	0.2				Stream / River	Namiyaya	perenial	throughout	3
461	MHG 28	Nyungwa	South	Mangochi	Machinga	Mangochi	Chilipa	Naunje	15.0	29.0	293	0.1				Stream, Spring, Groundwater	Nyungwa	seasonal	april-sep@tember	4
462	MHG 29	msasa	South	Mangochi	Machinga	Mangochi	Chilipa	Malopa	20.0	2.0	50	0.4				Stream / River	Msasa	perenial	throughout	3
463	MHG 30	Mphika	South	Mangochi	Machinga	Mangochi	Chilipa	Nikisi	54.0	30.0	131	0.4				Stream / River	Mphika	perenial	throughout	8
464	MHG 31	Kabudila	South	Mangochi	Machinga	Mangochi	Chilipa	Songa	186.0	138.0	310	0.6				Stream / River	Kabudira	perenial	throughout	8
465	MHG 32	Iwundu	South	Mangochi	Machinga	Mangochi	Chilipa	Nikisi	44.0	22.0	150	0.2				Stream / River	Liwundu	seasonal	november - august	2
466	MHG 34	Sambalendo	South	Mangochi	Machinga	Mangochi	Mthilamanga	Kaupa	0.5	2.5	20	0.1				Stream / River	Mtemankhokwe	perenial	throughout	7
467	MHG 35	Namiasi	South	Mangochi	Machinga	Mangochi	Mthilamanga	Chawa	1.2	45.0	30	0.2				Stream / River	Namiasi	perenial	throughout	8
468	MHG 36	Namitsitsi	South	Mangochi	Machinga	Mangochi	Mthilamanga	Mnomba	8.0	4.5	22	0.5				Stream / River	Nasenga	perenial	throughout	9
469	MHG 37	Njomboche	South	Mangochi	Machinga	Mangochi	Katuli	Bakali	1.5	4.0	14	0.3				Stream / River	Njomboche	perenial	throughout	2
470	MHG 38	Naluwale	South	Mangochi	Machinga	Mangochi	Katuli	Matimbanya	0.5	1.4	6	0.2				Spring	Naluwale			
471	MHG 39	Ndinji	South	Mangochi	Machinga	Mangochi	Katuli	Mtelera								Spring	Ndonji			
472	MHG 40	Mlambala	South	Mangochi	Machinga	Mangochi	Ntiya	Mlambala	10.0	10.0	40	0.3				Stream / River	Lusangwisi	perenial	throughout	10
473	MHG 41	Chilambo	South	Mangochi	Machinga	Mangochi	Ntiya	Chilambo	20.0	10.0	200	0.1				Groundwater	Chilambo	perenial	throughout	
474	MHG 42	Naluwale	South	Mangochi	Machinga	Mangochi	Ntiya	Mwawa	20.0	20.0	200	0.1				Groundwater		perenial		
475	MHG 43	Mateketa	South	Mangochi	Machinga	Mangochi	Ntiya	Mlumbwa	10.0	10.0	50	0.2				Stream / River	Mandimba	perenial	throughout	12
476	MHG 44	Namasato	South	Mangochi	Machinga	Mangochi	Mbwadzulu	Zimbawadi	5.0	5.0	25					Spring	Mwendo	seasonal	up to june	7
477	MHG 45	Namakoko	South	Mangochi	Machinga	Mangochi	Mbwadzulu	Mdala Chikowa 11	20.0	10.0	25	0.8				Stream / River	Namikoko	perenial	throughout	3
478	MHG 46	Mkandwe	South	Mangochi	Machinga	Mangochi	Mbwadzulu	Chilombo	15.0	12.0	32	0.4				Others	Mkandwe Stream	seasonal		
479	MHG 47	Mkombezi	South	Mangochi	Machinga	Mangochi	Mbwadzulu	Namgoma	6.0	8.0	19					Stream / River	Mkombezi	seasonal	november-june	6
480	MHG 48	Tiyesenawo	South	Mangochi	Machinga	Mangochi	Mbwadzulu	Nona	10.0	10.0	36	0.4				Others	Lake	perenial		1
481	MHG 49	Lunguzi	South	Balaka	Machinga	Balaka	Utale	Ntaja	9.0	10.0	186	0.1				Stream / River	Lake	perenial	throughout	60
482	MHG 50	Nakatale	South	Balaka	Machinga	Balaka	Utale	Singano	6.0	12.0	93	0.2				Stream / River	Shire	perenial	throughout	60
483	MHG 51	Ntchesi	South	Balaka	Machinga	Balaka	Utale	Soza	8.0	10.0	89	0.2				Stream / River	Shire	perenial	throughout	60
484	MHG 52	Tiyese	South	Balaka	Machinga	Balaka	Utale	Balaka	8.0	10.0	72	0.3				Stream / River	Shire	perenial	throughout	60

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
485	MHG 53	Makande	South	Balaka	Machinga	Balaka	Utale	Balaka	6.0	9.0	101	0.2				Stream / River	Shire	perenial	throughout	60
486	MHG 54	Matako panja	South	Balaka	Machinga	Balaka	Phalula	Nkhande	6.0	4.0	25	0.3				Stream / River	Matakopanja	seasonal	december -	10
487	MHG 55	Ngaliche 11	South	Balaka	Machinga	Balaka	Bazale	Ngaliche	3.0	2.0	20	0.2				Stream / River	Liwawazi	seasonal	december -	
488	MHG 56	Chikhumbe	South	Balaka	Machinga	Balaka	Bazale	Ngonga	10.0	5.0	50	0.2				Stream / River	Liwawazi	seasonal	december -	20
489	MHG 57	Pilitu	South	Balaka	Machinga	Balaka	Bazale	Pilitu	3.0	1.5	20	0.2				Stream / River	Liwawazi	seasonal	december -	10
490	MHG 58	Ngaliche 1	South	Balaka	Machinga	Balaka	Bazale	Ngaliche	5.0	5.0	30	0.2				Stream / River	Liwawazi	seasonal	december -	15
491	MHG 59	Masenjere(Liwawazi)	South	Balaka	Machinga	Balaka	Bazale	Bazale	15.0	10.0	150	0.1				Stream / River	Liwawazi	seasonal	november -	20
492	MHG 60	Namingalala	South	Balaka	Machinga	Balaka	Ulongwe	Chikofongo	30.0	20.0	266	0.6				Stream / River	Shire	perenial		
493	MHG 61	Njale	South	Balaka	Machinga	Balaka	Ulongwe	Chikolongo	33.0	18.5	300	0.6				Stream / River	Shire	perenial		
494	MHG 62	Bimbi	South	Balaka	Machinga	Balaka	Ulongwe	Bimbi	20.0	25.0	230	0.6				Stream / River	Shire	perenial		
495	MHG 63	Chibisa	South	Balaka	Machinga	Balaka	Ulongwe	Masakapenda	18.0	22.0	350	0.5				Stream / River	Shire	perenial		
496	MHG 64	M'mwelamwayi	South	Balaka	Machinga	Balaka	Ulongwe	Chatama	20.0	33.0	240	0.5				Stream / River	Shire	perenial		
497	MHG 65	Nthunde	South	Balaka	Machinga	Balaka	Rivirivi	Nthunde	144.0	14.8	73	2.0						seasonal		30
498	MHG 66	Magombela	South	Balaka	Machinga	Balaka	Rivirivi	Magombere	204.0	10.2	102	1.0				Stream / River	Rivirivi	seasonal		20
499	MHG 67	Nachamba	South	Balaka	Machinga	Balaka	Rivirivi	Nachamba	70.0	7.0	35	2.0				Stream / River	Rivirivi	seasonal		30
500	MGH 68	Magombo	South	Balaka	Machinga	Balaka	Rivirivi	Magombo	146.0	14.6	73	2.0				Stream / River	Rivirivi	perenial		20
501	MHG 69	Phalula	South	Balaka	Machinga	Balaka	Rivirivi	Phalula	226.0	11.3	113	2.0				Stream / River	Rivirivi	seasonal		20
502	MHG 70	Mawazi Irrigation	South	Balaka	Machinga	Balaka	Mpilisi	Msamati 1	15.0	15.0	120	0.1				Stream / River	Shire	perenial	throughout	60
503	MHG 71	Gambe	South	Balaka	Machinga	Balaka	Mpilisi	Gambe	6.0	6.0	55	0.1				Stream / River	Shire	perenial	throughout	50
504	MHG 72	Namadidi	South	Balaka	Machinga	Balaka	Mpilisi	Jailosi	10.0	10.0	30	0.1				Stream / River	Shire	perenial	throughout	50
505	MGH 73	Mawira	South	Balaka	Machinga	Balaka	Mpilisi	Sitima	10.0	10.0	261	0.0				Stream / River	Shire	perenial	throughout	60
506	MHG 74	Namitungwi	South	Balaka	Machinga	Balaka	Mpilisi	Msamati 11	10.0	10.0	312	0.0				Stream / River	Shire	perenial	throughout	50
507	MHG 76	Mwawa	South	Machinga	Machinga	Machinga	Nsanama	Mwawa	15.0	15.0	50	0.3				Stream / River	Nambazi	seasonal	december-october	12
508	MHG 78	Namiyanga	South	Mechinga	Machinga	Machinga	Nsanama	Namosi	12.0	12.0	50					Stream / River	Namiyanga	perenial	throughout	7
509	MHG 80	Mangulu	South	Machinga	Machinga	Machinga	Nampenya	Kamlinie	5.0	5.0	15	0.3				Groundwater	Mangulu dambo			
510	MHG 81	Sankhwi	South	Machinga	Machinga	Machinga	Nampenya	Machilinga	5.0	5.0	25	0.2				Stream / River	Sangwi	seasonal	december-october	8
511	MHG 83	Matinginya	South	Machinga	Machinga	Machinga	Nampenya	Chitimba	10.0	10.0	80	0.1				Impounding dam	Mpiri	seasonal	december-october	10
512	MHG 84	Ndakota Irrigation	South	Machinga	Machinga	Machinga	Mbonekera	Makwenda	14.8		198	0.2				Stream / River	Masanje	perenial	october	5
513	MHG 86	Mbonekela	South	Machinga	Machinga	Machinga	Mbonekera	Mwambala/Bili	10.0			0.2				Stream / River	Namandanje	perenial	october	7
514	MHG 87	Namupinguja	South	Machinga	Machinga	Machinga	Nyambi	Mbalwe	16.0	6.0	64	0.3		818	799	Impounding dam	Nampinguta	seasonal	november-june	
515	MHG 88	Chituche	South	Machinga	Machinga	Machinga	Nyambi	Mwitika	16.0	7.0	35	0.2		81	94	Stream / River	Chituche	perenial		
516	MHG 89	Chigombe	South	Machinga	Machinga	Machinga	Nyambi	Makoka	10.0	6.0	50	0.2		72	82	Spring	Chigombe	perenial	throughout	
517	MHG 90	Puluma	South	Machinga	Machinga	Machinga	Nyambi	Pulula	7.5	3.0	15	0.2		795	760	Stream / River	Pumula	perenial	throughout	
518	MHG 91	Kwiyo	South	Machinga	Machinga	Machinga	Nyambi	Nduzani	10.0	5.0	45	0.2				Stream / River	Impounding dam	seasonal	november-	4
519	MHG 92	Lifune	South	Machinga	Machinga	Machinga	Nyambi	Bakali	15.0	12.0	75	0.2		788	858	Stream / River	Lifune	perenial	throughout	12
520	MHG 94	M'balaka	South	Machinga	Machinga	Machinga	Mtubwi	M'balaka	35.0	10.0	98	0.4	medium	482	212	Stream / River	Mberesi, Matengo, M'sopa, Chiwale, Kaiomboka	perenial		4
521	MHG 95	Lipongo	South	Machinga	Machinga	Machinga	Mtubwi	Lipongo	30.0	15.0	150	0.2	medium	473	229	Stream / River	Bubu, Matolola, Mandimba	perenial		2
522	MHG 96	Chididi	South	Machinga	Machinga	Machinga	Mtubwi	Nsinji	17.2	8.0	20	0.4	medium	633	194	Stream / River	Namiyaya	perenial		4
523	MHG 97	Malora	South	Machinga	Machinga	Machinga	Mtubwi	Mboma	8.0	5.0	45	0.2	medium	445	280	Stream / River	Milora	perenial		2
524	MHG 98	Namatunu	South	Machinga	Machinga	Machinga	Mtubwi	Fidesi	14.8	6.4	64	0.4	medium	633	198	Stream / River	Nangasu	perenial		3
525	MHG 103	Chitundu	South	Machinga	Machinga	Machinga	Chuweo	Mtukazi Makwemba	6.0	12.0	115	0.1					Chitundu	seasonal	December-May	5
526	MHG 104	Mkopunda	South	Machinga	Machinga	Machinga	Chikweo	Naituli	8.0	13.0	60	0.2	717	35	14	Stream / River	lifune	seasonal	December - May	5
527	MHG 105	Sangwi	South	Machinga	Machinga	Machinga	Chikweo	Saomba	7.0	15.0	63	0.2	717	35	14	Stream / River	Sangwi	seasonal	december - may	5
528	MHG 106	Muruma 1	South	Machinga	Machinga	Machinga	Ngwelero	Muhiriri	4.0	2.0	10	0.2				Groundwater	Muruma	seasonal	November - June	1
529	MHG 107	Tankhuni	South	Machinga	Machinga	Machinga	Ngwelero	Namalika	3.0	2.0	11	0.2				Groundwater	Tankhuni	seasonal	November - April	2
530	MHG 108	Namadzi	South	Machinga	Machinga	Machinga	Ngwelero	Ngwelero	1.5	1.2	5	0.2				Stream / River	Namadzi	seasonal	November - September	10
531	MHG 109	Muruma 2	South	Machinga	Machinga	Machinga	Ngwelero	Mukheya	5.0	3.0	12	0.2				Stream / River	Muruma	seasonal	November - August	5
532	MHG 110	Chitukuko	South	Machinga	Machinga	Machinga	Ngwelero	Bwanausi	12.0	3.0	18	0.2				Groundwater	Ngozi	seasonal	November - September	6
533	MHG 114	Likangala	South	Zomba	Machinga	Zomba	Thondwe	Napwanga	20.0	15.0	250	0.2				Stream / River		Perennial		5
534	MHG 116	Kalalichi	South	Zomba	Machinga	Zomba	Chingale	Kalalichi	25.0	10.0	412	0.1				Stream / River	Mafusi	Seasonal	Sept/Oct	4
535	MHG 117	Tiyanjane	South	Zomba	Machinga	Zomba	Chingale	Bikinani	35.0	19.0	200	0.2				Stream / River	Namitengo	Perennial		10
536	MHG 118	Ng'omba	South	Zomba	Machinga	Zomba	Chingale	Ng'omba	8.0	7.0	49	0.0				Stream / River	Mafusi	Seasonal	Sept/Oct	4
537	MHG 119	Tiyese	South	Zomba	Machinga	Zomba	Chingale	Kumwinje	25.0	18.0	147	0.2				Stream / River	Kalira	Seasonal	October	7
538	MHG 120	Luwezi	South	Zomba	Machinga	Zomba	Chingale	Namphula	18.0	20.0	212	0.1				Stream / River	Luwezi	Seasonal	Oct/Nov	5
539	MHG 121	Chileka	South	Zomba	Machinga	Zomba	Mpokwa	Mwambo	3.0	12.0	100	0.5				Stream / River	Likangala	Perennial	Year round	5
540	MHG 122	Chikhawa	South	Zomba	Machinga	Zomba	Mpokwa	Makulukula	2.0	17.0	250	0.5				Stream / River	Likangala	River	Year round	10
541	MHG 123	Naminga	South	Zomba	Machinga	Zomba	Mpokwa	Chilipaine	3.0	12.0	150	0.5				Stream / River	Phalombe	Seasonal	Up to	
542	MHG 124	Namalindi	South	Zomba	Machinga	Zomba	Mpokwa	Namalindi	7.0	8.0	350	0.5				Stream / River	Nkokanguwo	Seasonal	Oct/Nov	
543	MHG 125	Makhokwe	South	Zomba	Machinga	Zomba	Mpokwa	Makhokwe	3.0	15.0	175	0.5				Stream / River	Thondwe	Perennial		
544	MHG 126	Khome	South	Zomba	Machinga	Zomba	Nsondole	Manyela	20.0	20.0	160	0.1				Stream / River	Songani	Seasonal	Dec-sept	8
545	MHG 127	Chilalani	South	Zomba	Machinga	Zomba	Nsondole	Namadingo	20.0	15.0	150	0.1				Stream / River	Songani	Seasonal	Dec-sept	8

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
546	MHG 128	Chilingano	South	Zomba	Machinga	Zomba	Nsondole	Kuphanga	30.0	20.0	200	0.2				Stream / River	Domasi	Perennial		
547	MHG 129	Katambasula	South	Zomba	Machinga	Zomba	Nsondole	Mkumbira	35.0	18.0	110					Stream / River	Katambasula	Seasonal	Dec- July	3
548	MHG 130	Manyamula	South	Zomba	Machinga	Zomba	Likangala	Manyamula	20.0	20.0	300	0.3				Stream / River	Likangala	Perennial		
549	MHG 131	Nanyenga	South	Zomba	Machinga	Zomba	Likangala	Mwanthunga	20.0	10.0	250	0.1				Stream / River	Nanyenga	Seasonal	Nov-July	3
550	MHG 132	Sambaifa	South	Zomba	Machinga	Zomba	Likangala	Mbalu	20.0	20.0	250	0.3				Stream / River	Likangala	Perennial		5
551	MHG 133	Namano	South	Zomba	Machinga	Zomba	Likangala	Maliwata	20.0	20.0	200	0.1				Stream / River	Naisi / Namano	Seasonal	Nov-July	10
552	MHG 134	Chitukuko	South	Zomba	Machinga	Zomba	Likangala	Khanda	20.0		500					Stream / River	Naizi	Seasonal	August	
553	MHG 135	Matunduzi	South	Zomba	Machinga	Zomba	Likangala	Makuluni	20.0	11.0	200					Impounding dam	Matunduzi	Seasonal		
554	MHG 136	Nyangu 1	South	Zomba	Machinga	Zomba	Likangala	Nyangu 1	20.0		150					Stream / River	Likangala	Seasonal		
555	MHG 139	Chigumula (Manemba)	South	Zomba	Machinga	Zomba	Dzaone	Manawa	85.0	60.0	270	0.4				Impounding dam	Manemba	Perennial		900
556	MHG 140	Kasiside	South	Zomba	Machinga	Zomba	Dzaone	Mweta	12.0	16.0	70	0.5				River/Spring	Kasiside	Seasonal	August	60
557	MHG 141	Ulongwe	South	Zomba	Machinga	Zomba	Dzaone	Taombe	15.0	11.0	75	0.4				River/Spring	Ulongwe	Perennial	Year round	8
558	MHG 142	Mpira Katete	South	Zomba	Machinga	Zomba	Malosa	Katete	10.0	5.0	46	0.2				Stream / River	Mpira	Perennial	February	25
559	MHG 143	Domasi(Maemba irrig group)	South	Zomba	Machinga	Zomba	Malosa	Malemia	17.0	5.0	25	0.0				Stream / River	Domasi	Perennial		10
560	MHG 144	Lifani - Mikundi	South	Zomba	Machinga	Zomba	Malosa	Mikundi		4.0	62	0.1				Stream / River	Lifani	Perennial		
561	MHG 145	Jauma	South	Zomba	Machinga	Zomba	Malosa	Jauma	6.0	6.0	27					Stream / River	Lifani	Perennial		
562	MHG 146	Nkwela	South	Zomba	Machinga	Zomba	Malosa	Nkwela	10.0	6.0	10	0.3				Stream / River	Songani			10
563	BLT-9	Donkeni	South	Mwanza	Blantyre	Mwanza	Mwanza	Donkeni	2.00	2.00	10	0.10				Stream		Seasonal		2
564	BLT-10	Kapherana Irrigation	South	Mwanza	Blantyre	Mwanza	Mwanza	Kapherana	2.80	1.20	20	0.10				Stream	Yolodano	Perennial		2
565	BLT-13	Chikoleka Irrigation Scheme	South	Mwanza	Blantyre	Mwanza	Thambani	Chikoleka	2.00	2.00	15	0.80				Stream	Katongole	Perennial		2
566	BLT-15	Mbamba Irrigation Scheme	South	Mwanza	Blantyre	Mwanza	Thambani	Miniale	5.00	5.00	15	0.80				Stream	Madzimaera	Perennial		1 to 2
567	BLT-17	Nkhombe	South	Neno	Blantyre	Neno	Lisungwi	Symon	6.00	3.00	15	0.40	90	94	1200	Stream	Nkhombe	Seasonal	November - August	10
568	BLT-18	Khombwe	South	Blantyre	Blantyre	Blantyre	Kunthembwe	Mulima	20.00	15.00	32	0.70	20			River	Mulira and Khombwe	Perennial		20
569	BLT-19	Makina	South	Blantyre	Blantyre	Blantyre	Lirangwe	Makina		5.00	30	0.10	2000	17	84	Impounding dam	Makina			50
570	BLT-24	Chimwavi 2	South	Blantyre	Blantyre	Blantyre	Ntonda	Chasemphana	8.00	3.00	5	0.60		36	7	Stream	No name	Perennial		2
571	BLT-25	Chimwavi 1	South	Blantyre	Blantyre	Blantyre	Ntonda	Chasemphana	10.00	4.00	6	0.60		37	7	Stream	No name	Perennial		2
572	BLT-26	Nantipwiri 2	South	Blantyre	Blantyre	Blantyre	Ntonda	Nangumi	5.40	5.50	6	1.10		44	24	Spring	Nantipwiri	Perennial		3
573	BLT-27	Mang'omba	South	Blantyre	Blantyre	Blantyre	Ntonda	Mang'omba		7.00	6	12.00		43	18	River	Makungwa	Perennial		7
574	BLT-28	Nantipwili 1	South	Blantyre	Blantyre	Blantyre	Ntonda	Sumbuleta	8.00	4.50	12	0.40				Spring, ground		Perennial		
575	BLT-30	Chileka	South	Blantyre	Blantyre	Blantyre	Kunthembwe	Nkata	15.00	10.00	50	0.30	2425	103	674		Dam (Chileka	Perennial		60
576	BLT-31	Makungwa	South	Blantyre	Blantyre	Blantyre	Kunthembwe	Kunthembwe	15.00	10.00	10	1.00	2075	78	697	Stream	Makungwa	Perennial		10
577	BLT-32	Khungulu	South	Blantyre	Blantyre	Blantyre	Kunthembwe		17.00	15.00	60	0.35	2300	114	705	Stream	Khumgulu	Perennial		40
578	BLT-33	Mmwala	South	Phalombe	Blantyre	Phalombe	Nkhulambe	Mmwala	30.00	18.00	170	0.20				Spring	Senjere spring	Perennial		3
579	BLT-34	Mulelemba	South	Phalombe	Blantyre	Phalombe	Nkhulambe	Mulelemba	15.00	10.00	95	0.20	2450	797	8237	Spring		Perennial		3
580	BLT-35	Nanseta	South	Phalombe	Blantyre	Phalombe	Nkhulambe	Nanseta	25.00	15.00	120	0.20				Stream	Matenje stream	Perennial		4
581	BLT-36	Namazengeza	South	Phalombe	Blantyre	Phalombe	Kasongo	Boidi	2.00	12.90	129	0.10				River	Sombani	Seasonal	December to October	9
582	BLT-37	Chisikesi Dambo	South	Chiradzulu	Blantyre	Chiradzulu	Mombezi	Makunami	3.50	4.00	10	0.40	2900	315	475	River	Chisekesi	Perennial		3
583	BLT-38	Mudi	South	Chiradzulu	Blantyre	Chiradzulu	Mbulumbuzi	Buleya	10	5	34	0.30	3300	732500	826790		Mchembo fafafa	Perennial	Through out the year	10
584	BLT-46	Lupha	South	Mulanje	Blantyre	Mulanje	Milonde	Lupha	12.00	8.00	36	0.30				River		Perennial		4
585	BLT-47	Thamanda	South	Mulanje	Blantyre	Mulanje	Milonde	Nkuta	7.00	7.00	34	0.20				River	Ruo	Perennial	Through out the year	30
586	BLT-48	Samba	South	Mulanje	Blantyre	Mulanje	Milonde	Naluso	18.00	6.00	88	0.20				River	Ruo	Perennial		35
587	BLT-49	Namsomba	South	Mulanje	Blantyre	Mulanje	Mulanje Boma	Nakhumwa	25.00	15.00	35	0.30				Stream	Nachiwale	Perennial	Through out the year	3
588	BLT-50	Supuni	South	Mulanje	Blantyre	Mulanje	Mulanje Boma	Supuni	18.00	25.00	45	0.40				River	Lukhubula	Perennial	Through out the year	4
589	BLT-51	Macholowe	South	Mulanje	Blantyre	Mulanje	Thuchila	Macholowe & Muliya	8.00	8.00	27	0.30	2300	49	47	River	Thuchila	Perennial		8
590	BLT-52	Mchoma	South	Mulanje	Blantyre	Mulanje	Thuchila	Mchoma	9.00	5.00	55	0.30	2300	545	45	River	Thuchila	Perennial	Through out the year	10.0
591	BLT-53	Namulenga Irrigation	South	Mulanje	Blantyre	Mulanje	Thuchila	Chapweteka	9.00	7.00	20	0.50	2350	507	435	River	Namulenga	Seasonal	December	6
592	BLT-54	Kambenje/Matanya	South	Mulanje	Blantyre	Mulanje	Thuchila	Kambenje	15.00	12.00	57	0.21	2350	730	485	River	Thuchila	Perennial		10
593	BLT-55	Likhubula	South	Mulanje	Blantyre	Mulanje	Thuchila	Matwika	25.00	12.50	25	0.50	2300	652	351	River	Likhubula	Perennial		12
594	BLT-56	Mandawala	South	Mulanje	Blantyre	Mulanje	Thuchila	Mandawala	5.00	4.00	28	0.17	2350	737	484	Spring	Mandawala	Perennial		6
595	BLT-60	Likulezi	South	Mulanje	Blantyre	Mulanje	Kamwendo	Sabuni	5.00	3.50						Impounding dam		Seasonal		
596	BLT-61	Tigwirizane Irrigation site	South	Mulanje	Blantyre	Mulanje	Kamwendo	Kandnulo			15	0.50				Impounding dam	Chimwamezi river	Perennial	February	10
597	BLT-65	Michizu	South	Thyolo	Blantyre	Thyolo	Masambanjati	Kuweluza	5.00	0.50	8	0.60		290.0	58	Stream	Michizu	Perennial		2
598	BLT-66	Mulemba/Nabomba	South	Thyolo	Blantyre	Thyolo	Thekelani	Konzalendo	10.00	5.00	28	0.35	4790			Stream	Mulemba and Nabomba	Perennial		2
599	BLT-67	Ntayambizi	South	Thyolo	Blantyre	Thyolo	Thekelani	Mussa 1	5.00	0.50	12	0.40	4796			River	Thekerani	Perennial		2
600	BLT-68	Malepasi	South	Thyolo	Blantyre	Thyolo	Thekelani	Khereng'enda	6.00	2.00	10	0.60	4776			Impounding dam	Malepasi	Perennial		
601	BLT-69	Lisule	South	Thyolo	Blantyre	Thyolo	Thekelani	Khereng'enda	6.00	1.00	10	0.60	4770			River	Lisule wang'ono	Perennial		3
602	BLT-70	Maonga	South	Thyolo	Blantyre	Thyolo	Thyolo centre	Maona			6	0.06	2			River	Mulomba	Perennial		
603	BLT-71	Kalimtulo	South	Thyolo	Blantyre	Thyolo	Thyolo centre	Kalimtulo			30	0.06				River	Maela, Swankhano			
604	BLT-72	Musowa	South	Thyolo	Blantyre	Thyolo	Thyolo centre	Musowa		1.20	15	0.08				River	Namiseche	Perennial		3
605	BLT-73	Nkhate	South	Thyolo	Blantyre	Thyolo	Dwale	Mwanapwa	6.00	6.00	30	0.20				River	Nkhate	Perennial		11
606	BLT-74	Chisawani	South	Thyolo	Blantyre	Thyolo	Dwale	William 11	1.00	4.00						Stream		Perennial		4
607	BLT-75	Chitengu	South	Thyolo	Blantyre	Thyolo	Dwale	Chitengu	5.00	5.00	20	0.25				River	Nswadzi	Perennial	Through out	9
608	BLT-76	Namazi	South	Thyolo	Blantyre	Thyolo	Dwale	Namaona	1.00	3.00	12	0.50				River	Namadzi	Perennial		2
609	BLT-77	Chinkwende	South	Thyolo	Blantyre	Thyolo	Dwale	Chinkwende	2.00	5.50						River, Spring	Chiparije	Perennial		10
610	BLT-78	Mphedzu	South	Thyolo	Blantyre	Thyolo	Dwale	Mphedzu	1.00	3.50	10	0.25				Stream	Lilongwe	Perennial		4
611	BLT-79	Nkhami	South	Thyolo	Blantyre	Thyolo	Dwale	Nkaombe	2.00	3.00	25	0.12				River	Nkhami	Perennial		4
612	BLT-81	Chidyamakanda	South	Thyolo	Blantyre	Thyolo	Khonjeni	Misoya	20.00	15.00	80	0.60				River	Thuchila	Perennial		40

(Proposed Sites)

No	Site No.	1. Name of Site	2. Location						3. Potential Area		4. Beneficiaries	5. Average Farmland	6. Altitude			7. Source of Water	8. Name of River /Dam/Dambo	9. River Flow		10. Width of River
			Region	District	ADD	RDP	EPA	Village	Wet S. (ha)	Dry S. (ha)		(ha / farmer)	(m)	Longitude	Latitude			Perennial /Seasonal	Flow Month	(m)
613	SHV 1	Zunde	South	Chikwawa	Shire Valley	Chikwawa	Dolo	Chiphuphu	20.00	10.00	65	0.30		35(157)	16oN(718)	River	Lalanje	Seasonal		15
614	SHV 2	Katetezana	South	Chikwawa	Shire Valley	Chikwawa	Dolo		20.00	50.00	250	0.30	20	35E(181)	745	Stream	Ntayakhasu	Perennial		20
615	SHV 3	Nkuyu Club	South	Chikwawa	Shire Valley	Chikwawa	Dolo	Lazo	50.00	50.00	250	0.20		34E(055)	16oN(719)	River		Seasonal		5
616	SHV 4	Muloka	South	Chikwawa	Shire Valley	Chikwawa	Dolo	Muloka		10.00	40	0.25		34oE(093)	16oN(682)	River	Mafume	Seasonal	Dec-Oct	5
617	SHV 5	Matolera	South	Chikwawa	Shire Valley	Chikwawa	Dolo	Mandefe	40.00		200	0.20		34oE(045)	16oN(695)	River	Matolera	Seasonal		5
618	SHV 6	Kachere	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Nota	9.00	13.00	45	0.20	255	492	410	River	Ngona	Perennial		10
619	SHV 7	Chimenyele	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Mdzachi		(5.00)	20	0.20	195	640	272	River	Mwanza	Seasonal		8
620	SHV 8	Nsakama	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Chimphepo	3.50	11.50	15	0.79	135	768	196	River	Mwanza	Perennial		25
621	SHV 9	Chikhombero	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Ndakwera	8.00	9.00	49	0.20	195	558	345	River	Mwanza	Perennial		35
622	SHV 10	Kuwani	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Kuwani	7.00	10.40	52	0.20	255	485	390	River	Ngona	Perennial		8
623	SHV 11	Miyowe	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Chiphale	10.00	15.00	75	0.20	255	518	384	River	Mwanza	Perennial		15
624	SHV 12	Makawa	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Chagoma	10.20	10.20	50	0.20	195	558	336	River	Mwanza	Perennial		35
625	SHV 13	Madimbo	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Kubalalika 1	8.00	12.00	60	0.20	255	495	387	River	Ngona	Perennial		10
626	SHV 14	Chigumula	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Mindantiand Nsaliwa 1	15.00	15.00	75	0.20	135	672	215	River	Mwanza	Seasonal	Nov.-Sept	70
627	SHV 15	Chigubudzi	South	Chikwawa	Shire Valley	Chikwawa	Kalambo	Changadeya / Maniolo	15.00	12.00	50	0.20	135	701	229	Stream	Chigubudzi	Perennial	Jan - Dec	20
628	SHV 16	Chichele	South	Chikwawa	Shire Valley	Chikwawa	Mitole	Mneneyi	10.00	10.00	100	0.20		8219	5702	River	Shire	Perennial		10
629	SHV 17	Phingo	South	Chikwawa	Shire Valley	Chikwawa	Mitole	Mkata	20.00	10.00	60	0.20		8219	1708	River	Shire	Perennial		20
630	SHV 18	Kalima	South	Chikwawa	Shire Valley	Chikwawa	Mitole	Kalima	25.00	25.00	100	0.20		8217	5702	River	Shire	Perennial		10
631	SHV 19	Nkuzi	South	Chikwawa	Shire Valley	Chikwawa	Livunzu	Dzimphutsi/ Zilipaine	45.00	45.00	150	0.30		00	21	River	Nkuzi	Perennial		20
632	SHV 20	Chidzimbi	South	Chikwawa	Shire Valley	Chikwawa	Livunzu	Leza, Sopa, Thopholoni	45.00	40.00	150	0.30		21	99	River	Chidzimbi	Perennial	Dec-Feb	25
633	SHV 21	Limphangwi	South	Chikwawa	Shire Valley	Chikwawa	Livunzu	Mchipeta / Mwiza	50	45	250	0.20		11	13	River	Limphangwi	Perennial		20
634	SHV 22	Livunzu	South	Chikwawa	Shire Valley	Chikwawa	Livunzu	Mpingasa/ Makhula Mandere	174.00	100.00	580	0.30		09	05	River	Livunzu	Perennial		20
635	SHV 25	Namatedza	South	Chikwawa	Shire Valley	Chikwawa	Mbewe	Mankhokwe	5.50	7.50	15	0.40		685	39	Stream	Mkombedzi	Perennial		10
636	SHV 26	Mphinya	South	Chikwawa	Shire Valley	Chikwawa	Mbewe	Jailosi	4.00	10.00	9	0.40		689	821		Chomwa	Seasonal	Nov- April	5
637	SHV 30	Mwanakakula	South	Chikwawa	Shire Valley	Chikwawa	Mikalango	Mwanakakula 2		10.00	34	0.30		7056	81872	River	Shire	Perennial		10
638	SHV 31	Ntayabatchi	South	Chikwawa	Shire Valley	Chikwawa	Mikalango	Phazi		20.00	18	0.30		7077	81821	Impounding dam	Nyakamba	Perennial		2
639	SHV 32	Chingondo	South	Nsanje	Shire Valley	Nsanje	Zunde	Mulamba		16.50	216	0.08		376	228	Impounding dam	Chigondo	Seasonal		65
640	SHV 33	Chimwala	South	Nsanje	Shire Valley	Nsanje	Zunde	Tsandoka		10.00	101	0.10	60	366	238	Spring	Chimwala	Perennial		2.5
641	SHV 34	Mphatso	South	Nsanje	Shire Valley	Nsanje	Zunde	Mbeta		20.00	207	0.10	45	424	293	River	Shire	Perennial		50
642	SHV 35	Chimwaza	South	Nsanje	Shire Valley	Nsanje	Zunde	Lundu		13.00	100	0.13		422	316	River	Shire	Perennial		50
643	SHV 36	Nyanjiwa	South	Nsanje	Shire Valley	Nsanje	Zunde	Nkotamu		11.00	187	0.06	45	428	324	River	Shire	Perennial		50
644	SHV 39	Nkulo wa Mitete	South	Nsanje	Shire Valley	Nsanje	Nyachilenda		70.00	20.00	200	0.10				River		Perennial		23
645	SHV 40	Kadanganda	South	Nsanje	Shire Valley	Nsanje	Nyachilenda		20.00	20.00	200	0.10	60	381	136	River	Dinde	Perennial		20
646	SHV 42	Njale	South	Nsanje	Shire Valley	Nsanje	Makhanga	Famiza(Kalonga	15.00	5.00	270	0.18	80	7285	725	River	Filikisi	Perennial		10
647	SHV 43	Kalulu	South	Nsanje	Shire Valley	Nsanje	Makhanga	Chinekwe, Chipopolo	15.00	10.00	240	0.15	80	725.5	8879		Ngonza	Perennial		30
648	SHV 44	Chabuluka	South	Nsanje	Shire Valley	Nsanje	Makhanga	Chabuluka	10.00		204	0.10	80	754	8179	River	Ruo	Perennial		
649	SHV 45	Nchotsanjala	South	Nsanje	Shire Valley	Nsanje	Makhanga	Gena	20.00	10.00	200	0.10	30	7285	81763		Chikali	Perennial		40
650	SHV 46	Chimbwimbwi	South	Nsanje	Shire Valley	Nsanje	Mpatsa	Leno		5.00	50	0.10				Impounding dam	Chimbwimbwi	Seasonal		9
651	SHV 47	Kapolo	South	Nsanje	Shire Valley	Nsanje	Mpatsa	Leno		10.00	100	0.10				Impounding dam	Nyamikolongo	Seasonal	December to September	12
652	SHV 48	Nyausembe	South	Nsanje	Shire Valley	Nsanje	Mpatsa	Lukwa		15.00	150	0.10				Impounding dam	Nyausembe	Seasonal		5
653	SHV 50	Bulawayo	South	Nsanje	Shire Valley	Nsanje	Magoti	Bulawayo	3.40	8.00	38	0.21				Impounding dam	Gong'o dam	Perennial		

APPENDIX-10

PROCEDURE OF ENVIRONMENTAL EXAMINATION

RECORD OF PROCEDURE:

Environmental Impact Assessment (EIA) guidelines 1997 mention that an irrigation project with service area of **MORE THAN 10HA** may require EIA. The service area of verification projects, the phase II study was to undertake, was thought mostly less than 10 ha but if maximum development done and also if water volume allows, the development was expected to extend more than 10 ha. Therefore, this Study prepared environmental documents for the four sites of Mtuwanjovu, Chikhasu, Msambaimfa, and Tikolore that were to be the 1st generation verification projects tried out in 2003.

Attachments from the next page are official corresponding and the report on environmental examination submitted in May, 2003 (originally the report was submitted on March 20 with the covering letter issued by Dr. Mzembe. However, it was lost and re-submitted in May 2003). Upon the receipt of the report, the Director of Environmental Affairs acknowledged the project proposal and requested to prepare an Environmental Management Plan (EMP). JICA Study Team immediately prepared the EMP, and DOI submitted to the Director of Environmental Affairs.

Based on the EMP, the verification projects including other than the original four sites have been carefully monitored, and the result and measures taken were always fed back on the whole process of the implementation of the verification projects as recorded in the relevant reports such as the Main Report, Comprehensive Guideline, etc.

Profile of the 1st generation Verification Sites

	Club Name (total 23)	L.Owner M, F	Total Membership	Member M, F	Intended Area, ha	Area Actually Irrigated, ha	Canal Length, m	Irrigated Area / Farmer, ha
Lilongew E. RDP, Mpenu & Chiwanba EPAs								
1-1	Mtuwanjovu	26,0	30	26,4	2.4	2.20	670	0.073
1-2	Duwu	4,0	26	16,10	2.6	1.56	450	0.060
1-3	Ngoni+Miteme	10,0	35	35,0	5.8	3.38	1,200	0.097
1-4	Chimphonongo	16,2	18	16,2	4.8	1.92	240	0.107
1-5	Zakumva	1,0	10	9,1	2.0	0.95	370	0.095
1-7	Mgunda	2,0	11	11,0	2.5	1.10	350	0.100
1-6	Talira (w/ fish pond)	not realized and excluded in averaging						
1-8	Mankhamba+Tigwirizane	4,0	16	16,0	4.5	2.53	460	0.158
	Average	9,0	21	18,2	3.51	1.95	534	0.107
Dedza Hills RDP, Kanyama & Bembeke EPAs								
2-1	Chikhasu	1,5	16	10,6	1.0	0.64	165	0.040
2-2	Mchiku	0,1	16	7,9	0.7	0.65	215	0.041
2-3	Livizi	4,7	17	10,7	1.4	0.78	365	0.046
2-4	Mtsetse	2,0	15	10,5	1.2	0.25	190	0.017
2-5	Kadiwa	1,0	7	3,4	0.8	0.50	190	0.071
2-6	Mtanda	0,6	38	7,31	1.5	0.53	320	0.014
2-7	Namanolo	2,6	23	16,7	1.2	0.52	401	0.023
	Average	1,4	19	9,10	1.1	0.55	264	0.029
Dowa RDP, Mvera EPA								
3-1	Tikolore	10,0	81	69,12	5.8	3.97	2,154	0.049
3-2	Tilime	5,0	50	40,10	4.1	1.65	1,852	0.033
3-3	Loyi	3,1	36	22,14	3.6	1.80	510	0.050
3-4	Kambware	3,0	15	15,0	2.0	0.55	1,250	0.037
	Average	5,0	46	32,9	3.9	2.0	1,442	0.044
Ntchisi RDP, Kalira EPA								
4-1	Msambaimfa	10,3	61	47,14	4.5	4.50	1,500	0.074
4-2	Gontha	3,1	52	43,9	4.9	3.30	600	0.063
4-3	Katema	22,4	33	22,11	2.0	1.65	554	0.050
4-4	Kasangadzi	5,0	36	27,9	4.0	1.55	1,000	0.043
	Average	10,2	46	35,8	3.9	2.7	914	0.060
Total		**134,36**	**642**	**477,165**	**63.3**	**36.5**	**15,006**	
per site, ha		**6,2**	**29**	**22,8**	**2.88**	**1.66**	**682**	
per farmer, ha					**0.10**	**0.06**	**23**	

Note: 1-6 Talira is excluded in averaging because it was not realized.

The area finally developed was as shown in the table. As indicated, these developed areas are very small or rather can be defined as micro irrigation; average area irrigated is 0.06 ha, even the maximum is 4.5 ha only.

Therefore, the smallholder irrigation schemes tried under this Study do not require official EIA procedure; hence official corresponding with the Environmental Affairs became unnecessary. However, it is stressed that all the necessary measures in term of environmental conservation were due considered throughout the process of the Study as incorporated in the Reports.

FILE IN JICA

Ref.No. CONF/DOI/06/36 28th March 2003

FROM: Controller of Irrigation Services, P.O. Box 30797, Lilongwe 3

TO: The Director of Environmental Affairs, P/Bag 394 Lilongwe 3.

ENVIRONMENTAL IMPACT ASSESSMENT FOR VERIFICATION PROJECTS

The Malawi Government got a grant assistance aid from the Japanese Government for the implementation of a study on capacity building and development of irrigation schemes in Malawi. The team of experts from Japan was in the country from the beginning of January to conduct the first phase of the study, which included the conduction of visits to various sites in the ADDs.

The objectives of the study are:

1. To establish a package of methodologies for self-help irrigation development.
2. To enhance technical and administrative capacity in irrigation development.

The first phase of this study has now been completed and the study will proceed to the next phase. Phase II of the study will involve the implementation of verification projects in order to test the package of methodologies developed. This will involve the development of four irrigation schemes in Lilongwe and Kasungu ADDs. These are Mwananjovu (6.5ha) Chikasu (18ha) Msambaimfa (20) and Tikolore (10ha)

As two of these schemes are in excess of 10ha and according to Environmental Impact Assessment guidelines these may require Environmental Impact Assessment, we were wondering if it will be necessary to conduct fully fledged EIAs for Chikasu and Msambaimfa.

You will find enclosed herein Phase I report with an initial Environmental Examination and Project Descriptions of the four sites as detailed in chapter 8 of the report for your necessary information.

Looking forward to your advice.

C.P. Mzembe (PhD)
CONTROLLER/OFF IRRIGATION SERVICES.

Copy: JICA Malawi Office

EAD/99/7/5

23rd June 2003

Controller of Irrigation Services,
Ministry of Agriculture and Food Security
P.O. Box 30797,
Lilongwe 3

Attn.: Mr. A.T. Khonje

Dear Sir,

REVIEW OF THE INITIAL ENVIRONMENTAL EXAMINATION REPORT FOR IRRIGATION VERIFICATION PROJECTS

Following the submission of your Initial Environmental Examination Report for the above projects, I am pleased to inform you that the Technical Committee on Environment (TCE) reviewed the report on 20th June 2003. Considering the nature and size of the projects, you are advised to prepare an Environmental Management Plan (EMP) for each of the irrigation sites i.e. Mtuwanjovu, Chikhasu, Msambainfa and Tikolere.

The EMP is a plan of action by which all mitigation and enhancement measures will be carried out; specifying who will be responsible for implementing the measures and monitoring their implementation. A schedule for implementation of these measures should also be outlined in the EMP including information on the resources required to implement the EMP.

Please, note that you are required to involve relevant stakeholders including the Land Resources Conservation Department for good catchment management practices and the Ministry of Water Development to ensure that acceptable minimum flow rates are maintained in the streams or rivers affected.

Once the EMPs have been prepared you are required to submit them to Environmental Affairs Department (EAD) for review. Meanwhile, your

application has been recommended to the National Council on Environment for approval. We thank you for your continued cooperation.

Yours faithfully,

Dr. Aloysius M. Kamperewera
For: DIRECTOR OF ENVIRONMENTAL AFFAIRS

Cc : The Director of Land Resources Conservation, P.O. Box 30291, Lilongwe 3

: The Chairman, Water Resources Board, P/Bag 390, Lilongwe 3

: Chairman, Technical Committee on the Environment

CONF/DOI/068/31 **11th July, 2003**

FROM: THE CONTROLLER OF IRRIGATON SERVICES, P O BOX 30797, LILONGWE 3

TO: THE DIRECTOR OF ENVIRONMENTAL AFFAIRS, P/BAG 394, LILONGWE 3
Attention: Dr. A.M. Kamperewera

PROPOSED ENVIRONMENTAL MANAGEMENT PLAN FOR MTUWANJOVU, CHIKHASU, MSAMBAIMFA AND TIKOLORE VERIFICATION SITES

Reference is made to your letter Reference No. EAD/99/7/5 of 23rd June 2003 on the review of the Initial Environmental Examination Report for irrigation verification projects.

I am pleased to note that our application has been recommended to the National Council on Environment for approval.

As advised in your letter, I meanwhile forward to you the Environmental Management Plan for Mtuwanjobvu, Chikhasu, Msambaimfa and Tikolore verification sites for your further action.

Your usual application is greatly appreciated

A.T. Khonje
For **CONTROLLER OF IRRIGATION SERVICES**

Cc: JICA Malawi Office, P.O. Box 30321, Lilongwe 3
The Team Leader, Study Team, Lilongwe

PROPOSED ENVIRONMENTAL PLAN (applicable to all the four sites of Mtuwanjovu, Chikhasu, Msambaimfa, Tikolore)

Outline of Predicted Negative Environmental Impacts/ Effects to be Addressed on the Site.	Proposed Mitigation Measures to be done, responsible Authorities, and Time Frame	Proposed Budget, MK	Proposed Authorities for Monitoring on Compliance of Mitigation Measures	Recommended Targets in Implementation (Performance Indicators on Compliance)
1. Water deficiency in areas in the downstream.	• Downstream water usages check prior to the construction of diversion weir (*To be done by an assistant irrigation officer in the respective RDP*). • Release of minimum flow to keep the downstream condition sound, which is at least 10% of the total flow at the site (*To be done by the irrigation committee, and actually since the weir is made of local materials such as twig, grass, soil, etc.., more than 20% leakage cannot be avoided, which in turn contributes to the downstream release*).	No budget allocated but monitored/ supervised through day-to-day extension activities by AEDC/ AEDO.	Working Group established for the purpose of monitoring the project (members are irrigation officers and crop officers in ADD, DADO, assistant irrigation officer and crop officers in the respective RDP, AEDC and AEDO in the respective EPA, and JICA Study Team). Ministry of Water Development	• On-site downstream water usages check • At least 10% downstream regulatory release in any case.
2. Water contamination	• Careful dosages of organic manure (*To be*	No budget allocated	Working Group	• No significant

which might be caused by organic compound to be used under organic cultivation promotion.	*done by the farmers under proper extension services to be given by AEDO*).	but monitored/ supervised through day-to-day extension activities by AEDC/ AEDO.		change of the color of surfaced water.
3. Possible conflict that may be incurred by income gap between the direct beneficiaries and non-beneficiaries.	• Conflict management by local authorities, especially the Village Headman, together with AEDO/ AEDC (*To be done throughout the project implementation by the local authority and AEDC/ AEDO*). • Lending out pieces of service area to villagers who have intension to do irrigation but not posses any farm lot in the service area (*To be arranged by committee members, local authority especially the Village Headman, together with AEDC/ AEDO*). • Establishment of Open Pollinated Variety (OPV) maize seed multiplication field if there is a possibility, which contribute to availability of improved seed in their locality (*To be done by the farmers under an advice from AEDC/ AEDO*). Note: the condition is other maize than OPV	No budget allocated but managed through day-to-day extension activities by AEDC/ AEDO.	Working Group	• Lending out pieces of service area from the land owner to the landless villagers in the irrigation service area. • Establishment of OPV maize seed multiplication field, and availing the seeds to the villagers.

	shall not have been planted for the last three consecutive seasons, otherwise cross-pollination takes place.			
4. Loss of plants, trees and subsequent loss of green beauty on the site of the diversion weir.	• Selective and minimal cutting of greens in the diversion sites (*To be done by the farmers under the supervision of AEDC/ AEDO*).	No budget allocated but monitored/ supervised through day-to-day extension activities by AEDC/ AEDO.	Working Group Land Resources Conservation Department	• Selective clearance of the solely required site for constructing weir, usually small area of the abutments say radius 2 – 3 m only.
5. Land degradation around and within the scheme premises	• Proper designs, land and irrigation management practices encouraged within and around the schemes	No budget. Activity carried out as normal awareness / farmer training by AEDOs, Irrigation Officers and Land Resources Officer	Working Group Land Resources Conservation Department	• Proper cultural practices

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

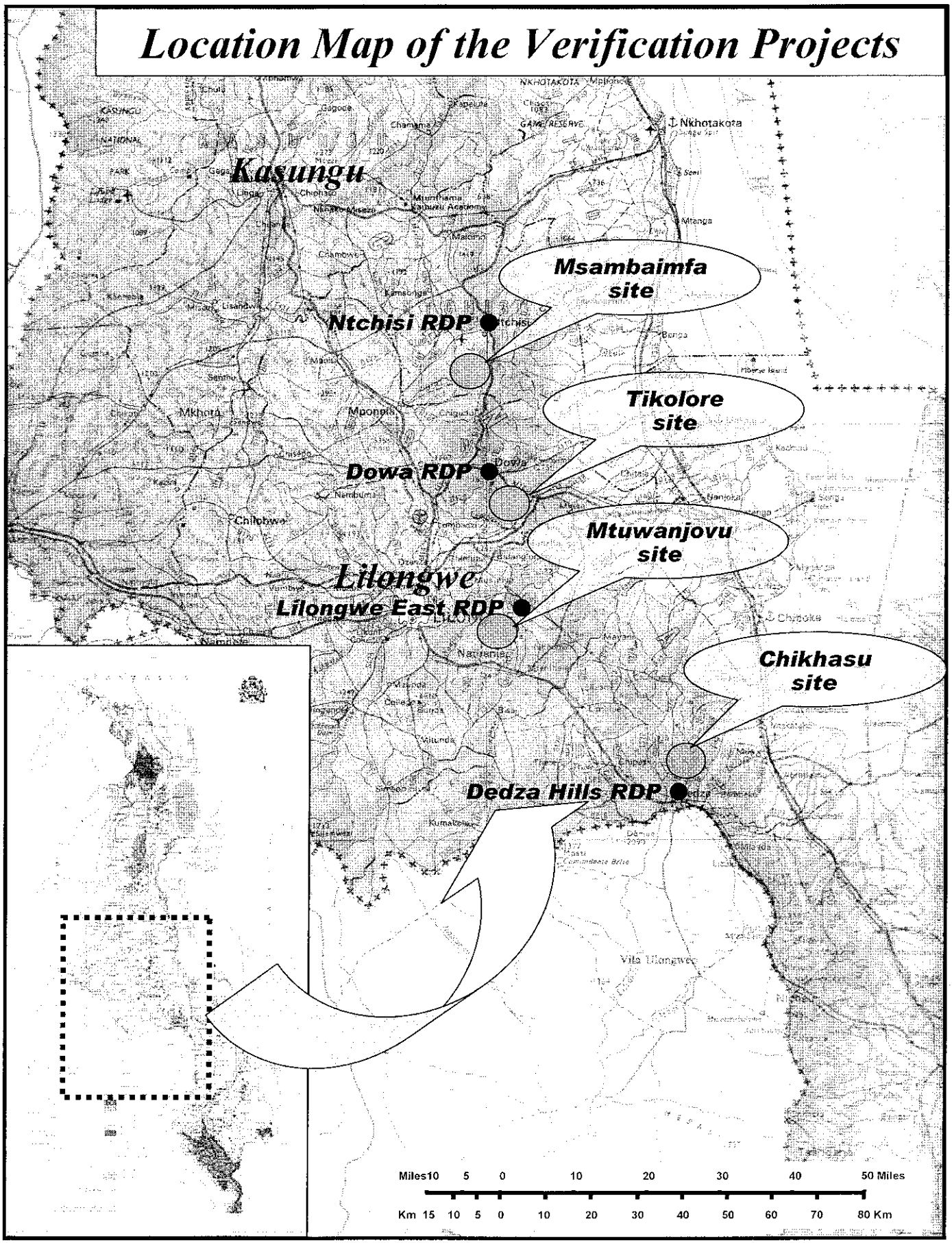
DEPARTMENT OF IRRIGATION (DOI)
MINISTRY OF AGRICULTURE AND IRRIGATION (MOAI)
THE REPUBLIC OF MALAWI

THE STUDY
ON
THE CAPACITY BUILDING AND DEVELOPMENT FOR SMALLHOLDER IRRIGATION SCHEMES
IN
THE REPUBLIC OF MALAWI

ENVIRONMENT
on
Verification Projects

May, 2003

SANYU CONSULTANTS INC.


Location Map of the Verification Projects
Kasungu
Msambaimfa site
Ntchisi RDP
Tikolore site
Dowa RDP
Mtuwanjovu site
Lilongwe
Lilongwe East RDP
Chikhasu site
Dedza Hills RDP
Nkhotakota
Mkhoma
Chiboke
Miles10 5 0 10 20 30 40 50 Miles
Km 15 10 5 0 10 20 30 40 50 60 70 80 Km

CONTENTS

LOCATION MAP OF THE STUDY AREA

CHAPTER 1 PROSPECTIVE AREAS FOR VERIFICATION PROJECT

This chapter discusses tentative selection of verification projects, which will be undertaken during phase 2 study. The Team has visited more than 40 sites together with the counterparts and relevant ADD, RDP and EPA officers. Based on the field observation and preliminary discussions with the farmers, four prospective sites for the 1st generation's verification project have been identified.

1.1 Technical Procedure for the Implementation of Verification Projects

Technical procedure necessary for the implementation of the verification projects can be divided into five stages as described below. Figure 1.1.1 shows the flow of activities to be undertaken by each party concerned as well as their duties and responsibilities.

1) Identification and Confirmation Stage

Initial identification of possible sites is made by joint efforts of EPA/RDP offices of DOI and village farmers. Items to be considered in the initial identification are water flow condition and irrigation needs by farmers. Based on the information from ADD/RDP/EPA offices, the Study Team makes ocular inspection together with DOI officers and farmer beneficiaries for the assessment such as natural conditions, water source, etc. Technical criteria for site selection are also made at this stage.

2) Engineering Survey Stage

Among the sites initially investigated, proposed sites for the verification projects are selected in view of technical points based on the technical criteria for site selection. Then joint survey together with farmer group, DOI and Study Team is made to clarify details of farmers' proposal. At the same time, profile survey is also conducted for major facilities to be designed such as diversion sites, main canal alignment, irrigation service areas and so on.

3) Design Stage

Following the engineering survey, the Study Team will undertake preliminary design based on the design concept and design criteria. Preliminary design will include hydraulic design, farming plan, design of major structures, design alternatives and so on. A preliminary meeting will be held together with farmers' group and ADD/RDP/EPA officers to discuss and confirm the layout of proposed irrigation system as well as proposed alternative structures. Other important matters to be discussed are materials necessary for the work, construction works to be done by farmers' group, responsibilities of each party involved and cost sharing.

4) Construction Stage

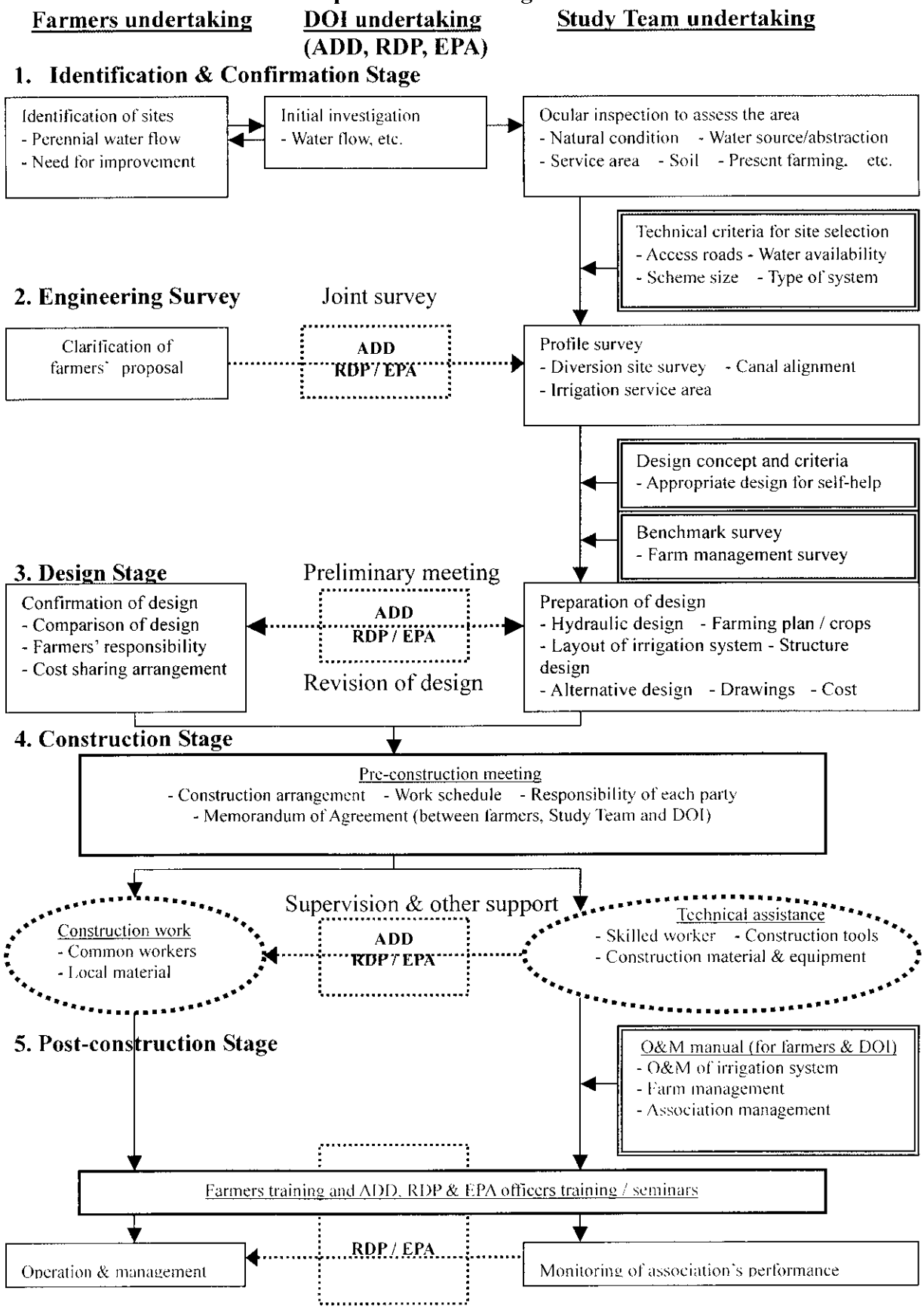
Before proceeding to the construction works, a pre-construction meeting shall be held to set all matters required during the construction stage. Discussion will be made for the construction arrangement, work schedule, confirmation of responsibilities of each party, preparation of Memorandum of Agreement (MOA) and so on. Materials to be supplied by each party shall be clearly arranged in detail.

Farmers' group will undertake entire construction work under technical supervision and support from the ADD/RDP/EPA offices. Site engineers to manage overall technical quality of the work will be appointed from the RDP/EPA offices, however progress of the work will be fully dependent on farmers' efforts and capacity. The Study Team will provide technical guidance to the farmers' group through the site engineers as well as construction materials and others as agreed in the pre-construction meeting and as noted in MOA.

5) Post Construction Stage

After completion of the construction work, farmers' group will carry out operation and management of the irrigation system. ADD/RDP/EPA offices will monitor the performance of farmers' group. Farmers training as well as ADD/RDP/EPA officers training and seminars will be conducted in various ways.

Figure 1.1.1 Technical Procedure for the Implementation of Verification Project for Self-help Smallholder Irrigation Schemes



1.2 Selection of Verification Project Areas

Verification project is categorized into two in terms of implementation procedure; namely, 1st generation and 2nd generation verifications. First generation simply means verification project to be carried out as the forerunner, either it is new construction or rehabilitation. Second generation is a verification project that has referred to the first generation project by which the farmers in the second verification project areas are motivated to carry out almost same activities. In summary, second generation centers on learning-from-seeing and learning from farmer colleagues.

The topography of Malawi is broadly categorized into two; namely, highland and floor of the Rift Valley. For the latter, streams flow in a gentle plain, and most of the irrigation systems consequently require lifting pump. Aside from manual pump such as Treadle, operation of lifting pump is very expensive as indicated in the diesel cost of MK 57 (equivalent to 0.64US$) per litter. Lifting irrigation by motorized pump cannot be sustainable except for cultivating cash crops. Therefore, low priority for verification project is given to the irrigation in the floor of Rift Valley.

Potential in highland, on the other hand, is associated with dambo and streams/rivers flowing in hilly areas or on the slope down to the floor of the Rift Valley. Dambos are usually impounded most of the year and very often flooded during rainy season. Consequently, dry season irrigation is the target by diverting the stream to the farmland spreading alongside or downstream the dambo. The diversion can be done either at the upstream of the dambo, entrance of the dambo, or at the downstream (almost exit of the dambo).

Streams in hilly areas or on the slope down to the Rift Valley flow in relatively narrow watercourse with a certain depth. Though these streams usually require a certain amount of civil work especially for the construction of diversion weir and the intake, there are some sites along the streams where the riverbed elevation is very close to the nearby farmland. Those sites are usually associated with hard foundation such as cropped rock. These sites allow easy diversion with small-scale civil work construction.

Therefore, the verification project site refers, as the first priority, to dambo or stream in highland. The verification project should also be preferable for the self-help small-scale irrigation scheme to be built, operated and maintained by farmers themselves. Considered in selecting the type with reference to the major irrigation types in Malawi (see Table 1.2.1) are:

- To be typical and representative irrigation system being operated in Malawi in consideration of future extension to other sites. Surface (gravity river diversion or T/pump based) irrigation schemes will be recommended as they are the major systems,
- To be either stream/river or spring in terms of water source in consideration of easy tapping and visual water source,
- To be gravity in terms of water abstraction method, in consideration of economical and easy operation,
- To be open canal in terms of water delivery in consideration of low initial construction costs and maintainable facility, and

- Not to be rehabilitation of impounding dam, though there are more than 800 sites over the country needing rehabilitation, since rehabilitation of earth dams can hardly be done by farmers' self-effort due mainly to: 1) very little intensives since the rehabilitation would not enlarge the irrigation area, 2) heavy siltation of the reservoir which can hardly been de-silted because dry work is mostly impossible due to non-existence of conduit pipe, and 3) long duration to be required usually more than one year for the rehabilitation (not suitable for verification project), and

- Nor to be new construction of impounding dam since it usually takes more than two years for the construction by manual labor, probably leading to washing-away of the dam-body because of flood.

Table 1.2.1 Category of Irrigation System in Malawi

Overall		Water Source		Water Abstraction		Water Delivery	
1. Sprinkler irrigation scheme (large M/pump >5hp)	X	**1. Stream / river**	O	**1. Gravity**	O	**1. Open canal**	O
2. Sprinkler irrigation scheme (small M/pump <5hp)	X	2. Impounding dam (Existing) (Proposed)	x X	2. Motorized pump	X	2. Pressure pipe (Sprinkler / Drip / Hose)	X
3. Surface (gravity river diversion) irrigation scheme	O	**3. Spring**	O	3. Treadle pump	X	3. Manpower carry	X
4. Surface (motorized pump based) irrigation scheme	X	4. Shallow well (Dug well)	X	4. Watering cans / Bucket	X		
5. Surface (treadle pump based) irrigation scheme	X	5. Deep well (Tube well)	X				
		6. Lake	X				

O: Adapted to verification project, X: Excluded

Therefore, irrigation system for the verification projects will be the combination of "stream/river or spring as water source", "gravity for water abstraction" and "open canal for water delivery". This accords with "surface irrigation scheme (gravity river diversion)" in overall category.

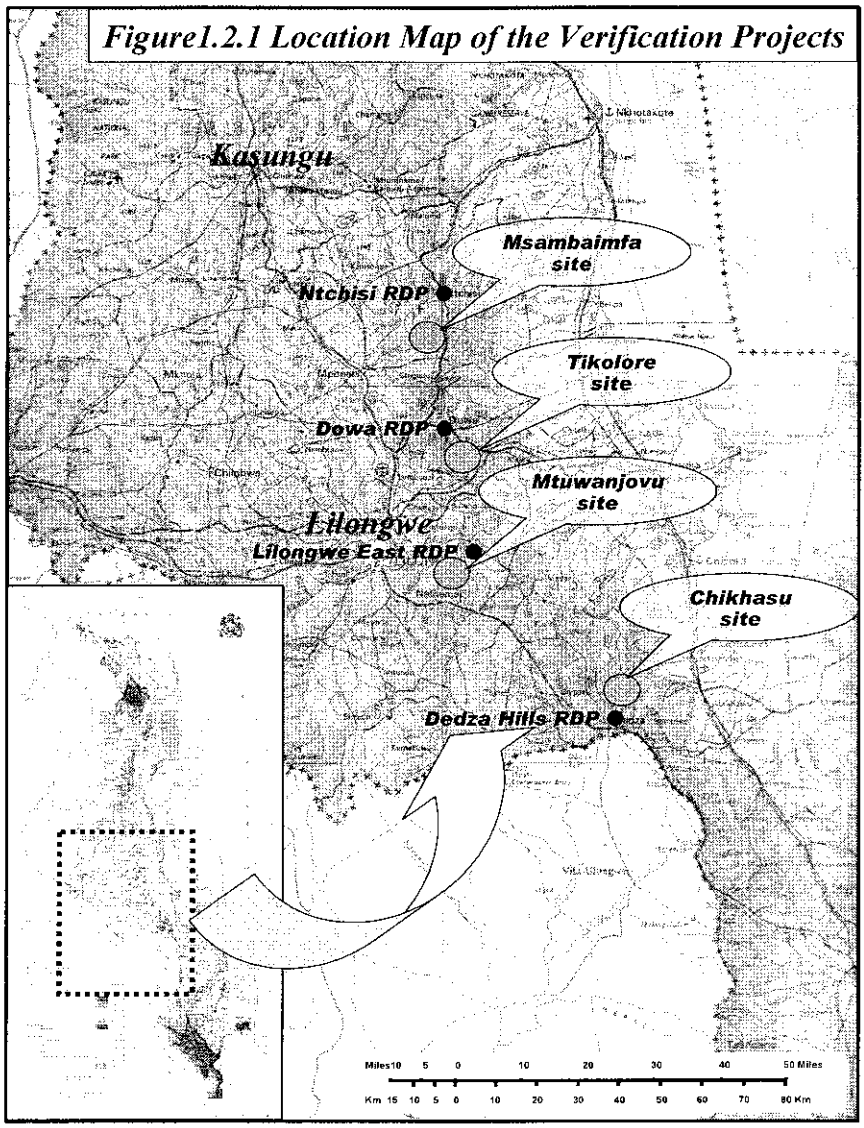
1.2.1 Selection of 1st Generation Verification Project Areas

As aforementioned, 1st generation verification projects are simply the ones to be carried out as the forerunner, either it is new construction or rehabilitation. Accessibility to the site as well as from Lilongwe, where the DOI headquarters is located, should be considered in selecting the 1st generation verification sites since the officer stationing at the headquarters should visit the sites as the verification stage proceeds. As the verification has a role of pilot, the sites should be located within a range that the DOI headquarters officer can visit in one or two days.

Officers and village farmers have identified prospective sites through interviews and inventory survey. Based on that information, the Study Team made ocular inspection together with relevant officers and farmer beneficiaries for the initial assessment. Among more than forty sites initially investigated, four sites have been selected in view of technical aspect aforementioned (see table below and Figures 1.2.1 – 1.2.5). Of the four initially selected sites, three sites have some sort of irrigation system but all are of preliminary stage.

Table 1.2.2 Sites selected for the Verification Project

Site Name	ADD	RDP	EPA	Type of Irrigation System
1) Mtuwanjovu	Lilongwe	Lilongwe East	Mpenu	Stream diversion (at downstream dambo)
2) Chikhasu site	Lilongwe	Dedza Hills	Kanyama	Mountain stream diversion
3) Msambaimfa	Kasungu	Ntchisi	Kalira	Stream diversion (at upstream dambo)
4) Tikolore site	Kasungu	Dowa	Mvera	Stream diversion (at downstream dambo and in hilly area)



1.2.2 Selection of 2nd Generation Verification Project Areas

Second generation verification projects will be selected from areas in vicinity of the first generation projects, commutable in one day from the first generation areas. This arrangement aims at the farmers in the second verification areas being motivated by the first generation projects by seeing the achievement of the farmer colleagues. The will also verify the effectiveness of the so-called farmer-to-farmer extension.

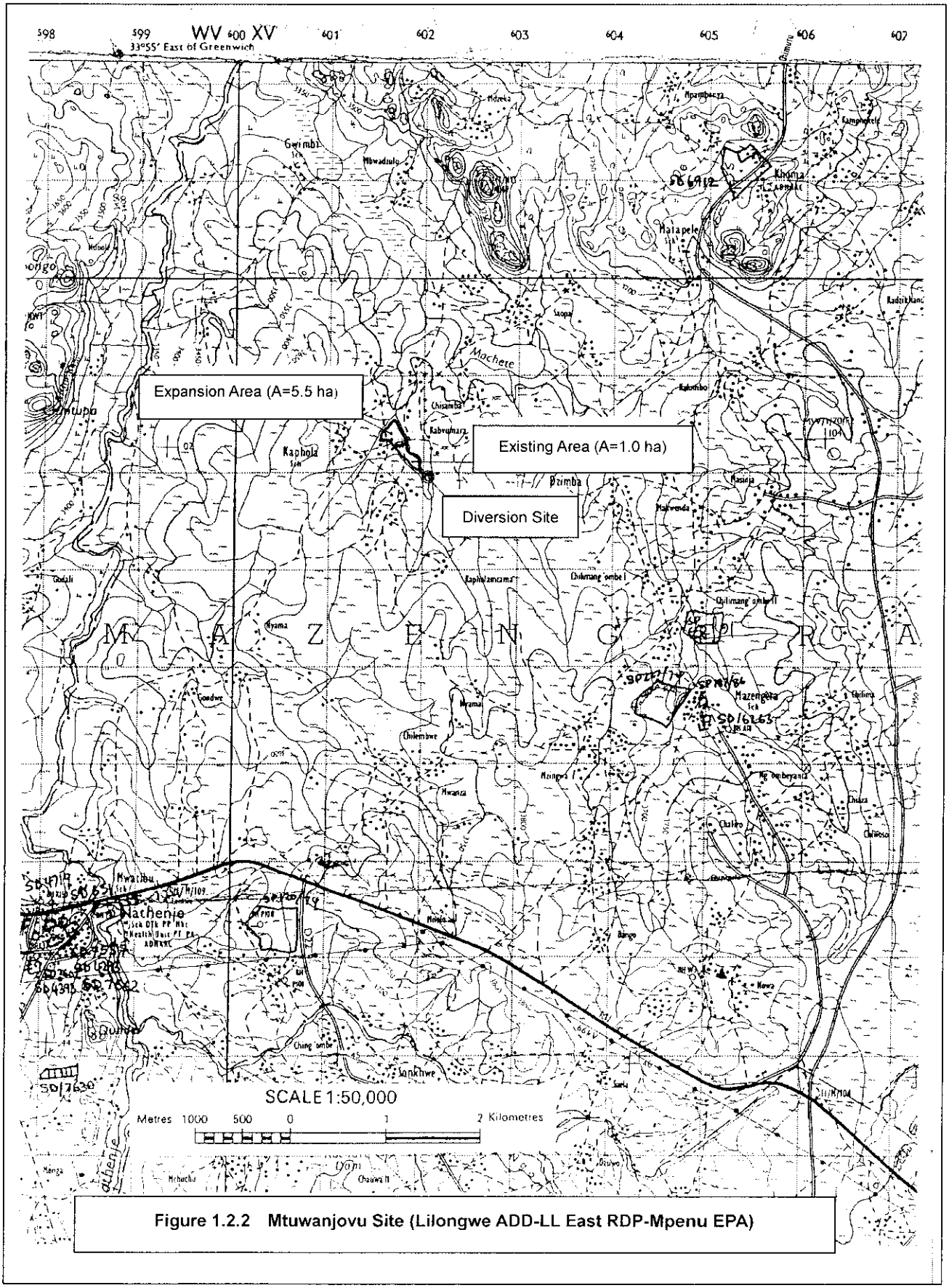


Figure 1.2.2 Mtuwanjovu Site (Lilongwe ADD-LL East RDP-Mpenu EPA)

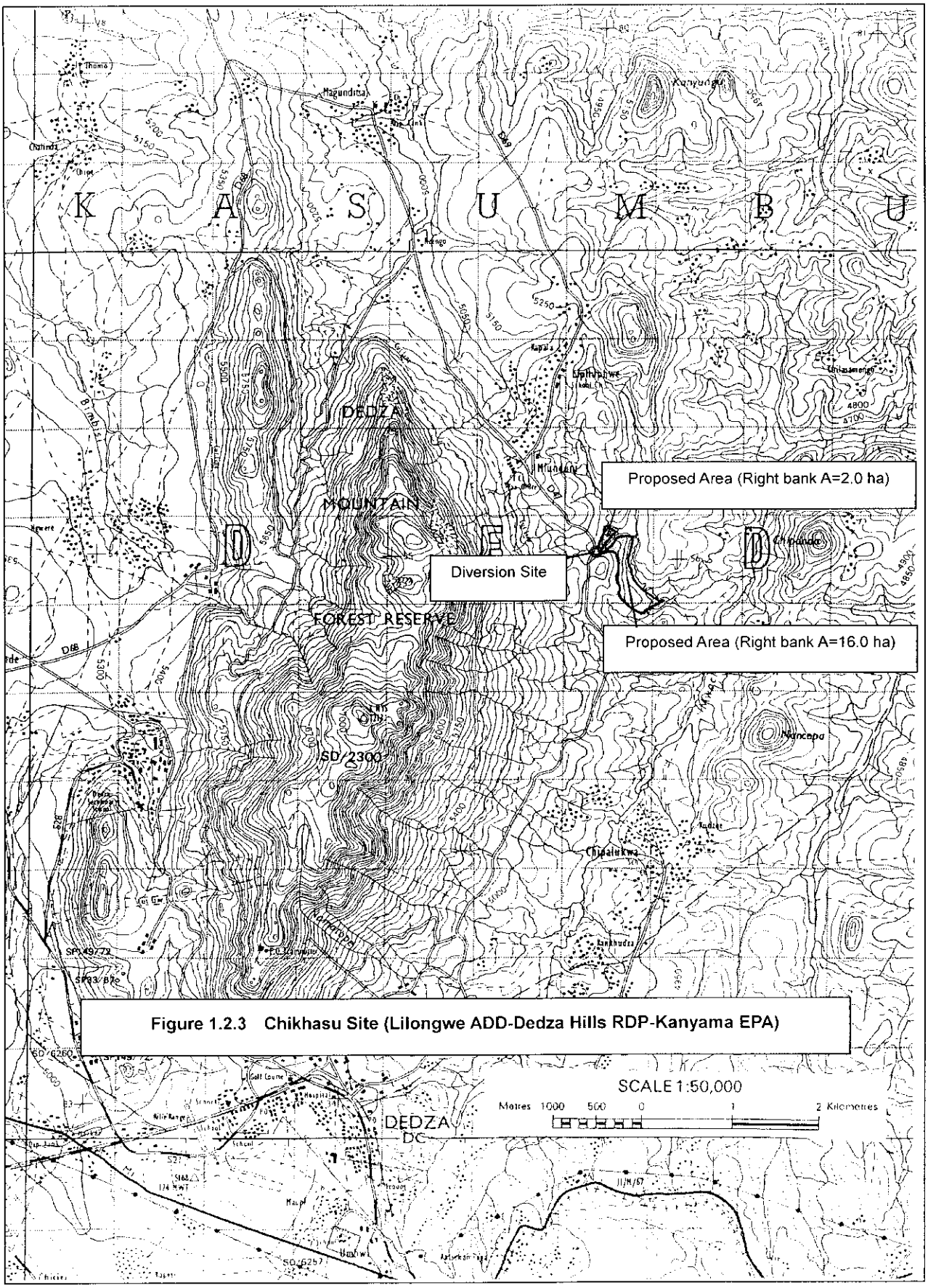


Figure 1.2.3 Chikhasu Site (Lilongwe ADD-Dedza Hills RDP-Kanyama EPA)

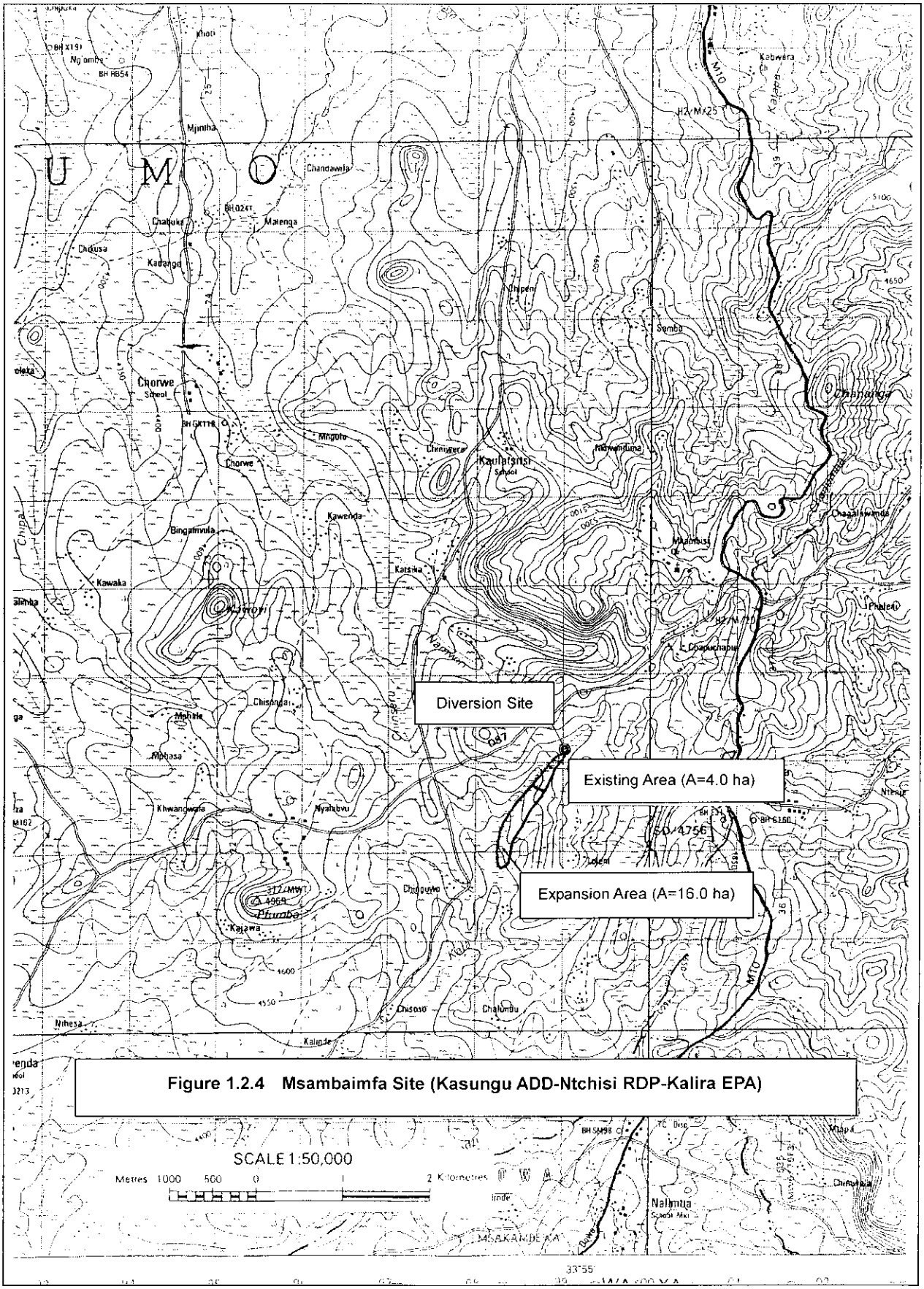


Figure 1.2.4 Msambaimfa Site (Kasungu ADD-Ntchisi RDP-Kalira EPA)

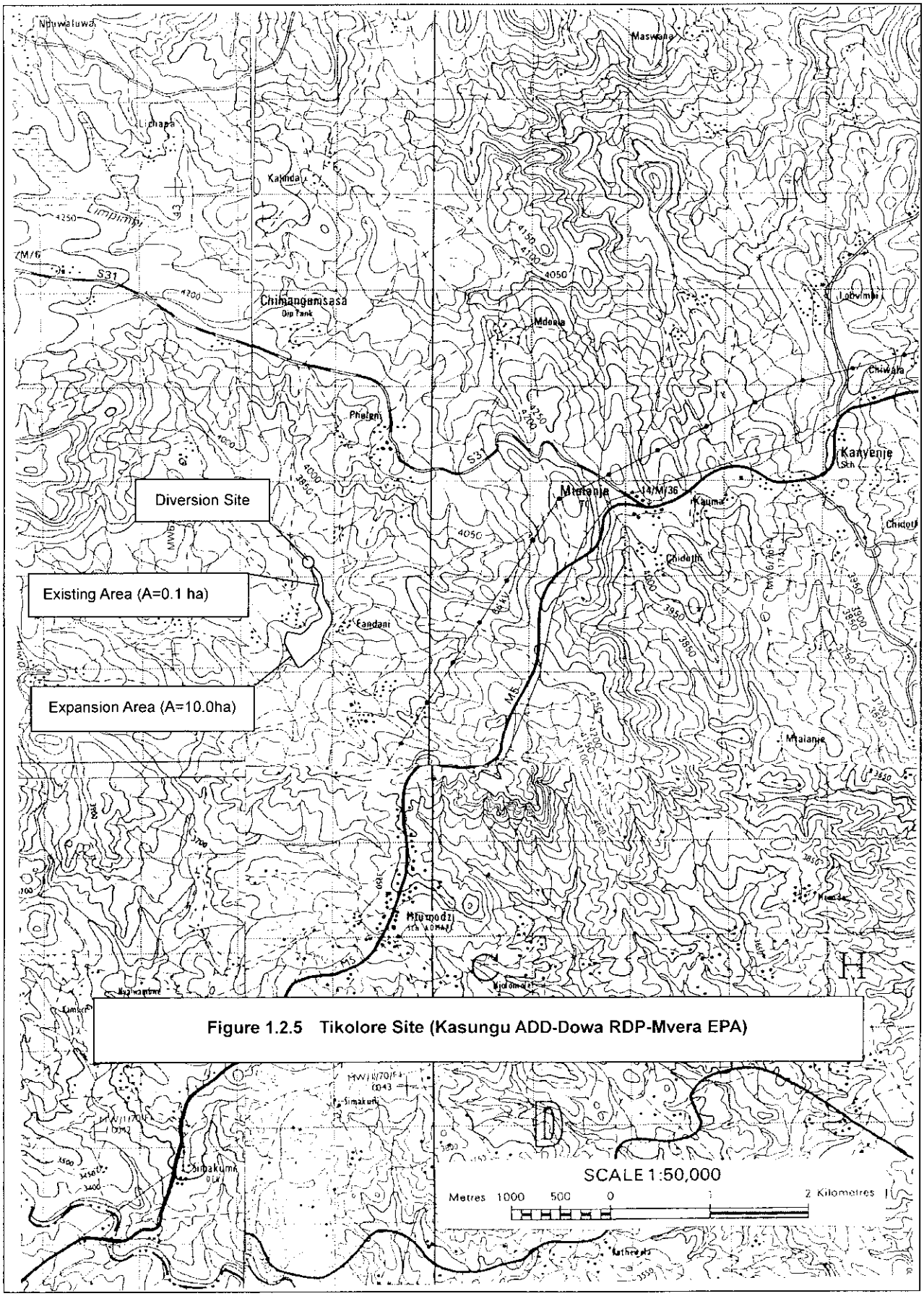


Figure 1.2.5 Tikolore Site (Kasungu ADD-Dowa RDP-Mvera EPA)

1.3 Present Situation of Prospective Project Areas

The major characteristics of the four communities in the prospective areas are summarized in Table 1.3.1. Mwase and Sajeni villages are relatively packed communities with small population basically under one clan, while Kasumbu and Fandani villages are relatively big communities with many immigrants. Numbers of beneficiaries of TIP show that Mwase and Fandani villages are relatively better off because of tobacco and vegetables, on the other hand, most of the households of Kasumbu and Sajeni villages need starter packs.

Table 1.3.1 Summary of the Prospective Areas for Verification Projects

Village	Mwace	Kasumbu	Sajeni	Fandani
Irrigation Site	**Mtuwanjovu**	**Chikhasu**	**Msambaimfa**	**Tikolore**
EPA RDP ADD	Mpenu Lilongwe East Lilongwe	Kanyama Dedza Hills Lilongwe	Kalira Ntchisi Kasungu	Mvera Dowa Kasungu
Households	62	147 (449)	30	350
TIP Packs	3	Most	33	Few
Cash Crops	Tobacco Tomato	Irish potato Beans	Onion Tobbaco Cabbage	Cabbage Tomato
Accessibility	Fair	Fair	Not Good	Good
Settlement		1940	1914	
Bad Year Good Year		2001-2002 1980's		

A problem analysis workshop was done in all the four villages. In all the workshops with the villagers, "Villagers are in Hunger" was used as the core problem. It is because hunger was mentioned as the major problem in the interviews at most of the villages the Team has conducted. The summary of Problem Analyses at villages is as in Table 1.3.2.

Low Fertility was the number one cause in Fandani villages and among the top four causes in all the villages. Fertilizer was the number one cause in two villages (Kasumbu and Sajeni), however was not among the top five in two villages (Mwase and Fandani), where cash seems to be more available than other villages. Sickness was the number one in one village (Mwase), and was among the top four causes in Fandani villages. Low Fertility and Fertilizer, the closely related problems, are in number one and two problems in Kasumbu villages. It can be assumed that these are common problems in the area of Kanyama EPA, Dedza Hills RDP, Lilongwe ADD.

Table 1.3.2 Summary of Problem Analysis at Villages

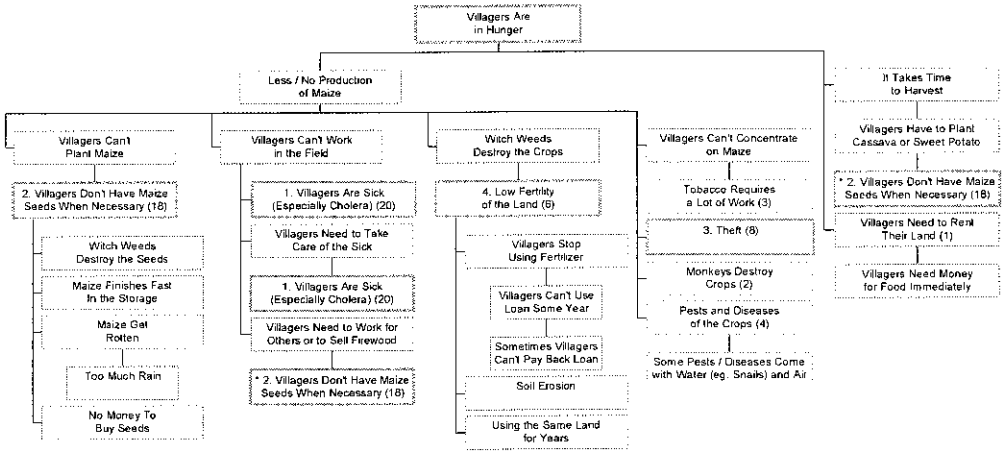
Site	Mtuwanjovu	Chikuhasu	Msambaimfa	Tikolore
Village	**Mwase**	**Kasumbu**	**Sajeni**	**Fandani**
EPA	**Mpenu**	**Kanyama**	**Kalira**	**Mvera**
RDP	**Lilongwe East**	**Dedza Hills**	**Ntchisi**	**Dowa**
ADD	**Lilongwe**	**Lilongwe**	**Kasungu**	**Kasungu**
No.1 Cause	Villagers Are **Sick** (Especially Cholera)	**Fertilizer** is not Applied	Villagers Can't Buy **Fertilizer**	**Fertility** of Land Is Decreasing
No.2 Cause	Villagers Don't Have **Seeds** When Necessary	Low **Fertility** of the Land	Villagers Can Get Little **Seeds**	Villagers Are **Sick** (Cholera, Malaria, Coughing)
No.3 Cause	**Theft**	Too Much **Rain** this Year	**Land Degradation**	**Rodents / Pests** Destroy the Crops
No.4 Cause	Low **Fertility** of the Land	**Theft** of Crops	**Family** is Too Big	Villagers Can't Plant or Plant Late (**Seeds**)
No.5 Cause	**Pests and Diseases** of the Crops	**Pests** Damage (White Grab)	-	Seeds Are **Washed Away**

1.3.1 Mwase Village (Mtuwanjovu Site)

1) Community and Problems

Mwase Village, Mpenu EPA, Lilongwe East RDP, Lilongwe ADD is a relatively rich community with tobacco growing. There are 62 to 65 households and about half of them live in the northern part around the house of the village headman, and another half live in the southern part around the Baptist Church. Tobacco is the major cash crops, but villages are trying other vegetables like tomato too. The village is located 5 kilometers from M1 road that links with Lilongwe and some villagers commute to Lilongwe everyday.

Figure 1.3.1 Problem Tree at Mwase Village



The number one cause of the core problem in Mwase Village was "Villagers are Sick (Especially Cholera)" with 20 votes, then the number two was "Villagers don't have Seeds When Necessary" with 18 votes, and the number three was "Theft" with 8 votes. The villagers of Mwase Village seem to have substantial income form tobacco growing and that is probably why the priority of fertilizer was relatively low as compared with other villages. "Low Fertility of Land" was the number four with 6 votes. "Tobacco requires a Lot of Work" was a unique card for Mwase Village.

2) Present Farming Situation

Table 1.3.3 Farming Situation of Mwase Village

1) Ave. Landholding	0.5 ha/HH
2) Dominant Crops	
- Summer	Maize, Groundnut, Tobacco
- Winter	Maize, Cabbage, Tomato
3) Maize Production	
- Seed (Local/Improved)	5%/95%
- Yield (Local/Improved)	- /2.5 t/ha
4) Access to Farm Input	Farmers World, NASFAM
5) Marketing	Local Market
- Maize	10% (MK5-9/pail)
- Groundnut	10% (MK100-200/50kg)
- Cabbage	90% (MK3-10/piece)
- Tomato	70% (MK2.5/kg)
6) Cattle Population	None

Average landholding size per household is smaller than other prospective verification areas. The average area is estimated at 0.5 ha per household, but cash crop production supports villagers' life. Dominant cash crops are tobacco in the rainy season and perishables such as cabbage and tomato in the dry season. They have experience of paprika production under contract with a private company. Unfortunately, they have already given up producing it because the market price had declined due to oversupply.

Improved variety of maize is much popular than local ones although there is a difficulty of renewing the seed every cropping. Yield of improved maize reaches to 2.5 t/ha under the good conditions: enough rainfall and full application of farm input while local maize hardly

yields. Other cultivated crops are groundnut, beans, sweet potato, Irish potato, cassava, green maize, soybean, sugarcane, citrus, guava, banana, mango and papaya.

1.3.2 Kasumbu Village (Chikhasu Site)

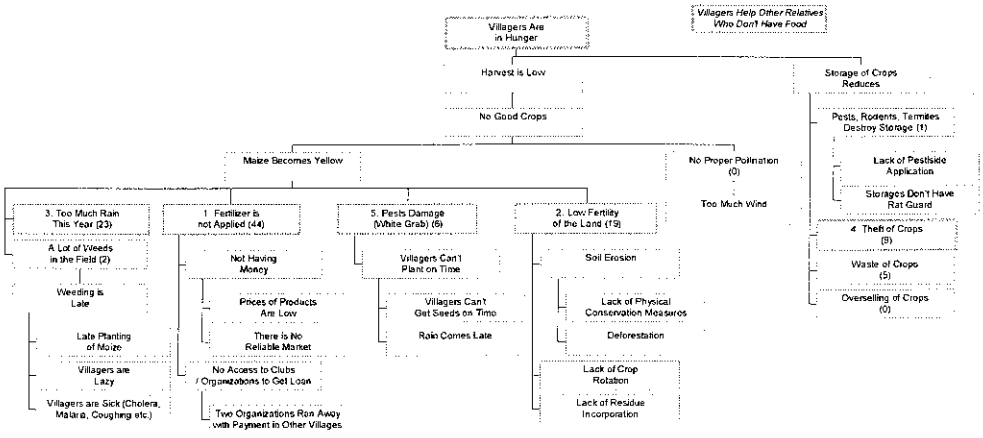
1) Community and Problems

Kasumbu Village, Kanyama EPA, Dedza Hills RDP, Lilongwe ADD is one of 13 villages under Group Village Kasumbu, TA Kasumbu. Five villages under Group Village Kasumbu, namely Kasumbu, Kanjondo, Lumwira II, Kumaadzi, and Mphale Villages, have land along Chikhasu Stream. Those five villages actually are packed together just as one big village with one primary school and the Roman Catholic Church.

Kasumbu Village has 147 households, Kanjondo has 97, Lumwira II has 60, Kumaadzi has 77 and Mphale has 68. The total households of those five villages are 449. Villagers of other eight villages under Group Village Kasumbu might join when an irrigation club is formed. It will be Group Village Headman Kasumbu who can allocate the land for the new comers. TA also will advise.

The first settlers came to the foot of the rocky mountain, original Chidedza, in around 1940. Group Village Headman Kasumbu is the third Group Village Headman and at the same time the sixth Village Headman of Kasumbu. Former Headman, who was the second Group Village Headman as well as the fifth Village Headman, was replaced by the Traditional Authority for disobedience.

Figure 1.3.2 Problem Tree at Kasumbu Village



The number one cause in Kasumbu Village was "Fertilizer is not Applied", which got 44 votes, the number two was "Low Fertility of the Land", which got 19 votes, and the number three was "Too Much Rain This Year (year 2002/03)", which got 20 votes. There was a discussion after the vote, and the number two and the number three causes were switched. This is the only village where "Too Much Rain This Year" was highlighted this much.

2) Present Farming Situation

Kasumubu village is located at an altitude of over 1,600m above sea level. Average annual temperature at Dedza metrological station is 18.2 degree centigrade, and average minimum temperature in June is less than 10 degree centigrade. Cool climate is not essentially suitable for maize production, which requires warm climate for its growth. Average yield of

maize in Dedza Hill RDP is estimated at less than 1.0 t/ha. Particularly, excess rainfall in year 2002/03 rainy season caused serious damage to growth of maize due to water logging and leaching away soil nutrient that was supplied by fertilization.

Table 1.3.4 Farming Situation of Kasumbu Village

1) Ave. Landholding	1.2 ha/HH
2) Dominant Crops - Summer - Winter	 Maize, Beans, Irish potato Maize, Irish potato, Beans
3) Maize Production - Seed (Local/Improved) - Yield (Local/Improved)	 10%/90% 0.5/2.3 t/ha
4) Access to Farm Input	Farmers World, McConnell, PTC, Local trader
5) Marketing - Irish potato - Beans	Local Market/Middleman 60% (MK5-7/kg) 90% (MK10-15/kg)
6) Cattle Population	160

Kasumbu village is dominant with production of Irish potato that prefers cool climate. An adverse effect on maize production instead allows two cropping of Irish potato a year. Around 60% of the harvest is sold at the price between MK 800/150kg and MK 1,000/150kg. Marketing condition is not good due to the remoteness that is 7 km away from Dedza town. Cash crops are transacted with middlemen although there is some trading within the village. Other cultivated crops are sorghum, finger millet, groundnut, beans, sweet potato, cassava, green maize, tomato, onion, cabbage, mustard leaf, soybean, banana peach, guava, mango and lemon.

1.3.3 Sajeni Village (Msambaimfa Site)

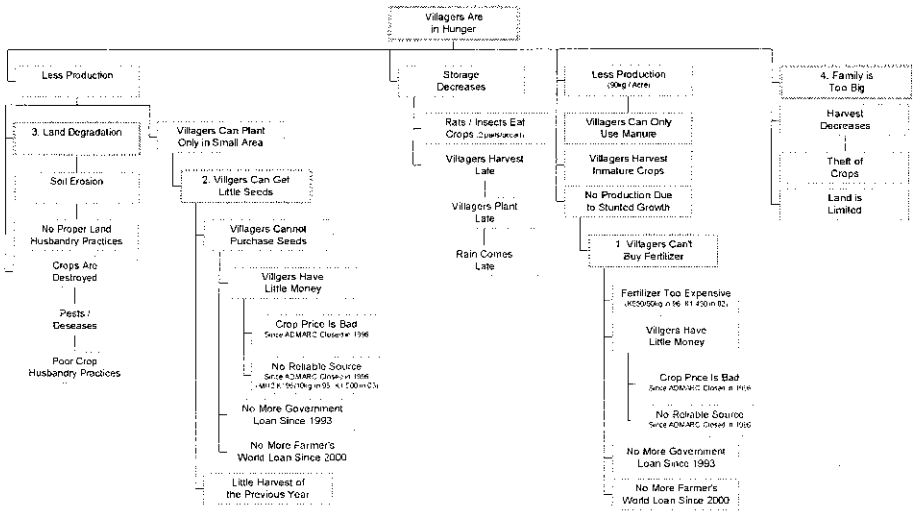
1) Community and Problems

Sajeni Village, Kalira EPA, Ntchisi RDP, Kasungu ADD is located at a remote area, which is 11 km away from Ntchisi town. Its geography is hilly so that steep slope causes erosion of the field. Villagers already recognize that fertility of the field is decreasing year by year. Contour ridge and vetiver grass are practiced everywhere to reduce the soil erosion.

Sajeni village is a very cohesive community of 30 households with total population of 130. The first settler, grandparents of the current Village Headman, came to Sajeni from Dowa in 1914. The current headman is the fourth headman of Sajeni. His grandfather was the first, then grandfather's younger brother was the second, and his father was the third headman.

"Villagers can't Buy Fertilizer" was the number one cause of the core problem and "Villagers can Get Little Seeds" was the number two in Sajeni Village. Because the village is in a remote area, nearby

Figure 1.3.3 Problem Tree at Sajeni Village



ADMARC office closed in 1996, and Farmer's World loan is not available since 2000, acquisition of inputs is the greatest problem. The number three cause was "Land Degradation" and the number four was "Family is Too Big".

2) Present Farming Situation

Table 1.3.5 Farming Situation of Sajeni Village

1) Ave. Landholding	1.2 ha/HH
2) Dominant Crops	
- Summer	Maize, Tobacco, Onion
- Winter	Maize, Onion, Cabbage
3) Maize Production	
- Seed (Local/Improved)	40%/60%
- Yield (Local/Improved)	0.9/2.0 t/ha
4) Access to Farm Input	ADMARC, Farmers World, McConnell, PTC
5) Marketing	Local Market/Middleman
- Maize	25% (MK10-15/kg)
- Beans	50% (MK20-30/kg)
- Cabbage	95% (MK5-10/piece)
- Onion	90% (MK17-28/piece)
- Tomato	90% (MK10-18/kg)
6) Cattle Population	45

Productivity of maize is nearly equal to national average: yield of local and improved maize is estimated at 0.9 t/ha and 2.0 t/ha respectively. Tobacco, vegetable and fruit are major cash crops. Onion that is storable and transportable can be cultivated twice a year. Villagers get a good price for onion despite the disadvantageous marketing condition. Peach is also a good income source that earns a profit through transaction at the price between MK 30 per piece and MK 50 per piece. Other cultivated crops are groundnut, beans, sweet potato, Irish potato, green maize, tomato, cabbage, soybean, garlic, citrus, guava, mango and plum.

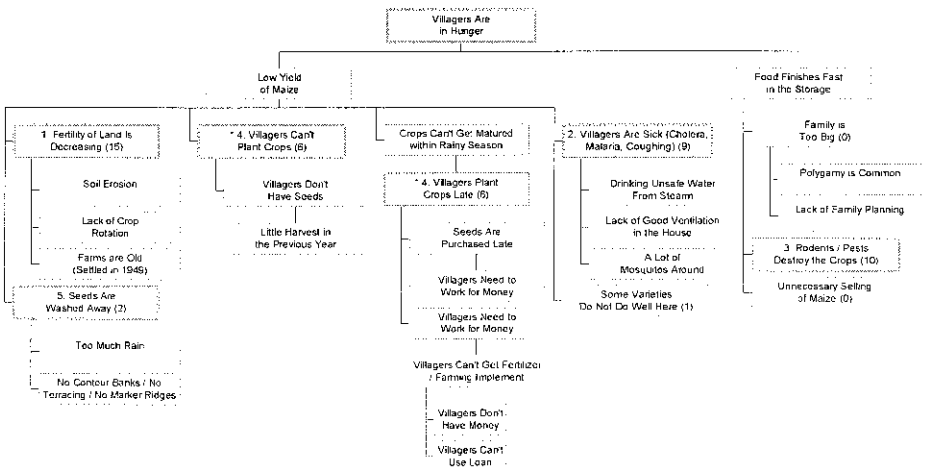
Villagers have received technical assistance such as compost making, plant spacing and livestock management through frequent contact with EPA extension officers. Short distance to EPA office makes it possible to access to extension services very often.

1.3.4 Fandani Village (Tikolore Site)

1) Community and Problems

Fandani Villages is a big village with about 350 households and the Salima Road goes near the village. There are five hamlets, namely, Fandani, Kandani, Mdzinga, Chilowe and Vungula in the village. The Village Headman and the village elders from each of the five hamlets decide internal issues such as land allocation. There are also general assemblies about once a month for important issues. All the adult villagers have the right to join, and the participants are sometimes more than 400. It usually takes three hours from nine to twelve, and the Village Headman and the elders make proposals. They never vote at the general assemblies.

Figure 1.3.4 Problem Tree at Fandani Village



The number one cause in Fandani

Village was "Fertility of Land is Decreasing" with 15 votes, the number two was "Villagers are Sick (Cholera, Malaria, Coughing)" with 9 votes, the number three was "Rodents / Pests Destroy the Crops" with 10 votes, the number four was "Villagers can't Plant or Plant Late (Seeds)" with 6 votes, and the number five was "Seeds are Washed Away" with 2 votes. The number two and the number three causes were switched after the vote. Since Fandani Village is on the slope, fertility, soil erosion and seeds washed away were recognized as major problems. Another factor is closeness to Salima Road and then to the market. The villagers are better off in terms of marketing and accessibility to the inputs.

2) Present Farming Situation

Fandani village takes advantage of a good location for marketing activity. Villagers can access to weekly market that is held every Thursday on the trunk road on foot or by bicycle. Production of cabbage and tomato is familiar as an income source. Villagers prefer cabbage to green maize as a winter crop. Other cultivated crops are groundnut, beans, Irish potato, pumpkin, mustard leaf, Chinese cabbage, soybean, banana, mango and guava.

Land degradation due to a steep slope and poor land husbandry becomes obvious in the village. Soil conservation activities such as promotion of agro-forestry, contour ridging and vetiver grass have been practiced under the PROSCAP.

Cattle population is the densest among prospective areas for verification projects. The number of cattle is estimated at around 300. Utilization of cattle for land preparation is, however, rare due to lack of equipments though ox-cart can be seen as an important means of transportation.

Table 1.3.6 Farming Situation of Fandani Village

1) Ave. Landholding	1.0 ha/HH
2) Dominant Crops	
- Summer	Maize, Tomato, Cabbage
- Winter	Cabbage, Maize, Irish potato
3) Maize Production	
- Seed (Local/Improved)	50%/50%
- Yield (Local/Improved)	0.3/2.8 t/ha
4) Access to Farm Input	Farmers World
5) Marketing	Local Market
- Maize	100% (MK10-20/kg) *winter maize
- Irish potato	30% (MK14-19/kg)
- Groundnut	50% (MK9-12/kg)
- Cabbage	75% (MK5-10/piece)
- Tomato	75% (MK8-10/kg)
6) Cattle Population	300

1.4 Irrigation Development of Prospective Project Areas

1.4.1 Proposed Diversion and Irrigable Area

Table 1.4.1 summarizes the diversion sites and prospective irrigable areas. All the schemes are stream diversion type, and those diversion sites are located at downstream dambo for Mtuwanjovu site, at a mountain site for Chikhasu site, at upstream dambo for Msambaimfa site, and at downstream dambo but in a mountain site for Tikolore site. Slope of the diversion point is relatively gentle for Mtuwanjovu site and Msambaimfa site while steep for Chikhasu site and Tikolore site.

There are farmers already carrying out irrigation in three sites[1]; Mtuwanjovu site, Msambaimfa site, and Tikolore site. These irrigations had started very recently, mostly in

[1] This does not necessary mean the verification project for the three sites will be will be rehabilitation, but rather will all be new construction by definition since the present irrigation will be of very primitive and carried out by individual basis.

year 2002, as they had faced critical food shortage during the year. The farmers had started the irrigation without any technical advice for Msambaimfa site and Tikolore site, and with a technical advice from a government officer for Mtuwanjovu site.

Table 1.4.1 Summary of Irrigable Area and Diversion Site

ADD	Lilongwe		Kasungu	
RDP	Lilongwe East	Dedza Hills	Ntchisi	Dowa
EPA	Mpenu	Kanyama	Karila	Mvera
Site	Mtuwanjovu	Chikhasu	Msambaimfa	Tikolore
Village	Mwase	Kasumbu/Kanjondo/ Lumwira II/ Kamaadzi/ Mphale	Mchela/ Chinguwo/ Sajeni/ Loleni	Fandani
Existing area*1	A=1.0 ha	0.0	A=4.0 ha	A=0.1 ha
Potential area	A=5.5 ha for Expansion	A=18.0 ha	A=16.0 ha for Expansion	A=10.0 ha for Expansion
Type of irrigation	Stream diversion at downstream dambo	Mountain stream diversion	Stream diversion at upstream dambo	Stream diversion at downstream dambo (in a hilly area)
Slope at Diversion	Gentle, soil	Steep, rock exposed	Gentle, soil	Steep, rock exposed

Note*1: "existing area" means the area that farmers are now carrying out irrigation but this does not necessary mean the rehabilitation of the existing irrigation system but rather to be new irrigation system to be constructed since the existing irrigation practices are of very primitive and not organized.

1) Mtuwanjovu Site (Mwase Village)

The diversion site is very close to the village, about 10 minutes walking distance only. The site is located at downstream dambo, forming a natural pond. The stream called Mtunjovu that has 2 m of width with some natural drops flown down in this area. Water discharge in the stream is estimated at 15 to 20 l/s as of January 2003. According to flood trace, the high flood level seems to come up about 80 cm from the grand level.

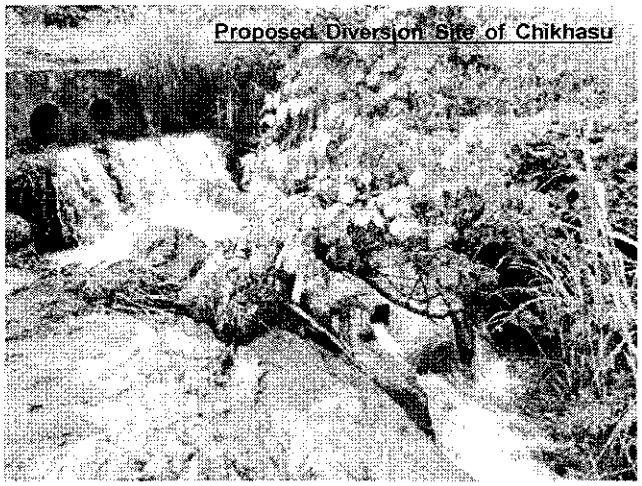
On the left bank of the stream, farmers have already constructed main canal with 400 m of length in November 2002 with a technical advice from a government officer. There are 31 members (12 men and 19 women), and all the 12 original members live in the northern part. 19 new members, who don't have farms around the dambo at the moment, live in the southern part of the village.

The main canal starts from a natural pond located at almost exit of the dambo. Farmers intends to irrigate using the diverted water by watering cans / treadle pumps / buckets, but the irrigation has not yet been started. The present canal is aligned along very low elevation, so that the irrigable area is not big. The canal alignment can be sifted upward, which can irrigate more land.

2) Chikhasu Site (Kasunbu, Kanjondo, Lumwira II, Kamaadzi, & Mphaleh Villages)

The diversion site lies in eastern side of Dedza Mountain area. The site is easily accessible as it situates at just beside a road which leads to M-1. Chikhasu river, the water resource for the irrigation, has 4 m width with some natural drops and there are exposed rock in the river bed. Discharge was estimated at about 60 l/s in Feburuary 2003. According to the farmers' information, discharge reduces to one-third during dry season.

So far no irrigation has been practiced in this site except a fiew farmers with watering can. The farming is fully depending on rainfall. The upland fields spread on a relatively steep land with about 7 degree or so. The potential area is estimated at 18 ha in total, 16 ha at the left bank side and 2 ha at the right bank side.

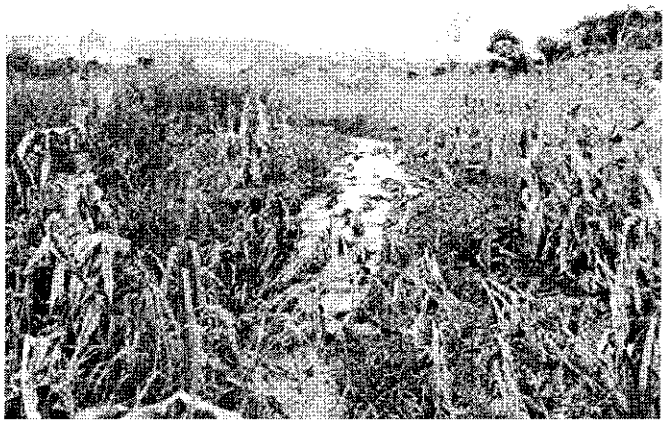

Proposed Diversion Site of Chikhasu

3) Msambaimfa Site (Sajeni, Mchela, Chinguwo, & Loleni Villages)

The site is located at southern part of Ntchisi district. To reach the diversion site, it takes about fifteen minutes from the Sajeni village. The site situates at upstream dambo. The stream flows with about 0.5 m width in the dambo area. Discharge estimated in February 2003 was about 20 l/s. According to a flood trace in the site, the high flood water level may come up to 60 to 80 cm from the ground level.

There are some earth canals already constructed by the farmers themselves. The longest one has about 470 m length on the right bank. Elder brother of the headman, who was a middleman of onions in Blantyre, came back to the village in May 2002 and started small irrigation with four households in June 2002. He knew irrigation systems and also his second wife, who lives in a neighboring village called Katsuika, is a member of a small irrigation system under WFP's Food for Asset Program 2001-2002.

Proposed Diversion Site of Masambaimfa



Other villagers, who saw the effectiveness (no maize in dry season without irrigation), begged and joined the irrigation and established Msambaimfa Club in September 2002. The members are now 24 households and 13 of them are woman-headed. The condition to be a member of the club are: 1) no absentees for canal construction, 2) care of their farms, and 3) MK 50 for punishment for absentee. So far, 10 members out of 24 members paid MK 50.

4) Tikolore Site (Fandani Village)

To reach the diversion point, it takes about twenty minutes from the village through the footpath that is difficult to pass by vehicle particular in rainy season. The site lies at downstream dambo. A stream called Fumbwe is running through in the dambo area. Water flow in Fumbwe develops gully particular at the outlet point of dambo. At the diversion point located at the end of dambo, the stream has 6 m width with exposes rock foundation. Discharge was abundant in mid February 2003.

So far farmers dug a small canal on the right bank with a length of about 200 m. Farmers set up a brush dam in the river to divert the flow. The potential area spreads as far as about 1 km downstream, and the farmers hope to extent the canal to the terminal field and to construct a permanent diversion weir. Their group is called Tikolore Club established in June 2002 with 20 villagers (seven of them are women) from Chilowe and Vungula. All of them have land along the Tikolore Stream and the elders from Chilowe and Vungula are also the members. There is no entrance fee, but they collect MK 20 each when they need to buy hoes, watering cans, seeds and a sprayer.

1.4.2 Proposed Main Facilites

Proposed facilities are composed of diversion weir, intake structure, main canal and distribution canal, turn-out, and ancillary facilities. In case material are brought from outside, the farmers are requested to bear certain amount in cash, for example 50% in cash of the cement, gabion net, etc. Therefore the structural design should be dependent not only on the engineering aspect but also on the farmers' financial capacity.

As per weir which is usually the most expensive facility, temporary ones should, in principal, firstly be recommended taking into account not only farmers financial capacity but also the possibility that a permanent weirs may became obstacle during flood thereby might be washed away or even another possibility that the river would change the course by meandering, leaving the weir useless. Following are the preliminary recommendation:

1) Mtuwanjovu Site (Mwase Village)

- Diversion weir: Height 1.0m, Width 2.0m, Length 4.0m
- Intake structure: 1 place
- Main canal: 700m (400m for existing, 300m for new construction)
- Turn-out: 17 place (planned)
- Road crossing structure: 1 place

Remarks:

Streambed material consists of clay/silty-clay at the proposed diversion site. Therefore, a small weir by gabion box is recommendable. Also an alternative is a gabion packed in wooden framework, which can be of easily removable. A road-crossing structure is required along the main canal (see Figure VP-1, 8).

2) Chikhasu Site (Kasunbu, Kanjondo, Lumwira II, Kamaadzi, & Mphaleh Villages)

- Diversion weir: Height 0.5m, Crest width 0.5m, Length 4.0m
- Intake structure: 1 place
- Main canal: 1,400m (Right bank 1,100m and Left bank 300m for new)
- Turn-out 35 place (planned)

Remarks:
Foundation rock is exposed at the proposed diversion site, making brush-dam difficult to stand. Therefore, temporary sand bag weir or permanent masonry foundation (about 30 cm thickness) plus sand bags on top of the foundation is recommendable (see Figure VP-2).

3) Msambaimfa Site (Sajeni, Mchela, Chinguwo, Loleni Villages)

- Diversion weir: Height 0.5m, Crest width 0.5m, Length 27.0m
- Intake structure: 1 place
- Main canal: 1,470m (470m for existing, 1,000m for new construction)
- Turn-out: 36 place (planned)
- Gully protection measures

Remarks
Stream-bed material is sand/silty-clay, and the width is very long reaching to as long as about 30 m. Therefore, a temporary diversion structure made of sand bag, local brush material or otherwise brush supported by trigonal prop, are recommendable (see VP-3).

4) Tikolore Site (Fandani Village)

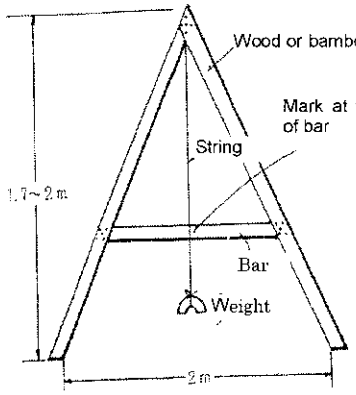
- Diversion weir: Height 0.5m, Crest width 0.5m, Length 7.0m
- Intake structure: 1 place plus natural sedimentation facility
- Main canal: 1,200m (200m for existing, 1,000m for new construction new)
- Turn-out 30 place (planned)

Remarks
Base rock is exposed in some places and others are composed of hard soil. A small permanent masonry weir (plus sand bags on top) may be recommendable from the technical point of view, but taking into consideration the farmers' affordability, a temporal removable diversion structure would rather be preferred. The temporal diversion structure will be made of sand bag, local brush material or brush (see VP-4).

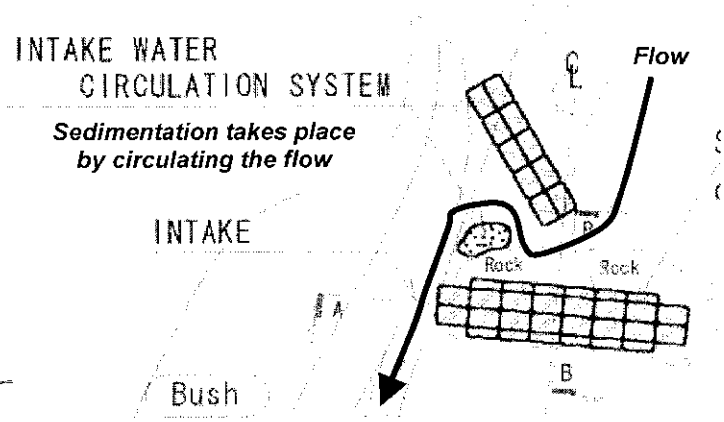
1.4.3 Proposed Grass Root Technology

While the main facilities have been planned in such a way of being constructed by the farmers, there are still some grass root technologies to be tried out through the verification projects. These are: 1) utilizing of A-frame in order to align irrigation

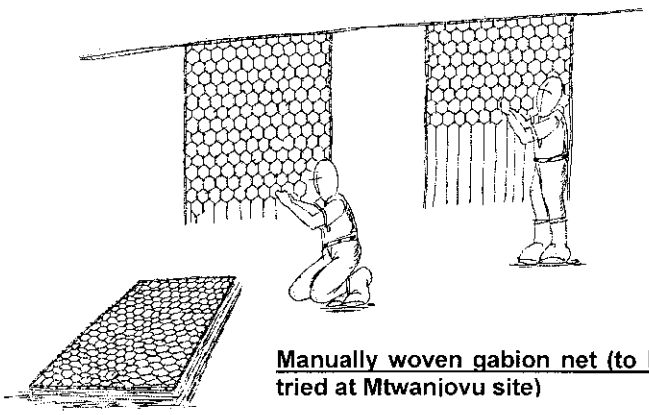
canal according to contour, 2) manually woven gabion net[2], 3) natural sedimentation system to be set up right in front of intake, 4) removable gabion constructed by wooden frame with wire net, 5) brush dam supported by trigonal prop, etc.



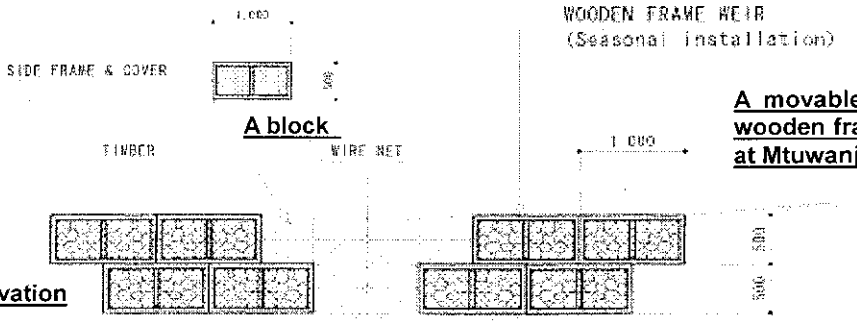
A-Frame aligning canal a/c to contour



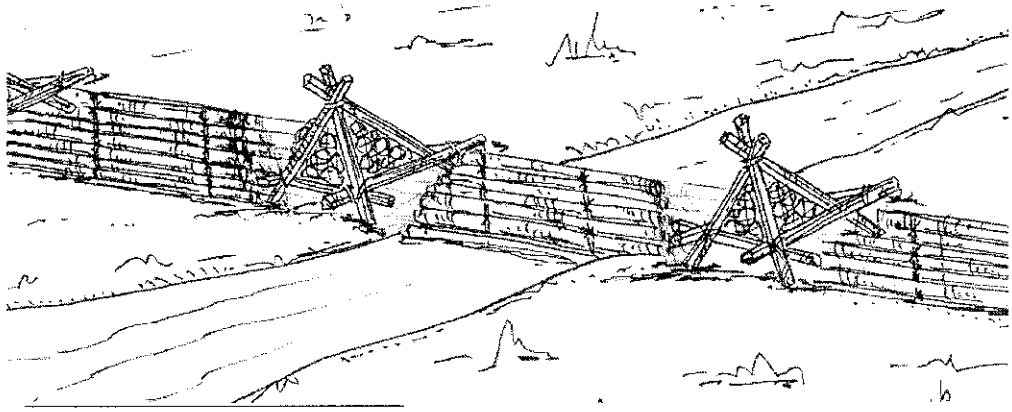
Natural Sedimentation system by circulating the flow right in front of intake (to be tried at Tikolore site)



Manually woven gabion net (to be tried at Mtwanjovu site)

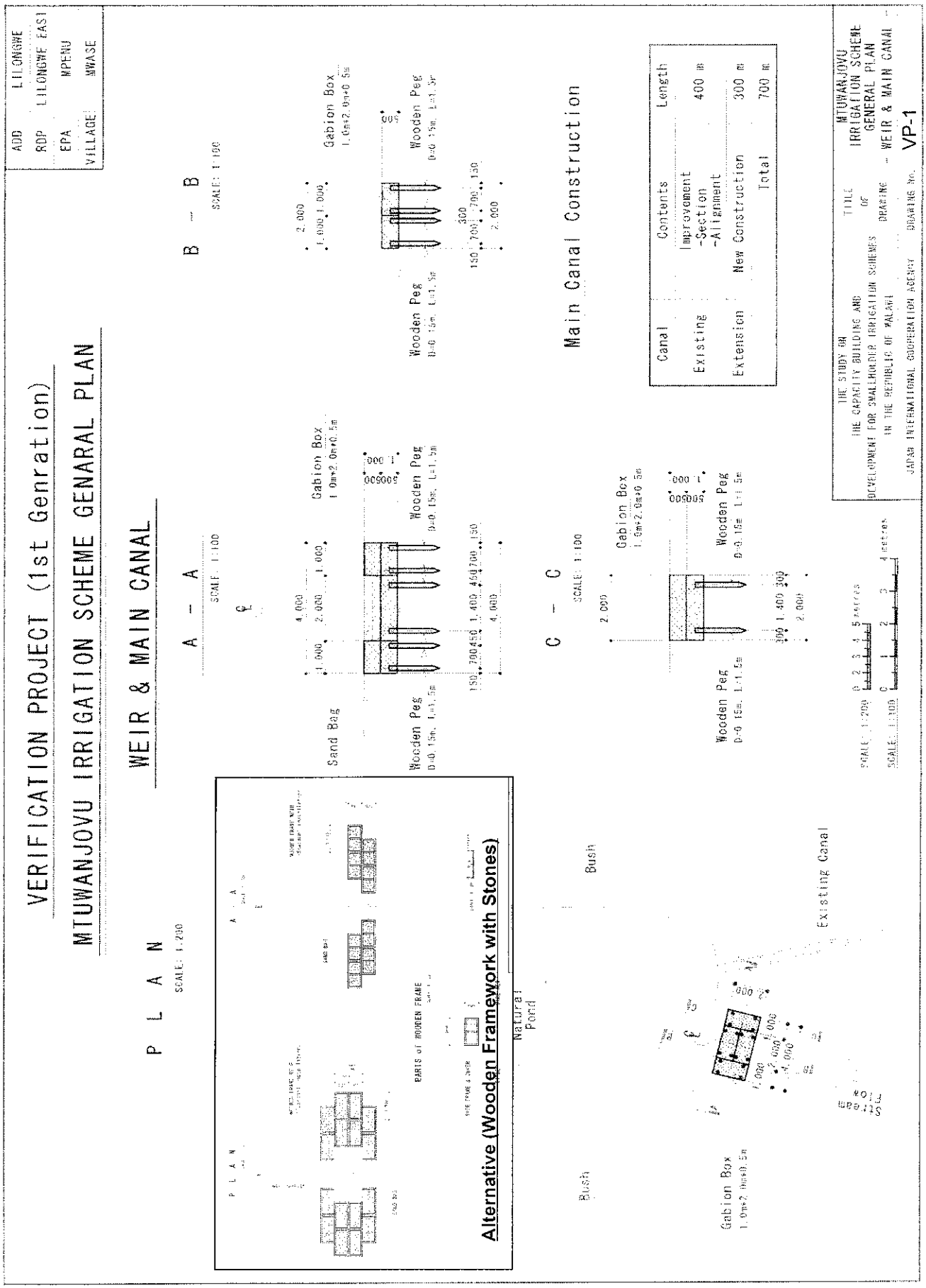


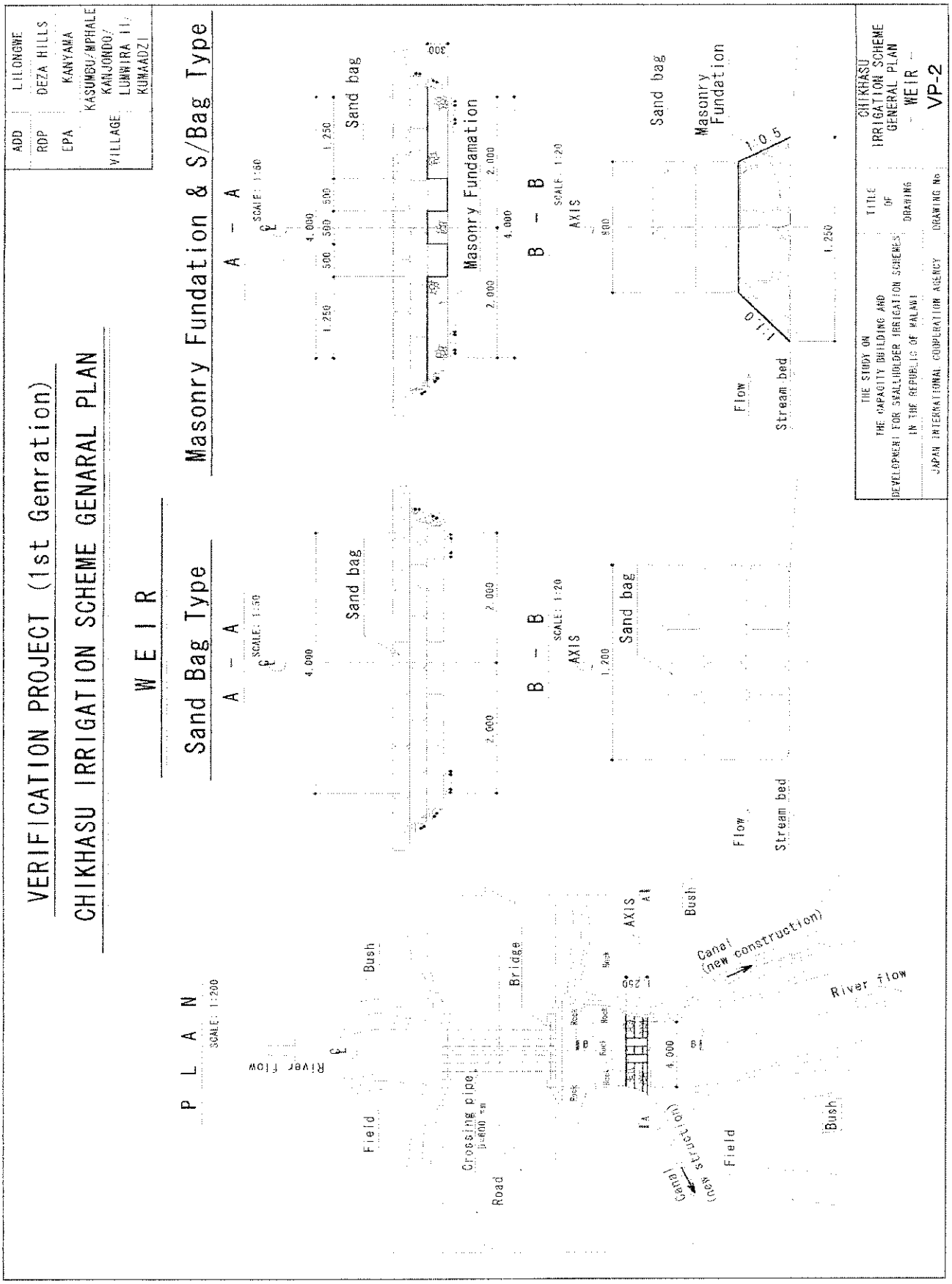
A movable weir constructed by wooden frame gabion (to be tried at Mtuwanjovu site)

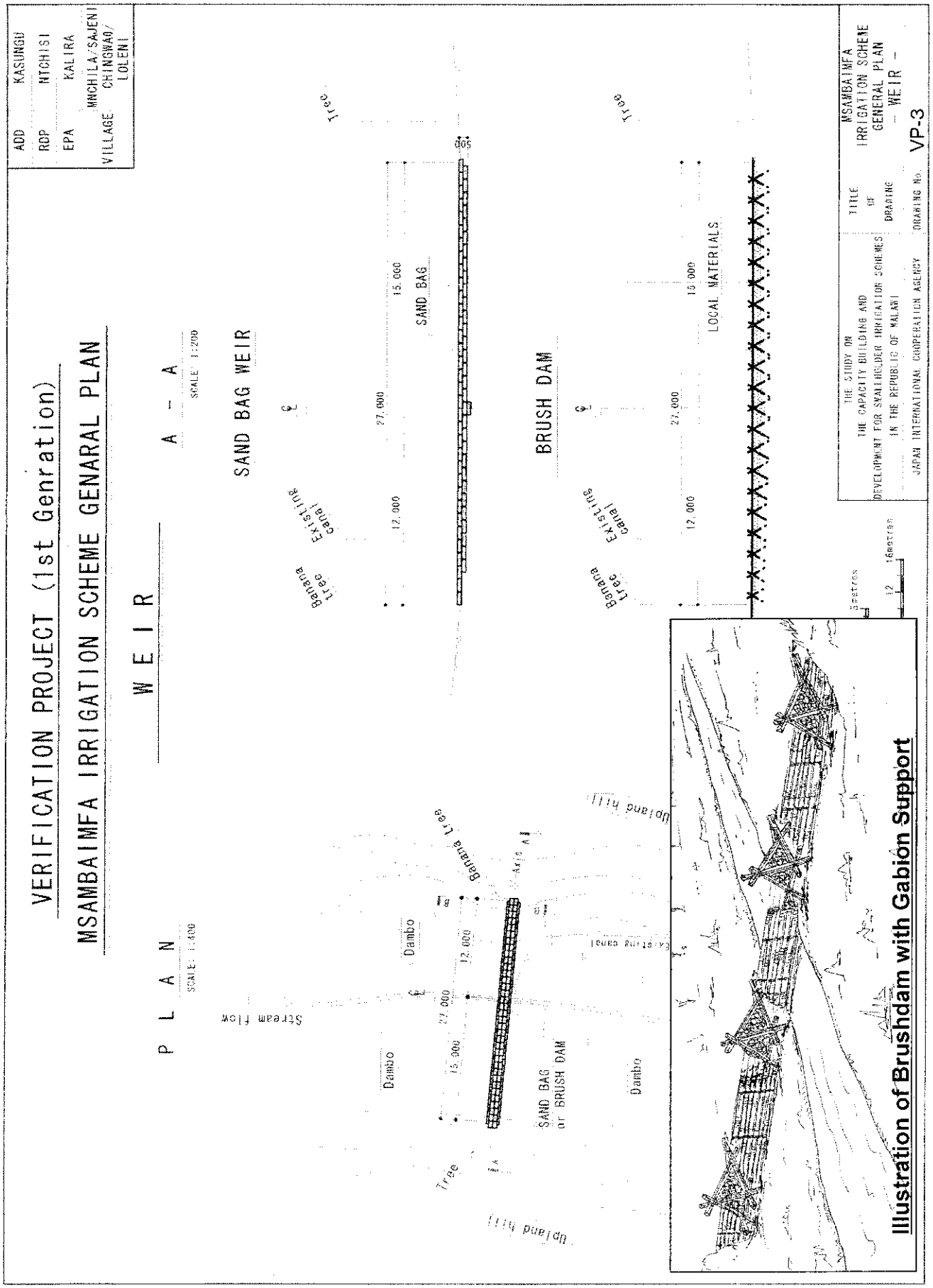


Brush Dam supported by trigonal prop (to be tried at Msambaimfa or Tikolore sites)

[2] Manufactured gabion net is imported to Malawi, razing the cost. Gabion net can be manually woven even by farmers under proper technical guidance if the wire is available.


VERIFICATION PROJECT (1st Genration)
MTUWANJOVU IRRIGATION SCHEME GENARAL PLAN
WEIR & MAIN CANAL
P L A N
SCALE: 1:200
A - A
SCALE: 1:100
B - B
SCALE: 1:100
C - C
SCALE: 1:100
Main Canal Construction
Canal
Contents
Length
Existing
Improvement -Section -Alignment
400 m
Extension
New Construction
300 m
Total
700 m
Sand Bag
Gabion Box
Wooden Peg
Bush
Natural Pond
Existing Canal
Alternative (Wooden Framework with Stones)
PARTS of WOODEN FRAME
ADD LILONGWE
RDP LILONGWE EAST
EPA MPENU
VILLAGE MWASE
THE STUDY ON THE CAPACITY BUILDING AND DEVELOPMENT FOR SMALLHOLDER IRRIGATION SCHEMES IN THE REPUBLIC OF MALAWI
TITLE OF DRAWING
MTUWANJOVU IRRIGATION SCHEME GENERAL PLAN -- WEIR & MAIN CANAL --
JAPAN INTERNATIONAL COOPERATION AGENCY
DRAWING No. VP-1


VERIFICATION PROJECT (1st Genration)
CHIKHASU IRRIGATION SCHEME GENARAL PLAN
W E I R
Sand Bag Type
Masonry Fundation & S/Bag Type
P L A N
SCALE: 1:200
A – A
SCALE: 1:50
B – B
SCALE: 1:20
AXIS
Sand bag
Masonry Fundamation
Masonry Fundation
River flow
Field
Bush
Road
Bridge
Crossing pipe
Canal (new construction)
Canal (new construction)
Flow
Stream bed
1:0.5
0.1:1
ADD LILONGWE
RDP DEZA HILLS
EPA KANYAMA
VILLAGE KASUMBU/MPHALE KANJONDO/ LUWIRA II KUMAADZI
THE STUDY ON THE CAPACITY BUILDING AND DEVELOPMENT FOR STAKEHOLDER IRRIGATION SCHEMES IN THE REPUBLIC OF MALAWI
TITLE OF DRAWING
CHIKHASU IRRIGATION SCHEME GENERAL PLAN
WEIR
JAPAN INTERNATIONAL COOPERATION AGENCY
DRAWING No
VP-2


VERIFICATION PROJECT (1st Genration)
MSAMBAIMFA IRRIGATION SCHEME GENARAL PLAN
W E I R
P L A N
SCALE 1:400
A - A
SCALE 1:200
SAND BAG WEIR
BRUSH DAM
SAND BAG
LOCAL MATERIALS
SAND BAG
or BRUSH DAM
Stream flow
Dambo
Upland hill
Banana tree
Existing canal
Axis A-A
ADD KASUNGU
RDP NTCHISI
EPA KALIRA
VILLAGE MNCHILA/SAJENI CHINGWAO/ LOLENI
THE STUDY ON THE CAPACITY BUILDING AND DEVELOPMENT FOR SMALLHOLDER IRRIGATION SCHEMES IN THE REPUBLIC OF MALAWI
JAPAN INTERNATIONAL COOPERATION AGENCY
TITLE OF DRAWING
MSAMBAIMFA IRRIGATION SCHEME GENERAL PLAN - WEIR -
DRAWING No. VP-3
Illustration of Brushdam with Gabion Support

VERIFICATION PROJECT (1st Genration)

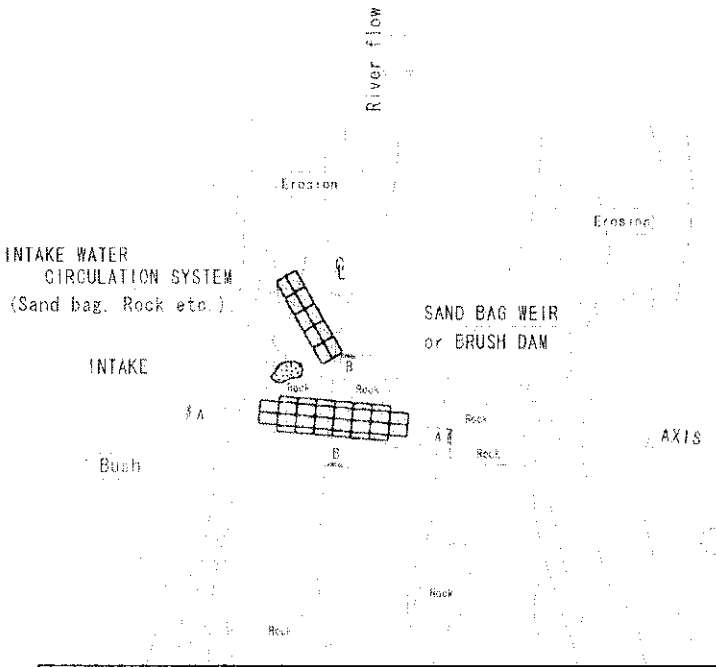
TIKOLORE IRRIGATION SCHEME GENARAL PLAN

ADD	KASUNGU
RDP	DOWA
EPA	MVERA
VILLAGE	FANDANI

WEIR

P L A N

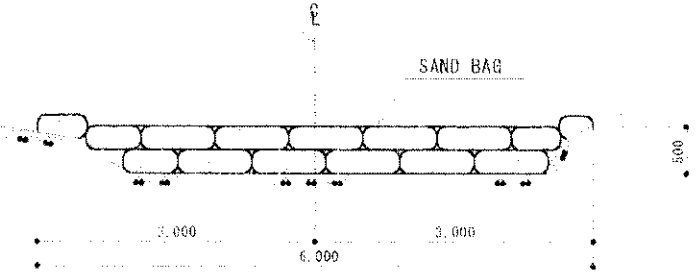
SCALE: 1:200



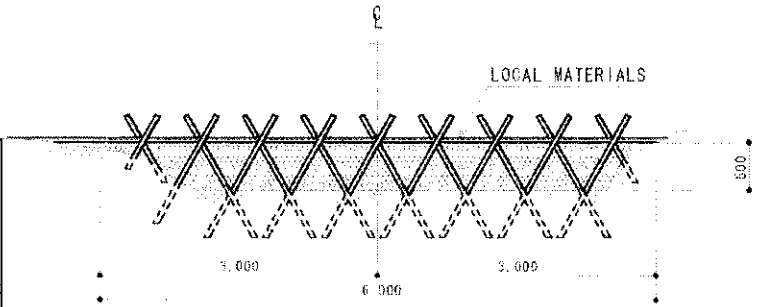
A - A

SCALE: 1:50

SAND BAG WEIR



BRUSH DAM



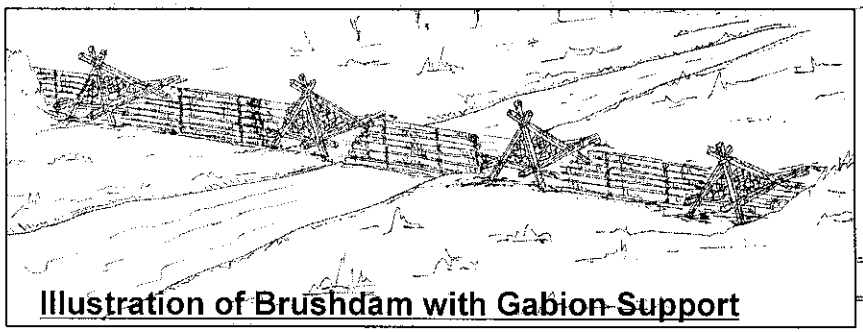


Illustration of Brushdam with Gabion Support

1 2 metres

3 4 5metres

THE STUDY ON THE CAPACITY BUILDING AND DEVELOPMENT FOR SMALLHOLDER IRRIGATION SCHEMES IN THE REPUBLIC OF MALAWI	TITLE OF DRAWING	TIKOLORE IRRIGATION SCHEME GENERAL PLAN - WEIR -
JAPAN INTERNATIONAL COOPERATION AGENCY	DRAWING No.	VP-4

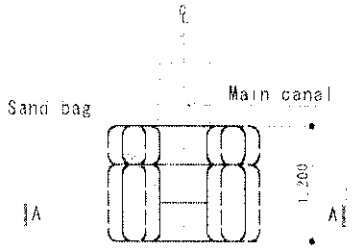
GENARAL PLAN of VERIFICATION PROJECT

I N T A K E

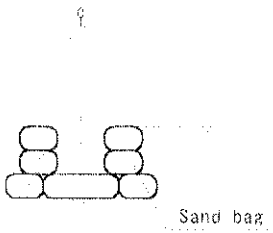
(common to all irrigationl scheme) SCALE: 1:50

SAND BAG

P L A N

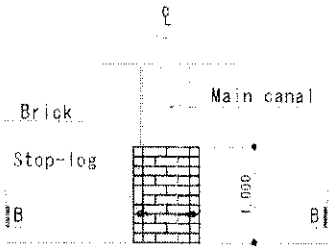


A - A

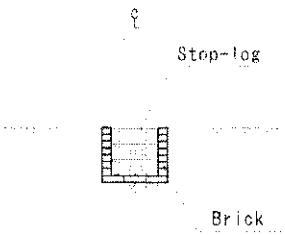


BRICK (with Stop-log)

P L A N

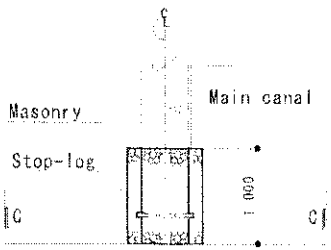


B - B

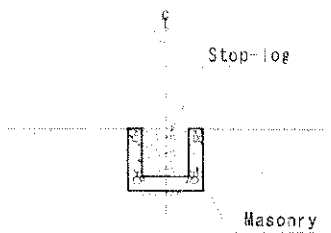


MASONRY (with Stop-log)

P L A N

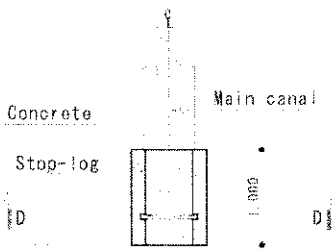


C - C

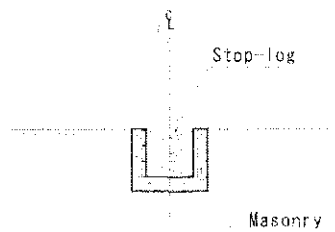


CONCRETE (with Stop-log)

P L A N



D - D



SCALE: 1:50 0 1 2 metres

THE STUDY ON THE CAPACITY BUILDING AND DEVELOPMENT FOR SMALLHOLDER IRRIGATION SCHEMES IN THE REPUBLIC OF MALAWI	TITLE OF DRAWING	GENERAL PLAN of VERIFICATION PROJECT - INTAKE -
JAPAN INTERNATIONAL COOPERATION AGENCY	DRAWING No.	VP-5

GENNERAL PLAN of VERIFICATION PROJECT

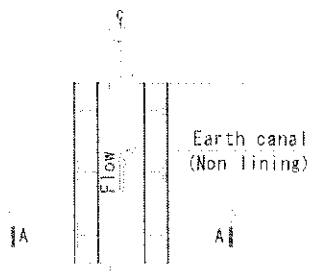
MAIN CANAL

(common to all irrigationl scheme)

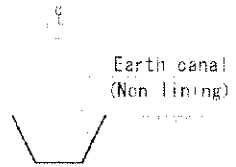
SCALE: 1:50

EARTH CANAL

P L A N

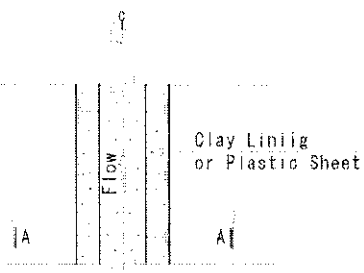


A - A

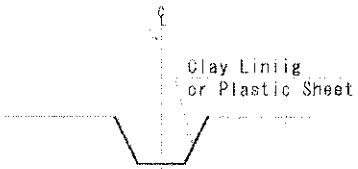


CLAY/ PLASTIC SHEET LINING

P L A N

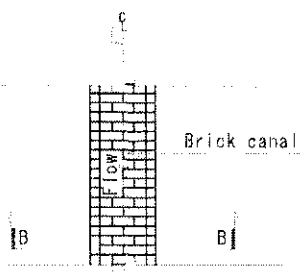


A - A

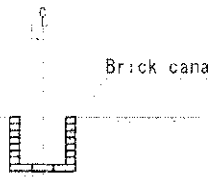


BRICK CANAL

P L A N

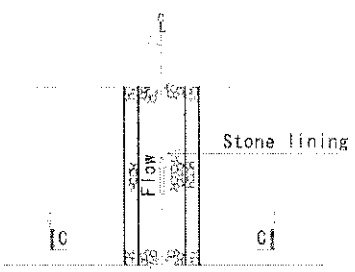


B - B

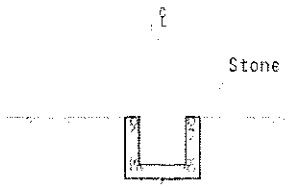


STONE LINING

P L A N

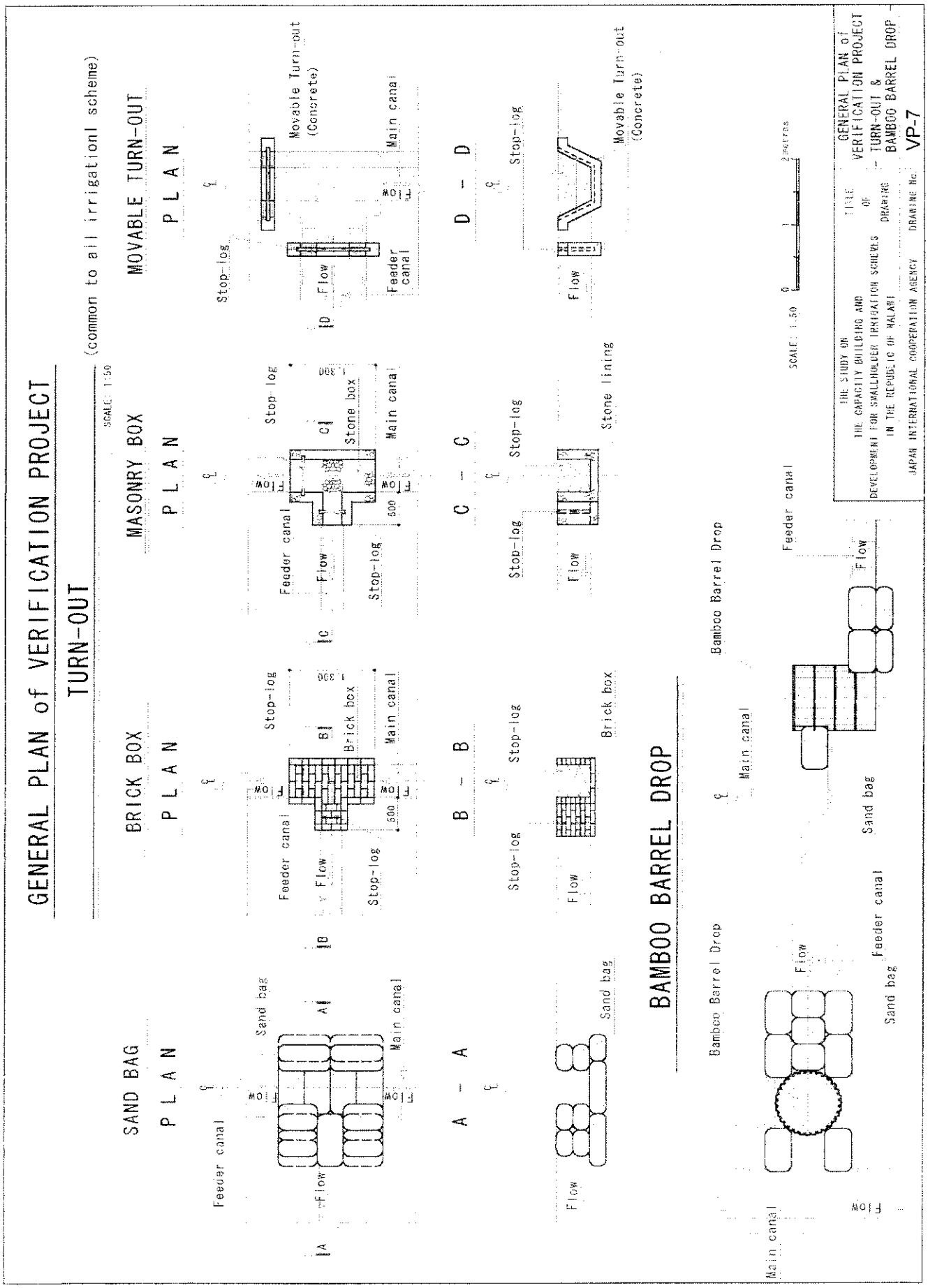


C - C



SCALE: 1:50 0 1 2 metres

THE STUDY ON THE CAPACITY BUILDING AND DEVELOPMENT FOR SMALLHOLDER IRRIGATION SCHEMES IN THE REPUBLIC OF MALAWI	TITLE OF DRAWING	GENERAL PLAN of VERIFICATION PROJECT - MAIN CANAL -
JAPAN INTERNATIONAL COOPERATION AGENCY	DRAWING No.	VP-6

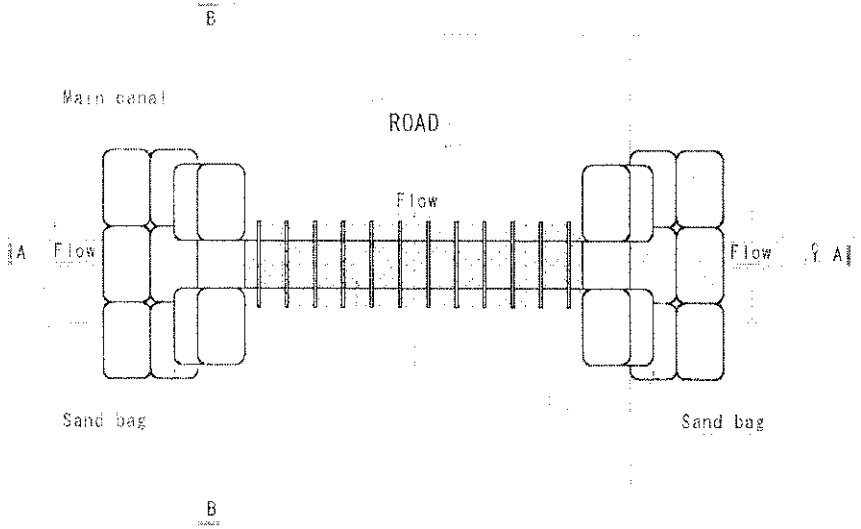

GENERAL PLAN of VERIFICATION PROJECT
TURN-OUT
(common to all irrigationl scheme)
SCALE 1:50
SAND BAG
PLAN
BRICK BOX
PLAN
MASONRY BOX
PLAN
MOVABLE TURN-OUT
PLAN
A - A
B - B
C - C
D - D
BAMBOO BARREL DROP
Feeder canal
Main canal
Sand bag
Brick box
Stone box
Stone lining
Stop-log
Flow
Movable Turn-out
(Concrete)
Bamboo Barrel Drop
THE STUDY ON
THE CAPACITY BUILDING AND
DEVELOPMENT FOR SMALLHOLDER IRRIGATION SCHEMES
IN THE REPUBLIC OF MALAWI
JAPAN INTERNATIONAL COOPERATION AGENCY
TITLE
GENERAL PLAN of
VERIFICATION PROJECT
OF
- TURN-OUT &
DRAWING
BAMBOO BARREL DROP
DRAWING No.
VP-7

GENERAL PLAN of VERIFICATION PROJECT

ROAD CROSSING STRUCTURE

SCALE: 1:50

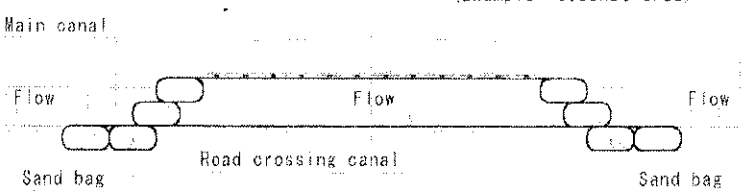
P L A N



Road crossing canal
Local materials
(Timber, Branch, Grass etc.)
(Example: Coconut tree)

A – A

Local materials
(Timber, Branch, Grass etc.)
(Example: Coconut tree)



B – B

Local materials
(Timber, Branch, Grass etc.)
(Example: Coconut tree)

SCALE: 1:50 0 1 2metres

THE STUDY ON THE CAPACITY BUILDING AND DEVELOPMENT FOR SMALLHOLDER IRRIGATION SCHEMES IN THE REPUBLIC OF MALAWI	TITLE OF DRAWING	GENERAL PLAN of VERIFICATION PROJECT - ROAD CROSSING -
JAPAN INTERNATIONAL COOPERATION AGENCY	DRAWING No.	VP-8

1.4.4 Construction Cost

In estimating construction cost, unskilled labors have not been counted in all the cases as this is to be provided by the farmers. Alternative options such as weir constructed by sand bag or concrete have been considered, from which the farmers are to select depending on their financial and labor affordability. Construction cost for the verification projects is estimated as follows:

1) Mtuwanjovu Site

Diversion weir (MK '000)

Items \ Type	(W-1) Sand bag	(W-2) Brush dam	(W-3) Gabion box	(W-4) Masonry	(W-5) Concrete
Materials	2.5	0.5	33.0	28.0	N.A
Skilled Labor	0.0	0.0	0.0	1.0	N.A.
Total	2.5	0.5	33.0	29.0	N.A.

Main canal L= 700 m (Improve 400m, New 300m) (MK '000)

Items \ Type	(MC-1) Earth canal	(MC-2) Brick canal	(MC-3) Masonry	(MC-4) Concrete lining
Materials	0.0	328.0	455.5	B973.0
Skilled Labor	0.0	22.5	26.0	22.5
Total (700 m)	0.0	350.5	481.5	995.5
Per 1 m	Labor only	0.5	0.7	1.4

Intake (MK '000)

Items \ Type	(IT-1) Sand bag	(IT-2) Brick made	(IT-3) Masonry	(IT-4) Concrete
Materials	1.0	1.5	3.0	6.0
Labor	0.0	0.0	0.0	0.0
Total (per 1 nos.)	1.0	1.5	3.0	6.0

Turnout N=17 nos. (MK '000)

Items \ Type	(TO-1) Sand bag	(TO-2) Brick box	(TO-3) Masonry box	(TO-4) Concrete box
Materials	0.3	1.0	2.5	6.0
Labor	0.0	0.0	0.0	0.0
Total (per 1 nos.)	0.3	1.0	2.5	6.0
G.Total 17 nos.	5.0	13.0	39.5	99.5

Remark) Numbers of turnout is estimated to be at 40 m each.

Road crossing (MK '000) 18.0

Total cost (MK '000)

Range of Total Cost	Weir	Main Canal	Intake	Turn-out	Sub-total	Road Crossing	Total	MK'000/ha A=6.5ha	US$/ha A=6.5 ha
Lowest	W-2	MC-1	IT-1	TO-1					(1MK=0.011$)
	0.5	0.0	1.0	5.0	6.5	18.0	24.5	**3.8**	**42**
With	W-3	MC-1	IT-1	TO-1					
Recommendable Weir	33.0	0.0	1.0	5.0	39.0	18.0	57.0	**8.8**	**97**
Highest	W-3	MC-4	IT-4	TO-4					
	33.0	995.5	6.0	99.5	1134.0	18.0	1152.0	**177.0**	**1947**

Tools (MK '000) 86.5

2) Chikhasu Site

Diversion weir (MK '000)

Items \ Type	(W-1) Sand bag	(W-2) Brush dam	(W-3) Gabion box	(W-4) Masonry	(W-5) Concrete
Materials	0.5	0.5	33.0	7.0	46.5
Labor	0.0	0.0	0.0	0.0	0.5
Total	0.5	0.5	33.0	7.0	47.0

Main canal L=1,400 m (New) (MK '000)

Items \ Type	(MC-1) Earth canal	(MC-2) Brick canal	(MC-3) Masonry	(MC-4) Concrete lining
Materials	0	655.0	910.5	1946.0
Skilled Labor	0	46.0	52.0	45.5
Total 1,400 m	0	701.0	962.5	1991.5
Per 1 m	Labor only	0.5	0.7	1.4

Intake (MK '000)

Items \ Type	(IT-1) Sand bag	(IT-2) Brick made	(IT-3) Masonry	(IT-4) Concrete
Materials	1.0	1.5	3.0	6.0
Labor	0.0	0.0	0.0	0.0
Total (per 1no.)	1.0	1.5	3.0	6.0

Turnout N= 35 nos. (MK '000)

Items \ Type	(TO-1) Sand bag	(TO-2) Brick box	(TO-3) Masonry box	(TO-4) Concrete box
Materials	0.3	1.0	2.5	6.0
Labor	0.0	0.0	0.0	0.0
Total (per 1 nos.)	0.3	1.0	2.5	6.0
G.Total 35 nos.	10.5	27.0	81.0	205.0

Remark) Numbers of turnout is estimated to be at 40 m each.

Total cost (MK '000)

Range of Total Cost	Weir	Main Canal	Intake	Turn-out	Total	MK'000/ha A=18 ha	US$/ha A=18 ha
Lowest	W-1	MC-1	IT-1	TO-1			(1MK=0.011$)
	0.5	0.0	1.0	10.5	12.0	**0.7**	**8**
With	W-4	MC-1	IT-1	TO-1			
Recommendable Weir	7.0	0.0	1.0	10.5	18.5	**1.0**	**11**
Highest	W-5	MC-4	IT-4	TO-4			
	47.0	1991.5	6.0	205.0	2249.5	**125.0**	**1375**

Tools (MK '000) 173.0

3) Msambaimfa Site

Diversion weir (MK '000)

Type / Items	(W-1) Sand bag	(W-2) Brush dam	(W-3) Gabion box	(W-4) Masonry	(W-5) Concrete
Materials	43.0	3.0	141.0	84.5	N.A.
Labor	0.0	0.0	0.0	5.0	N.A.
Total	43.0	3.0	141.0	89.5	N.A.

Main canal L= 1,470m (Improve 470m, New 1,000m) (MK '000)

Type / Items	(MC-1) Earth canal	(MC-2) Brick canal	(MC-3) Masonry	(MC-4) Concrete lining
Materials	0	688.0	956.0	2043.0
Labor	0	48.0	55.0	48.0
Total (1,470 m)	0	736.0	1011.0	2091.0
Per 1 m	Labor only	0.5	0.7	1.4

Intake (MK '000)

Type / Items	(IT-1) Sand bag	(IT-2) Brick made	(IT-3) Masonry	(IT-4) Concrete
Materials	1.0	1.5	3.0	6.0
Labor	0.0	0.0	0.0	0.0
Total (per 1no.)	1.0	1.5	3.0	6.0

Turnout N= 36 nos. (MK '000)

Type / Items	(TO-1) Sand bag	(TO-2) Brick box	(TO-3) Masonry box	(TO-4) Concrete box
Materials	0.3	1.0	2.5	6.0
Labor	0.0	0.0	0.0	0.0
Total (per 1 nos.)	0.3	1.0	2.5	6.0
G.Total 36 nos.	11.0	27.5	83.5	211.0

Remark) Numbers of turnout is estimated to be at 40 m each.

Total cost (MK '000)

Range of Total Cost	Weir	Main Canal	Intake	Turn-out	Total	MK'000/ha A=20 ha	US$/ha A=20 ha	Remark
Lowest	W-2	MC-1	IT-1	TO-1			(1MK=0.011$)	
	3.0	0.0	1.0	11.0	15.0	**0.8**	**9**	
With	W-2	MC-1	IT-1	TO-1				
Recommendable Weir	3.0	0.0	1.0	11.0	15.0	**0.8**	**9**	=Lowest
Highest	W-3	MC-4	IT-4	TO-4				
	141.0	2091.0	6.0	211.0	2449.0	**122.0**	**1342**	

Tools (MK '000) 173.0

4) Tikolore Site

Diversion weir (MK '000)

Items \ Type	(W-1) Sand bag	(W-2) Brush dam	(W-3) Gabion box	(W-4) Masonry	(W-5) Concrete
Materials	9.5	1.0	58.0	10.0	66.0
Labor	0.0	0.0	0.0	0.0	0.5
Total	9.5	1.0	58.0	10.0	66.5

Main canal L=1,200m (Improve 200m, New1,200m) (MK '000)

Items \ Type	(MC-1) Earth canal	(MC-2) Brick canal	(MC-3) Masonry	(MC-4) Concrete lining
Materials	0	562.0	780.0	1668.0
Labor	0	39.0	45.0	39.0
Total (1,200 m)	0	601.0	825.0	1707.0
Per 1 m	Labor only	0.5	0.7	1.4

Intake (MK '000)

Items \ Type	(IT-1) Sand bag	(IT-2) Brick made	(IT-3) Masonry	(IT-4) Concrete
Materials	1.0	1.5	3.0	6.0
Labor	0.0	0.0	0.0	0.0
Total (per 1no.)	1.0	1.5	3.0	6.0

Turnout N= 30 nos. (MK '000)

Items \ Type	(TO-1) Sand bag	(TO-2) Brick box	(TO-3) Masonry box	(TO-4) Concrete box
Materials	0.3	1.0	2.5	6.0
Labor	0.0	0.0	0.0	0.0
Total (per 1 nos.)	0.3	1.0	2.5	6.0
G.Total 30 nos.	9.0	23.0	69.5	175.5

Remark) Numbers of turnout is estimated to be at 40 m each.

Total cost (MK '000)

Range of Total Cost	Weir	Main Canal	Intake	Turn-out	Total	MK'000/ha A=10 ha	US$/ha A=10 ha	Remark
Lowest	W-2	MC-1	IT-1	TO-1			(1MK=0.011$)	
	1.0	0.0	1.0	9.0	11.0	**1.1**	**12**	
With	W-2	MC-1	IT-1	TO-1				
Recommendable Weir	1.0	0.0	1.0	9.0	11.0	**1.1**	**12**	=Lowest
Highest	W-5	MC-4	IT-4	TO-4				
	66.5	1707.0	6.0	175.5	1955.0	**195.5**	**2151**	

Tools (MK '000) 173.0

1.4.5 Construction Schedule (Construction Days Required)

Construction days required in each project site is dependent on what type structure the farmers will select:

1) Mtuwanjovu site

Activity	Days required
1) Survey and Design	10 days
2) Mobilization	
- Pre-construction meeting	3 days
- Discharge measurement	2 days
3) Preparation work	
- Procurement of tools, materials	(10 days)
- Collection of local materials	(to be included construction)
4) Construction	
- Weir	10 – 40 days (depend on type of structure)
- Main canal (L=700m)	30 – 240 days (-do-)
- Intake (per 1 place)	5 days (-do-)
- Turn-out (per 1 place)	2 – 5 days (-do-)
Total	30 – 260 days (depend on type of structure)

2) Chikhasu site

Activity	Days required
1) Survey and Design	15 days
2) Mobilization	
- Pre-construction meeting	3 days
- Discharge measurement	2 days
3) Preparation work	
- Procurement of tools, materials	(10 days)
- Collection of local materials	(to be included construction)
4) Construction	
- Weir	10 – 50 days (depend on type of structure)
- Main canal (L=1,400m)	30 – 240 days (-do-)
- Intake (per 1 place)	5 days (-do-)
- Turn-out (per 1 place)	2 – 5 days (-do-)
Total	30 – 260 days (depend on type of structure)

3) Msambaimfa site

Activity	Days required
1) Survey and Design	15 days
2) Mobilization	
- Pre-construction meeting	3 days
- Discharge measurement	2 days
3) Preparation work	
- Procurement of tools, materials	(10 days)
- Collection of local materials	(to be included construction)
4) Construction	
- Weir	30 – 120 days (depend on type of structure)
- Main canal (L=1,470m)	30 – 250 days (-do-)
- Intake (per 1 place)	5 days (-do-)
- Turn-out (per 1 place)	2 – 5 days (-do-)
Total	50 – 270 days (depend on type of structure)

4) Tikolore site

Activity	Days required	
1) Survey and Design	10 days	
2) Mobilization		
- Pre-construction meeting	3 days	
- Discharge measurement	2 days	
3) Preparation work		
- Procurement of tools, materials	(10 days)	
- Collection of local materials	(to be included construction)	
4) Construction		
- Weir	30 – 70days	(depend on type of structure)
- Main canal (L=1,200m)	30 – 210 days	(-do-)
- Intake (per 1 place)	5 days	(-do-)
- Turn-out (per 1 place)	2 – 5 days	(-do-)
Total	50 – 230 days	(depend on type of structure)

Estimated construction period for weir (including for collection of local materials) (Days)

Name of Site	(W-1) Sand bag	(W-2) Brush dam	(W-3) Gabion box	(W-4) Masonry	(W-5) Concrete
Mtuwanjovu	20	10	40	40	50
Chikhasu	20	10	40	40	50
Msambaimfa	60	30	120	110	250
Tikolore	30	15	60	60	70

Estimated construction period for main canal (including for collection of local materials) (Days)

Name of Site	Length proposed	(MC-1) Earth canal	(MC-2) Brick canal	(MC-3) Masonry	(MC-4) Concrete canal
Mtuwanjovu	700 m	30	130	200	240
Chikhasu	1,400 m	30	130	200	240
Msambaimfa	1,470 m	30	140	210	250
Tikolore	1,200 m	30	120	170	210

Remarks: Numbers of days above are calculated based on number of participants expected as follows:

- Mtuwanjovu 10 persons/day
- Chikhasu 20 persons/day
- Msambaimfa 20 persons/day
- Tikolore 20 persons/day

1.5 Agriculture Development Components

For the purpose of verifying the effectiveness of the draft package of methodologies for smallholder agricultural development discussed in the previous chapter, some programs related to farming aspects will be incorporated in the verification projects. These are; 1) low input farming technology, 2) seed multiplication program, and 3) promotion of strategic marketing activities.

1.5.1 Low Input Farming Technology

Following activities are tentatively proposed for the purpose of promoting low-input farming technology. Department of Agricultural Research and Technical Service has already certified these technologies through various research programs/activities. Therefore, the program aims at demonstrating the technologies, but not developing the technologies.

Table 1.5.1 Agriculture Components for the Verification Project

Activity	Objective
(1) Integrated Nutrient Management - Legume Intercrop system - Compost/Manure Management	- To maintain soil fertility through the adoption of low-cost, sustainable nutrient management. - To achieve crop diversification for food security
(2) Land Conservation Management - Contour Ridging - Agroforestry	- To prevent soil erosion and declining of soil fertility through the adoption of low-cost, sustainable land conservation management.
(3) Integrated Pest Management (IPM)	- To reduce on-farm crop losses through the adoption of low-cost, sustainable pest & disease control method.
(4) Improved Post-harvest Management - Improved Granary - Pit Storage	- To prevent post-harvest losses caused mainly by Lager Grain Borer (LGB). - To contribute shipping control of the produce.
(5) Promotion of Draft Cattle	- To lighten a burden of land preparation through the adoption of draft cattle. - To contribute the supply of dung for manure making.

A study tour to the Lobi Horticultural Appropriate Technology Extension Project, which has an objective to identify and diffuse appropriate horticultural farming techniques, may be a good opportunity for the farmers to see those improved techniques. Draft cattle promotion has to be implemented jointly with an on-going government program that provides four pair of oxen, equipments and cattle fence to each EPA, because there is a great risk of cattle being stolen under the present situation.

1.5.2 Seed Multiplication Program

The activity focuses on the multiplication of OPV maize seed that promises an estimated 50% higher yield than that of local variety throughout three cropping seasons. Taking into consideration public equity, this activity proposes to establish a common field in the irrigation system. OPV seeds from the common field will be distributed to the villagers irrespective of he/she is a member of the irrigation system or not. Several important issues for implementing this activity are as follows:

- The field should be isolated from other maize fields in order to prevent contamination of other varieties' pollen.

- A fallow period of two cropping seasons for maize is required before the seed production is started, or it is desirable to establish the field in a newly reclaimed land.
- A field with long mono cropping should not serve for the seed production because volunteer plants or disease may contaminate the seed crop.
- In order to certify the quality of seed, seed grower should be adequately trained in the seed production techniques. Assistances from Seed Technology Unit in the Department of Agricultural Research and Technical Service and seed multiplication officer of ADD or RDP should be made available.
- Breeders' seed should be procured from agricultural research stations concerned.

1.5.3 Promotion of Strategic Marketing Activities

Improper marketing arrangement makes all the efforts come to nothing even if an increased yield is achieved. In order to maximize the benefit gained from irrigation, it is necessary to improve management capacity of the farmers in line with the transformation of subsistence oriented agriculture into market oriented one. Following activities for strategic marketing will be tried through the verification projects:

Table 1.5.2 Marketing Activities

Activity	Objective
(1) Farm Planning - Record keeping - Gross Margin Analysis - Budgeting - Cash Flow Plan - Income Statement	- To encourage market oriented production to contribute the improvement of the livelihood. - To improve farm management capacity of individual and/or farmers' organization.
(2) Strategic Marketing - Forcing culture/Retarding culture - Shipping adjustment - Vegetable pro. Diversification	- To maximize the profit from the marketing activity. - To improve farm management capacity of individual and/or farmers' organization.

1.5.4 Agriculture Components by Site

Taking into account site specific condition mentioned below, agricultural components for the verification projects are summarized in Table 1.5.3:

- Farm lands in Msambainfa and Tikolore are located on a relatively steep slope, so that land conservation management should be introduced with high priority,
- Maize storage loss in Msambainfa was reported to reach to as high as 40%, therefore improved granary should be introduced in this area,
- Villagers at Tikolore site are already familiar to rear cattle as ox-carts can be seen in and around the area, so that promotion of draft cattle can be tried in this area first,
- Msambainfa site is located very close to the EPA office, enabling seed multiplication program being carried out there,
- Weather in Chikhasu site is very cool as compared to other areas, giving an opportunity of promoting forcing and retarding culture.

- Chikhasu and Msambainfa are located in a rural area, so that shipping adjustment should be practiced in order to do better marketing,
- Draft cattle promotion should not be tried in Mtuwanjov since there is no cattle at present thereby the villagers are not used to rear, and
- Maize seed multiplication should not be tried in Chikhasu as the cool weather does not well meet maize production.

Table 1.5.3 Summary of Agriculture Components

Component	Mtuwanjovu	Chikhasu	Msambainfa	Tikolore
1) Low-input Farming Technology				
1.1) Integrated Nutrient Management				
- Legume Intercrop system	+	+	+	+
- Compost/Manure Management	+	+	+	+
1.2) Land Conservation Management				
- Contour Ridging, etc.	+	+	++	++
- Agroforestry	+	+	++	++
1.3) Integrated Pest Management (IPM)	+	+	+	+
1.4) Improved Post-harvest Management				
- Improved Granary, etc.	+	+	++	+
1.5) Promotion of Draft Cattle		+	+	++
2) Seed Multiplication Program	+		++	+
3) Strategic Marketing Activity				
3.1) Farm Planning & Management	+	+	+	+
3.2) Strategic Marketing				
- Forcing culture/Retarding culture	+	++	+	+
- Shipping adjustment	+	++	++	+
- Vegetable promotion, Diversification	+			+

Note: the number of "+" shows the extent of the necessity or the possibility of implementing that program.

1.6 Linkage bet. Verification Components and Dev. Constraints & Opportunities

Given the development constraints and opportunities aforementioned, how agricultural development components in the verification projects have been devised is summarized in the Figure 1.6.1. The figure comprehensively shows the linkage between the verification components and development constraints & opportunities; namely looking at clockwise the figure,

1. Expensive agriculture input and distorted market condition lead us to a development strategy that priority should be given to stabilizing their livelihood in their locality as the first step, and this entails the promotion of seed multiplication program of OPV maize, compost manure and legume intercropping system together with introduction of improved post-harvesting technology represented by improved granary,

2. Faced with development constraints of lacks of technical officers, transportation and fund, cluster-wise development should be pursued since this approach will reduce the logistics expenses and can maximize the use of limited resources. Also pointed out is development and adaptation of useful local technologies that can be practiced by the farmers themselves with locally available material,

3. In line with cluster-wise development and promotion of local technologies, such development opportunities as daily agriculture radio program, trained staff in participatory development, and structured organization in place will contribute to extending smallholder irrigation scheme nation-widely given such external support as seminar/training, dissemination of package and leaflet,

4. Appropriate agricultural technology already in place such as ridging, hedging and compost, etc. can easily be disseminated through inter-visiting among farmer groups and this inter-visiting tour, a kind of study tour, also leads to minimizing the government expenses, and

5. With development opportunities of existence of extensive network of rural financial institution and strong norm of local people still in place, there should be a possibility of promoting revolving fund.

Figure 1.6.1 Constrains & Opportunities and Verification Projects

Development Constrains :
- Expensive agricultural input, especially chemical fertilizers
- Distorted market conditions of seeds and fertilizers under Targeted Input Program

Stabilizing the livelihood in their locality as the first step

- -Seed Multiplication of Open Pollinated Variety Maize
- -Promotion of Compost / Manure
- -Legume Intercropping System

Improved Post-Harvesting Technology
- Promotion of Improved Granary

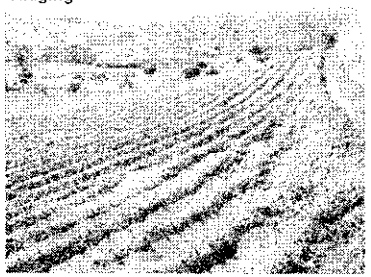
Development Opportunities :
- Rural Financial Institution (Total 163 branch offices set up in EPA office)
- Traditional governance and social norm in rural society

→ High Potential of Functional Revolving Fund

Opportunities : Appropriate Agricultural Technologies already in place
- Ridging
- Hedging
- Compost. etc.

→ Agricultural extension and Enlightenment through inter-visiting among farmers' groups

Ridging

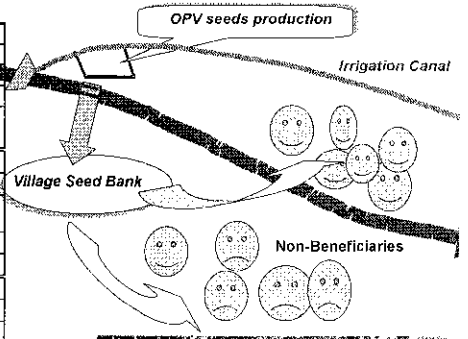


Compost

Components for the Verification Project

		Lilongwe		Kasungu	
Prospective Sites	ADD				
	RDP	Lilongwe East	Dedza Hills	Ntchisi	Dowa
	EPA	Mpenu	Kanyama	Karila	Mvera
	Site	Mtuwanjovu	Chikhasu	Msambaimfa	Tikolore
	Village	Mwase	Kasumbu/Kanjondo/ Lumwira II/ Kumaadzi/Mphale	Mchela / Chinguwo /Sajeni	Fandani
Irrigation Componets	Existing / New	A=1.0 ha, Existing	New	A=4.0 ha, Existing	A=0.1 ha, Existing
	Potential area	A=5.5 ha for Expansion	A=18.0 ha	A=16.0 ha for Expansion	A=10.0 ha for Expansion
	Type of irrigation	Stream diversion at downstream dambo	Mountain stream diversion	Stream diversion at upstream dambo	Stream diversion at downstream dambo (in a hilly area)
	Slope at Diversion	Gentle, soil	Steep, rock exposed	Gentle, soil	Steep, rock exposed
	Remarks	Treadle Pump/Revolving Fund			
Agriculture Components	**(1) Low-input Farming Technology**				
	1) Integrated Nutrient Management				
	- Legume Intercrop system	+	+	+	+
	- Compost/Manure Management	+	+	+	+
	2) Land Conservation Management				
	- Contour Ridging, etc.	+	+	++	++
	- Agroforestry	+	+	++	++
	3) Integrated Pest Management (IPM)	+	+	+	+
	4) Improved Post-harvest Management				
	- Improved Granary, etc.	+	+	++	+
	5) Promotion of Draft Cattle		+	+	++
	(2) Seed Multiplication Program	+		++	+
	(3) Strategic Marketing Activity				
	1) Farm Planning & Management	+	+	+	+
	2) Strategic Marketing				
	- Forcing culture/Retarding culture	+	++	+	+
	- Shipping adjustment	+	++	++	+
	- Vegetable Promption & Diversification	+			+
	Remarks	1) Good market condition due to being close to a trunk road	1) Forcing culture / Retarding culture in Cool climate 2) Shipping adjustment under bad market access	1) Serious post-harvest damage caused by LGB→ Improved granary 2) Close to EPA→Seed multiplication which requires relatively high technology 3) Shipping adjustment under bad market access	1) Steep slope→Promotion of Soil Conservation 2) Ox-cart is common→Promotion of animal drafting 3) Good market condition due to being close to a trunk road

OPV Maize Production in Dry season



Constraints :
- Lack of irrigation technical officers
- Lack of transportation
- Lack of fund

→ -Cluster-wise development
-Development and adaptation of useful local technologies

Extension Activities in National Level

External Support :
- Seminar/Training related to irrigation planning, implementation, operation and maintenance of the irrigation facilities
- Package of smallholder irrigation development
- Leaflet with 4-6 pages about smallholder irrigation development

+

Development Opportunities :
- Daily agricultural radio program
- Total 160 staffs trained in participatory development planning
- Structured organization system composed of ADDs, RDPs, and EPAs (Total front line staffs are about 1,500)

CHAPTER 2 INITIAL ENVIRONMENTAL EXAMINATION (IEE)

This chapter discusses environmental policies and regulations in the Republic of Malawi, present environmental conditions in and around the verification project sites, possible environmental impacts caused by the verification projects and the mitigation measures to minimize them.

2.1 Environmental Laws and EIA Procedure

2.1.1 Environmental Act, Regulation and Policy

Malawi attended at the United Nations Conference on Environmental and Development (UNCED) in 1992, and it brought initiatives to address the country's environmental problem. The National Environmental Action Plan (NEAP) was launched as the framework legislation on environmental management by GOM in 1994, which identified major environmental problems and outlined steps on how to address them. Consequently, Malawian Environmental Policy was formulated and Environmental Management Act (EMA) was enacted in 1996. Environmental Impact Assessment (EIA) guidelines, which regulate the EIA process, were prescribed in 1997.

2.1.2 Environmental Regulatory Setting-up relative to Irrigation Development

Irrigation projects primary provide water for farming, the project, however, may face to a problem of water deficiency and water distribution. Agricultural activities accompanied with irrigation projects may also induce environmental concerns such as contamination of soil and water, land degradation, and decrease of biological diversification. The following list shows sectoral legislations with environmental and natural resources provisions related to irrigation development:

- Land resources legislation: Land Act, Registered Land Act, Customary Land Act, Lilongwe Agricultural Development Area Border, Local Land Boards Act, Land Survey Act
- Water resource legislation: Water Resources Act, Water Resources (Water Pollution Control) Regulations
- Plants animals legislation: Plant Protection Act, Special Crops Act
- Minerals, chemicals and pollution legislation: Fertilizers, Farm Feeds and Remedies Act
- Other Acts: Local Government (Urban Areas) Act

2.1.3 EIA Procedure

EIA in the Republic of Malawi is mandated by the Director of Environmental Affairs Department, Ministry of Forestry, Fisheries and Environmental Affairs. In the EIA approval process, firstly, a determination by a licensing authority (in this case DOI) is done as to whether a proposed project should be prescribed under EMA or not. If not, no further action concerning EIA requirements needs to be undertaken. If yes, the Project Brief, which is a document describing the project detail, should be submitted to the Director of Environmental Affairs who does screening of EIA requirement.

If EIA is not required, the director just gives the recommendations of environmental management to the developer. If EIA is required, the developer (DOI) must do EIA study. EIA study should take 5 major stages; 1) identification, 2) prediction, 3) evaluation and interpretation, 4) mitigation, and 5) monitoring and management, those of which should be incorporated in the EIA report.

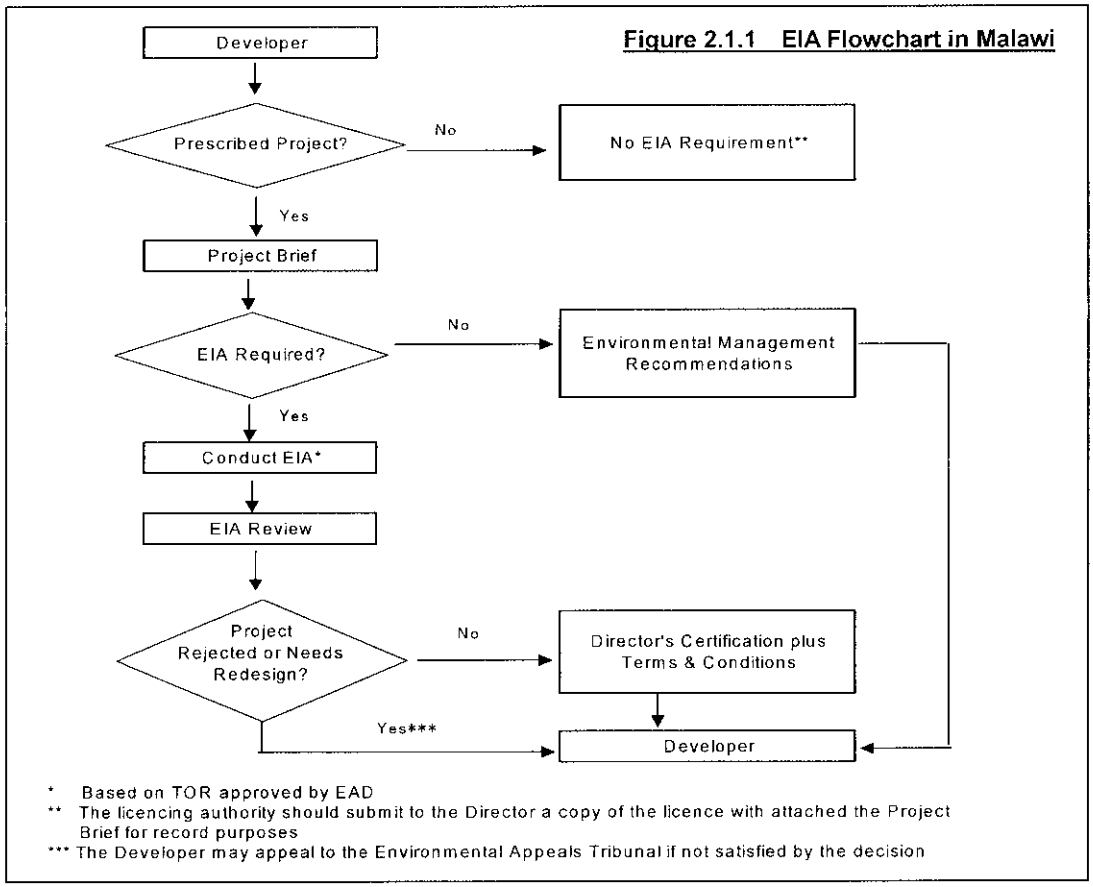


Figure 2.1.1 EIA Flowchart in Malawi

2.2 Initial Environmental Examination for the Verification Project

Environmental Impact Assessment (EIA) guidelines 1997 mention that an irrigation project with service area of more than 10 ha may require EIA. The service area of verification projects, the phase II study is to undertake, will be less than 10 ha in some cases but in other cases be more than 10 ha. For the prospective first generation's verification project, four sites have been identified, and those are as follows:

Table 2.2.1 Summary of Four Sites for the Prospective Verification Project

Site	Service area, ha	ADD	RDP	EPA	Present condition
Mtuwanjovu	6.5 (1.0)	Lilongwe	Lilongwe East	Mpenu	Canal but not yet irrigated
Chikhasu	18.0 (0.0)	Lilongwe	Dedza Hills	Kanyama	No irrigation done
Msambaimfa	20.0 (4.0)	Kasungu	Ntchisi	Kalira	4.0 ha irrigated
Tikolore	10.0 (0.1)	Kasungu	Dowa	Mvera	0.1 ha individual basis

Note: Service area in bracket is the existing service area.

According to the guidelines, prospective verification projects of Chikhase and Msambaimfa may need EIA but Mtuwanjovu and Tikolore do not. This Study, as the first step, carries out Initial Environmental Examination (IEE) with reference to a guideline prescribed by JICA.

and based on the result if full EIA is required or not will be recommended. The IEE checks the effects on social and natural environment by the verification projects. The checklist is shown in Table 2.2.2, and following are the summary:

- Irrigation projects primary provide water for farming. These are executed just in areas which have water sources. Therefore, it may create income gap between beneficiaries and non-beneficiaries, and consequently it may induce some conflict. To mitigate this disparity between the beneficiaries and non-beneficiaries in a village, this Study proposes to set up a common field for local seed multiplication. As most farmers in Malawi faces seed shortage, this proposed common field could contribute to the village's overall agriculture improvement, diminishing the possibility of local conflict.
- Irrigation system may induce water deficiency in areas in the downstream. Before construction of irrigation equipment, the survey of water quantity and water-use situation for the downstream will be carried out. Monitoring of quantity of water will continue during the project implementation.
- Since this verification project will promote methods of organic cultivation and soil conservation, it is supposed to decrease contamination of soil and water induced by fertilizers and agro-chemicals, and to prevent soil degradation and erosion. However, organic compounds applied in agricultural activities might induce water contamination in the downstream. Monitoring of water quality will be carried out throughout the project implementation.
- This Study includes soil conservation activities by planting for example vetiver grass, contour ridge, contour hedgerow, and application of organic matter. Those are supposed to increase soil fertility and thereby to reduce soil erosion.
- This Study recommends using natural pesticide, for example, *Tephrosia vogelii*, *Azadirachta indica* (neem tree), instead of agro-chemicals and other physical methods to prevent plant diseases. Consequently, it is supposed to reduce usage of agro-chemicals, or at least the usage should remain as the present level.
- Some irrigation systems use dambo as a water source. In this case, a part of dambo area may be dried, which may induce shift of vegetation from wetland types to upland types. Moreover, it is supported to expand farm areas, so the vegetation in the areas would change. However, as the scale of irrigation scheme is small, the impacts are supposed to be small or negligible.
- In some case, organic compounds applied may leach out and may induce water eutrophication. However, as this Study recommends proper water management methods and soil conservation methods, the impact is supposed to be small or negligible.
- Irrigation schemes generally change ways of water and availability of water in a certain place. As scale of irrigation schemes for the verification project is small, the change is supposed to be small or negligible.

Table 2.2.2 Checklist for Proving Environmental Impact

Applicable columns with the following impact degree are marked with "X"(negative impact) and "O"(positive impact).
SEI : Significant Environmental Impact
A : The subject SEI is unquestionably induced by the Project.
B : The subject SEI is likely to be induced by the Project.
C : The SEI is not fully known.
D : There is no possibility that the subject SEI is likely to be induced by the Project.

Categories of Environmental Impact	Evaluation A	B	C	D	Evaluation Basis
1. Planned residential settlement				X	No plan in this Project.
2. Involuntary resettlement				X	No plan in this Project.
3. Substantial changes in the way of life				X	Not expected.
4. Conflict among communities and people			X		Conflict may happen between beneficiary and non-beneficiary.
5. Impact on native people				X	Not expected
6. Population increase				X	Not expected
7. Drastic change in population composition				X	Not expected.
8. Changes in bases of economic activities			O		It may increase agricultural activities in dry season.
9. Occupational change and loss of job opportunities				X	Not expected.
10. Increase in income disparities			X		It may increase income gap between Beneficiary and non-beneficiary.
11. Adjustment & regulation of water or fishing (riparian) rights			X		Regulation about water right or water distribution may be required.
12. Changes in social and institutional structures				X	Not expected.
13. Changes in existing institutions and customs				X	Not expected.
14. Increased use of agro-chemicals			O		It is not expected to rapidly increase quantity of agro-chemical. This recommends using natural pesticides and other safety methods, so that the amount of usage of agrochemical is expected to decrease.
15. Outbreak of endemic diseases				X	Not expected.
16. Spreading of endemic diseases				X	Not expected.
17. Residual toxicity of agrochemicals			O		Use of pesticide is not expected to increase rapidly. This recommends using natural pesticides and other methods to prevent pests, so the amount of usage of agrochemical is expected to decrease.
18. Increase in domestic and other human wastes				X	Not expected.
19. Impairment of historic remains and cultural assets				X	No historic remains in this area.
20. Damage to aesthetic sites				X	Not expected
21. Impairment of buried assets				X	Not expected.
22. Changes in vegetation			X		Wetland vegetation in some areas may change into upland vegetation.
23. Negative impact on important or indigenous fauna and flora				X	The area has already used for agricultural activities.
24. Degradation of ecosystems with biological diversity				X	The area has already used for agricultural activities.
25. Proliferation of exotic and/or hazardous species				X	Not expected.
26. Destruction of wetlands and peatlands			X		Many of wetlands(dambo) have already been used as farmland. Some part of wetland may change into upland.
27. Decrease of tropical rain forests and wildlands				X	No tropical rain forests or wildlands.
28. Destruction or degradation of mangrove forests				X	No mangrove forests.
29. Degradation of coral reefs				X	No coral reefs.
30. Soil erosion		O			This includes soil conservation activities such as contour ridge. It may induce positive impact.

Categories of Environmental Impact	Evaluation A	B	C	D	Evaluation Basis
31. Soil salinization				X	Some wetland areas may be dried, but no salinization expected.
32. Deterioration of soil fertility		O			This includes soil reclamation activities such as applying compost and organic material to soil.
33. Soil contamination by agrochemicals and others			O		This recommends using natural pesticides and other methods to prevent pests, so the amount of usage of agrochemical is expected to decrease.
34. Devastation or desertification of land		O			Positive impact is expected by soil conservation and reclamation activities.
35. Devastation of hinterland			O		Positive impact is expected by the proper water management.
36. Ground subsidence				X	This does not include large scale groundwater development.
37. Change in surface water hydrology			X		Significant impact is not induced by small scale irrigation.
38. Change in ground water hydrology			X		Significant impact is not induced by small scale irrigation.
39. Inundation and flooding				X	Significant impact is not expected by small scale irrigation.
40. Sedimentation				X	Not expected.
41. Riverbed degradation				X	Not expected
42. Impediment of inland navigation				X	Not expected.
43. Water contamination and deterioration of water quality			X		Positive impact is expected by the proper water management and reduction of use of agrochemicals, while organic compounds applied in agricultural activities may induce water contamination.
44. Water eutrophication			X		Organic compounds applied in agricultural activities may induce water eutrophication.
45. Sea water intrusion				X	Not expected.
46. Change in temperature of water				X	Not expected.
47. Air pollution				X	Not expected.

Mtuwanjovu Verification Project in "The Study on The Capacity Building and Development for Smallholder Irrigation Schemes in the Republic of Malawi"

C.1.1 The nature of the project:

The verification project will include small-scale irrigation development, institutional development, rural development and agricultural development.

C.1.2 The activities that shall be undertaken:

1) Construction of small scale irrigation facilities: Stream Diversion, earth canal
2) Agricultural activities: Organic matter application, Application of natural pesticides
3) Soil conservation activities: Contour ridge, Vetiver grass plantation, contour hedge row
4) On-Farm examination
5) PCM&PRA workshop
6) Study tour
7) Monitoring of quantity of water

C.1.3 The possible products and by-products anticipated

Small scale irrigation facilities, Agricultural products, Farmers' Organization

C.1.4 The number of people the project shall employ

About 31 farmers in the site

C.1.5 The area of land, air or water that may be affected

Land and water within Mtuwanjovu site will be affected.

C.1.6 Any other matters as may be prescribed

C.1.6.1 A basic description of the project purpose, size, location and preliminary design, including any alternatives which are being considered

1) Goal: Poverty among rural population is alleviated through promoting broad agriculture development based on increased agriculture production and productivity.

2) Purpose: Food security for smallholder farmers is increased through promoting dry season's irrigated agriculture that fulfills the gap between the seasons.

3) Size, location and preliminary design: The project site is proposed in table below.

Site/ Topography	Village	EPA	RDP	ADD	No. of Farmers	Irrigation potential area, ha	Irrigation schemes
Mtuwanjovu/ Dambo (Upland)	Mwase	Mpenu	Lilongwe East	Lilongwe	31	1.0 ha existing 5.5 ha expansion	-Stream Diversion, L=4m -Earth canal

C.1.6.2 The stage of the project in the project cycle

The verification project includes all procedures in project cycle. (Project concept, Pre-feasibility, Feasibility, Design and engineering, Implementation, and Monitoring and evaluation)

C.1.6.3 A location map of the project site or site alternatives, and a site plan as it is currently known.

Attachment

C.1.6.4 A discussion of which aspects of the project are likely to cause environmental concerns, and of proposed environmental management measures.

The study team conducted the Initial Environmental Evaluation (IEE) to the effects on social and natural environment by the verification project with reference to guideline of JICA (Attachment). Since the scale of irrigation scheme proposed in this project is too small, it is expected to give little damage to environment. The study team, however, will continuously monitor some environmental concerns.

1) Irrigation system may induce water deficiency in areas in the downstream. Before construction of irrigation equipment, the survey of quantity of water and water-use situation of the downstream will be carried out. Monitoring of quantity of water will continue during the project.

2) Since this verification project will promote methods of organic cultivation and soil conservation, it is supposed to decrease contamination of soil and water induced by fertilizers and agro-chemicals, and to prevent soil degradation and erosion. However, organic compounds applied in agricultural activities may induce water contamination in the downstream. Monitoring of water quality will be carried out.

3) Irrigation schemes may create income gap between beneficiaries and non-beneficiaries in the community, and consequently it may induce some conflict. To mitigate this disparity between the beneficiaries and non-beneficiaries in the village, this Study proposes to set up a common field for local seed multiplication. As most farmers in Malawi faces seed shortage, this proposed common field could contribute to the village's overall agriculture improvement, diminishing the possibility of local conflict.

Department of Irrigation,
Ministry of Agriculture and Irrigation

Project Brief of Chikhasu Verification Project in "The Study on The Capacity Building and Development for Smallholder Irrigation Schemes in the Republic of Malawi"

C.1.1 The nature of the project:

The verification project will include small-scale irrigation development, institutional development, rural development and agricultural development.

C.1.2 The activities that shall be undertaken:

1) Construction of small scale irrigation facilities: Stream Diversion, earth canal
2) Agricultural activities: Organic matter application, Application of natural pesticides
3) Soil conservation activities: Contour ridge, Vetiver grass plantation, contour hedgerow
4) On-Farm examination
5) PCM&PRA workshop
6) Study tour
7) Monitoring of quantity of water

C.1.3 The possible products and by-products anticipated

Small scale irrigation facilities, Agricultural products, Farmers' Organization

C.1.4 The number of people the project shall employ

About 80 farmers in the site

C.1.5 The area of land, air or water that may be affected

Land and water within Chikhasu site will be affected.

C.1.6 Any other matters as may be prescribed

C.1.6.1 A basic description of the project purpose, size, location and preliminary design, including any alternatives which are being considered

1) Goal: Poverty among rural population is alleviated through promoting broad agriculture development based on increased agriculture production and productivity.

2) Purpose: Food security for smallholder farmers is increased through promoting dry season's irrigated agriculture that fulfills the gap between the seasons.

3) Size, location and preliminary design: The project site is proposed in table below.

Site/ Topography	village	EPA	RDP	ADD	No. of Farmers	Irrigation potential area	Irrigation schemes
Chikhasu/ Upland hill (Mountainous)	Kasumbu Kanjondo Lumwira II Kamadzi Mphale	Kanyama	Dedza Hills	Lilongwe	80	18 ha	-Stream Diversion (L=4m) -Earth canal

C.1.6.2 The stage of the project in the project cycle

The verification project includes all procedures in project cycle. (Project concept, Pre-feasibility, Feasibility, Design and engineering, Implementation, and Monitoring and evaluation)

C.1.6.3 A location map of the project site or site alternatives, and a site plan as it is currently known.

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1) Irrigation system may induce water deficiency in areas in the downstream. Before construction of irrigation equipment, the survey of quantity of water and water-use situation of the downstream will be carried out. Monitoring of quantity of water will continue during the project.

2) Since this verification project will promote methods of organic cultivation and soil conservation, it is supposed to decrease contamination of soil and water induced by fertilizers and agro-chemicals, and to prevent soil degradation and erosion. However, organic compounds applied in agricultural activities may induce water contamination in the downstream. Monitoring of water quality will be carried out.

3) Irrigation schemes may create income gap between beneficiaries and non-beneficiaries in the community, and consequently it may induce some conflict. To mitigate this disparity between the beneficiaries and non-beneficiaries in the village, this Study proposes to set up a common field for local seed multiplication. As most farmers in Malawi faces seed shortage, this proposed common field could contribute to the village's overall agriculture improvement, diminishing the possibility of local conflict.

Department of Irrigation,
Ministry of Agriculture and Irrigation

Project Brief of Msambaimfa Verification Project in "The Study on The Capacity Building and Development for Smallholder Irrigation Schemes in the Republic of Malawi"

C.1.1 The nature of the project:

The verification project will include small-scale irrigation development, institutional development, rural development and agricultural development.

C.1.2 The activities that shall be undertaken:

1) Construction of small scale irrigation facilities: Stream Diversion, earth canal
2) Agricultural activities: Organic matter application, Application of natural pesticides
3) Soil conservation activities: Contour ridge, Vetiver grass plantation, contour hedge row
4) On-Farm examination
5) PCM&PRA workshop
6) Study tour
7) Monitoring of quantity of water

C.1.3 The possible products and by-products anticipated

Small scale irrigation facilities, Agricultural products, Farmers' Organization

C.1.4 The number of people the project shall employ

About 64 farmers in the site

C.1.5 The area of land, air or water that may be affected

Land and water within Msambaimfa site will be affected. Since the small scale irrigation system is supported to change direction of water stream within the site and to take small amount of water, little affection will give down stream.

C.1.6 Any other matters as may be prescribed

C.1.6.1 A basic description of the project purpose, size, location and preliminary design, including any alternatives which are being considered

1) Goal: Poverty among rural population is alleviated through promoting broad agriculture development based on increased agriculture production and productivity.

2) Purpose: Food security for smallholder farmers is increased through promoting dry season's irrigated agriculture that fulfills the gap between the seasons.

3) Size, location and preliminary design: The project site is proposed in table below.

Site/ Topography	Village	EPA	RDP	ADD	No. of Farmers	Irrigation potential area	Irrigation schemes
Msambaimfa/ Dambo (Upland)	Mchela Chinguwo Sajeni Loleni	Kalira	Ntchisi	Kasungu	64	4.0 ha existing 16.0 ha expansion	-Stream diversion, L=27m -Earth canal

C.1.6.2 The stage of the project in the project cycle

The verification project includes all procedures in project cycle. (Project concept, Pre-feasibility, Feasibility, Design and engineering, Implementation, and Monitoring and evaluation)

C.1.6.3 A location map of the project site or site alternatives, and a site plan as it is currently known.

Attachment

C.1.6.4 A discussion of which aspects of the project are likely to cause environmental concerns, and of proposed environmental management measures.

The study team conducted the Initial Environmental Evaluation (IEE) to the effects on social and natural environment by the verification project with reference to guideline of JICA (Attachment). Since the scale of irrigation scheme proposed in this project is too small, it is expected to give little damage to environment. The study team, however, will continuously monitor some environmental concerns.

1) Irrigation system may induce water deficiency in areas in the downstream. Before construction of irrigation equipment, the survey of quantity of water and water-use situation of the downstream will be carried out. Monitoring of quantity of water will continue during the project.

2) Since this verification project will promote methods of organic cultivation and soil conservation, it is supposed to decrease contamination of soil and water induced by fertilizers and agro-chemicals, and to prevent soil degradation and erosion. However, organic compounds applied in agricultural activities may induce water contamination in the downstream. Monitoring of water quality will be carried out.

3) Irrigation schemes may create income gap between beneficiaries and non-beneficiaries in the community, and consequently it may induce some conflict. To mitigate this disparity between the beneficiaries and non-beneficiaries in the village, this Study proposes to set up a common field for local seed multiplication. As most farmers in Malawi faces seed shortage, this proposed common field could contribute to the village's overall agriculture improvement, diminishing the possibility of local conflict.

Department of Irrigation,
Ministry of Agriculture and Irrigation

Project Brief of Tikolore Verification Project in "The Study on The Capacity Building and Development for Smallholder Irrigation Schemes in the Republic of Malawi"

C.1.1 The nature of the project:

The verification project will include small-scale irrigation development, institutional development, rural development and agricultural development.

C.1.2 The activities that shall be undertaken:

1) Construction of small scale irrigation facilities: Stream Diversion, earth canal
2) Agricultural activities: Organic matter application, Application of natural pesticides
3) Soil conservation activities: Contour ridge, Vetiver grass plantation, contour hedge row
4) On-Farm examination
5) PCM&PRA workshop
6) Study tour
7) Monitoring of quantity of water

C.1.3 The possible products and by-products anticipated

Small scale irrigation facilities, Agricultural products, Farmers' Organization

C.1.4 The number of people the project shall employ

About 50 farmers in the sites

C.1.5 The area of land, air or water that may be affected

Land and water within Tikolore site will be affected.

C.1.6 Any other matters as may be prescribed

C.1.6.1 A basic description of the project purpose, size, location and preliminary design, including any alternatives which are being considered

1) Goal: Poverty among rural population is alleviated through promoting broad agriculture development based on increased agriculture production and productivity.

2) Purpose: Food security for smallholder farmers is increased through promoting dry season's irrigated agriculture that fulfills the gap between the seasons.

3) Size, location and preliminary design: The project site is proposed in table below.

Site/ Topography	Village	EPA	RDP	ADD	No. of Farmers	Irrigation potential area	Irrigation schemes
Tikolore/ Upland hill	Fandani	Mvera	Dowa	Kasungu	50	0.1 ha existing 10 ha expantion	-Stream Diversion, L=7m -Earth canal

C.1.6.2 The stage of the project in the project cycle

The verification project includes all procedures in project cycle. (Project concept, Pre-feasibility, Feasibility, Design and engineering, Implementation, and Monitoring and evaluation)

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