Ministry of Health
National Malaria Control Centre

Indoor Residual Spraying 2011 Needs Assessment Report

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Acknowledgement

Provincial Health Offices
District Health Management Teams
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Abbreviations/Acronyms

DC	District Commissioner
DHO	District Health Office
ECZ	Environmental Council of Zambia
EHT	Environmental Health Technician
HMIS	Health Management Information System
IEC	Information Education Communication
IRS	Indoor Residual Spraying
MFPP	Malaria Focal Point Person
NHC	Neighborhood Health Committee
NMCC	National Malaria Control Centre
PMI	Presidential Malaria Initiative
PPE	Personal Protective Equipment
WHO	World Health Organization

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1 Introduction

Malaria is endemic in Zambia with seasonal and geographic variations. Although there are clear signs of improvement, malaria continues to be the major cause of morbidity and mortality in Zambia. Control of the disease is one of the government's highest priorities. In 2009, 3.2 million cases of malaria were reported countrywide with about 4,000 deaths. The annual malaria incidence was estimated at 246 cases per 1,000 population in 2009, a drop from 252 cases per 1,000 population in 2008 (MOH HMIS 2008). Malaria accounts for over 40 percent of all health facility visits in Zambia, and the disease poses a severe social and economic burden on communities living in endemic areas.

The World Health Organization (WHO) has re-affirmed the importance of indoor residual spraying (IRS) as one of the primary interventions for reducing or interrupting malaria transmission in countries like Zambia. Starting in 2010, IRS has expanded to include from 36 to an additional 18 districts in the 2010 season, bringing the total number of districts to 54, corresponding to an estimated 1.2 million structures being covered. IRS is one of the core interventions implemented by the National Malaria Control Centre (NMCC) for malaria vector control. From its inception in 2000, the number of districts implementing IRS has increased from 15 to 54. There are indications that IRS will now be further expanded to an additional 18 districts in the 2011 season, bringing the total to 72. However, the Zambia Integrated Systems Strengthening Program (ZISSP) provides IRS support to only 35 districts.

To effectively plan for a successful IRS campaign, a needs assessment is carried out annually before the spray season commences in order to identify and address gaps: an analysis of the current situation is conducted and how to achieve the desired situation is determined. Through this, the necessary inputs for the IRS program can be determined. Insecticides, personal protective equipment (PPE), pumps, personnel, waste disposal facilities, and logistics are some of the key areas where data are required for planning of the IRS campaign.

ZISSP aims to strengthen the ability of the NMCC to plan, coordinate, scale-up, and oversee IRS and other malaria interventions. The project provides technical support to NMCC to ensure that the districts effectively plan, implement, and monitor the IRS program. In order to carry out IRS effectively, adequate planning is required. ZISSP therefore, has supported the 35 IRS district to conduct a needs assessment. The process provided an opportunity for NMCC to gather information which was used to quantify the IRS needs and requirements for each district.

To implement this activity, ZISSP identified eight teams that went to the 35 IRS districts and collected the information which was used to quantify the requirements for the 2011 IRS spray season. Each team spent a minimum of two weeks in the field to collect data. The data were scrutinized and validated by the NMCC before it was used to quantify the requirements for the 2011 IRS season.

2 Objective of the Needs Assessments

The purpose of the needs assessment was to carry out a systematic process to acquire information that provided guidance to the national malaria control program and the implementing districts in determining the requirements for implementation of a cost-effective and efficient IRS campaign.

Specific objectives included the following:

- To provide technical guidance to the IRS districts regarding the IRS scale up plan
- To conduct physical checks and assess the compliance of storage facilities to the Environmental Council of Zambia (ECZ) standards in the 35 project districts
- To conduct physical checks and assess the compliance of wash bays and soak pits to the ECZ standards in the 35 districts
- To ensure that the districts have planned adequately for PPEs and pumps in relation to scale up of activities
- To ensure that the districts are aware of standards set by ECZ to meet environmental compliance prior to starting of the spray season.

3 Methodology

For efficiency and effectiveness in conducting the needs assessment, ZISSP organized eight teams to be responsible for providing technical support to the districts during the planning for 2011 IRS season. The needs assessment team comprised a technical officer from NMCC or ZISSP, the Chief Environmental Officer from the province, and an experienced Public Health Officer from any district.

The process involved discussions with the District Commissioners (DCs), who are the political heads in the districts and district health officials (District Medical Officer, Planning Manager, Malaria Focal Person and IRS Manager). In order to standardize the collection of data in the field, an IRS Needs Assessment Checklist was used.

The following activities were carried out:

- Holding meetings with the district health management team and the DC to discuss district readiness for the programme
- Reviewing previous coverage and coming up with a realistic scale up plan
- Inspecting storage facilities, wash bays, soak pits and reaching consensus on strategies to undertake to ensure that all facilities meet the ECZ minimum standards

- Reviewing the district plans and ensuring that all IRS activities were included and resources set aside
- Assisting districts in strategizing how to identify potential and engage all stakeholders in IRS activities.

All the 35 Presidential Malaria Initiative (PMI) districts were found to have adequate enumerated structures and the information was used to accurately determine the number of structures to be sprayed.

4 Findings

4.1 Disease burden

According to the 2008 national Health Management Information System (HMIS) data, malaria is still the number one cause of mortality and morbidity in Zambia, although a positive trend in reduced morbidity and mortality has been observed over the past three years, from 2006 to 2009. The national malaria incidence rate was 412 per 1000 population in 2006, 358 in 2007, 252 in 2008 and 246 in 2009. Table 1 shows the malaria incidence per 1000 population in the 35 IRS districts in the period 2002 to 2009. The table shows a general downward trend.

Table 1: Malaria Incidence per 1,000 Population in 35 Districts, 2002-2009

	Year							
District	2002	2003	2004	2005	2006	2007	2008	2009
Mumbwa	408.5	567	408.3	392.3	340.5	123.7	85	19.2
Kapiri-Mposhi	408	406	368	307	378	303	240	196
Kabwe	435	480	439	513	566	463	292	102
Chililabombwe	223.4	292.6	244.5	240.1	247.6	276.1	123.5	27.7
Kalulushi	409.6	426.7	456.4	430.2	442.4	369.2	241.1	128.9
Luanshya	447.3	449.1	322.7	340.3	376.4	310.4	169.1	182.2
Mufulira	359.6	415.7	364	361	349	302.9	244.3	187.2
Ndola	484	482	471	455	434	381	329	281
Chingola	254.1	232.6	223.5	250.3	213.7	178.2	83.1	104

District	Year							
	2002	2003	2004	2005	2006	2007	2008	2009
Kitwe	405.0	412.3	458.9	371	394	303	248.7	103
Lufwanyama	447.8	448.7	363.5	408	524	378	177	181
Masaiti	449.3	510.3	454.9	427.8	459.5	420	267.9	212.7
Mpongwe	566	554	724	470	672	535	325	156
Chipata	447	483	487	463	437	398	336	278
Katete	505	563	515	524	547	543	498	-
Petauke	117	161	146	164	541	531	371	132
Nchelenge	332.2	319	263	326	379	329	287.8	
Kawambwa	369	399	365	386	528	405	211	306
Mansa	456.4	481.2	520.2	516.5	507	379.5	348.8	311.5
Chongwe	456	496	585	490	551	359	185	174
Kafue	334	412	443	303	318	308	255	127
Lusaka	267	301	199	202	169	109	178	104
Chilubi								
Kasama			353.2	385.0	435.1	428.38		
Mbala	311.2	331.2	313.1	341.6	339.8	378.9	194.8	59.4
Mpika	312.6	331.4	319.2	334.2	328.4	383.1	236.7	198.3
Kasempa	-	-	20.9	12.4	16.1	10.9	-	-
Solwezi	-	-	-	-	-	-	-	-
Choma	426	632.9	442	413.3	465.7	361	142.1	60.48
Kazungula	385	430	251	365	348	150	09	10
Livingstone	346	372.7	343.2	318.6		297.7	35.5	
Mazabuka	368.4	588.6	379.7	323.7	421.9	282.8	123	07
Monze		530.9	388.8	320.1	406.2	307.5	26.8	
Kaoma	472	546	461.4	435.1	491.0	384.0	208.0	148.0
Senanga	384	418	291	312	327	226	371	175
Mongu	573	584	483	521	585	538	495	248

Note: Dash or blank cell shows data not available

4.2 Structures sprayed in 2010 and targets for 2011 in the 35 IRS districts

Most of the districts proposed to increase the number of structures to be sprayed in 2011. In total, the target for all the 35 PMI districts in 2011 was increased by 27 percent over 2010's coverage. In all the districts, scale up was done in the areas with very high incidence rates, referred to as "hot spots". Table 2 shows the number of targeted structures per district and the number of spraying days proposed.

Table 2: Number of Structures Sprayed in 2010 and Targeted in 2011

No	District	Estimated population	# of structures sprayed last season			# of structures targeted this season			# of days for spraying
			Formal	Informal	Total	Formal	Informal	Total	
1	Chipata	467,484	10,732	34,450	45,182	13,000	47,000	60,000	65
2	Katete	261,629	2,643	36,693	39,336	3,000	42,000	45,000	65
3	Petauke	344,529	9,000	36,000	45,000	10,000	40,000	50,000	70
4	Chililabombwe	98,291	7,901	5,404	13,305	7,901	5,404	13,305	38
5	Chingola	238,241	24,877	15,556	40,433	24,877	15,556	40,433	60
6	Kalulushi	91,490	9,021	5,303	14,324	9,400	8,200	17,600	40
7	Kitwe	501,026	57,375	7,008	64,383	73,000	10,000	83,000	50
8	Luanshya	192,208	17,019	6,360	23,379	18,652	6,848	25,500	55
9	Lufwanyama	85,123	1,492	9,118	10,610	1,600	10,400	12,000	40
10	Masaiti	132,001	319	14,498	14,817	4,217	17,783	22,000	45
11	Mpongwe	-	-	31,500	31,500	3,800	41,100	44,900	60
12	Mufulira	203,948	21,146	10,982	32,128	22,409	12,283	34,692	40
13	Ndola	514,273	24,156	23,128	47,284	73,000	10,000	83,000	60
14	Kafue	301,908	12,414	17,049	29,463	19,000	21,000	40,000	60
15	Chongwe	226 088	5,336	31,647	36,983	6,000	39,000	45,000	60
16	Kapiri Mposhi	269,635	3,607	14,140	17,747	4,500	15,500	20,000	50
17	Kabwe	223,150	21,112	17,319	38,431	24,568	19,432	44,000	50
18	Mumbwa	229,648	1,960	21,366	23,326	3,000	27,000	30,000	60
19	Kawambwa	135,943	896	12,109	13,005	3,000	15,000	19,000	40
20	Mansa	254,765	7,899	16,669	24,568	9,000	21,000	30,000	47
21	Nchelenge	170,147	3,185	19,887	23,072	4,000	26,000	30,000	45

No	District	Estimated population	# of structures sprayed last season			# of structures targeted this season			# of days for spraying
			Formal	Informal	Total	Formal	Informal	Total	
22	Chilubi	95,931	368	15,104	15,472	No data	No data	17,000	35
23	Kasama	235,348	7,421	14,509	21,930	14,000	16,000	30,000	50
24	Mbala	227,407	3,147	12,609	15,756	3,500	16,500	20,000	40
25	Mpika	178,338	3,909	6,043	9,952	8,000	12,000	20,000	42
26	Kasempa	51,350	1,112	8,296	9,408	1,500	10,500	12,000	40
27	Solwezi	266,000	-	-	22,791	-	-	26,000	60
28	Livingstone	133,980	17,387	7,213	24,600	17,387	7,213	24,600	45
29	Kazungula	94,494	6,935	10,316	17,251	7,000	18,000	25,000	60
30	Choma	259,529	21,122	11,479	32,601	22,000	13,000	35,000	45
31	Monze	234,235	3,689	11,453	15,142	5,000	15,000	20,000	40
32	Mazabuka	288,837	16,208	30,226	46,434	20,000	42,000	62,000	70
33	Mongu	194,588	14,752	9,702	24,454	11,297	21,703	33,000	60
34	Kaoma	217,652	7,316	14,848	22,164	10,200	26,000	36,200	52
35	Senanga	140,862	440	10,676	11,116	880	14,120	15,000	60
	Total	**7,333,990**	**345,896**	**548,660**	**917,347**	**458,688**	**662,542**	**1,165,230**	

Note: Dash or blank cell shows data not available

4.3 Spray operators and supervisors

Though there was scale up in the number of structures to be sprayed, districts were encouraged not to over prolong the number of days or drastically increase number of spray operators that will be required to meet the targets. However, gender balance was emphasized and districts were encouraged to ensure that at least 30% of the spray teams are female. Table 3 lists the numbers of spray operators and supervisors proposed for each district by gender.

Table 3: Proposed Numbers of Spray Operators and Supervisors

No	District	Spray Operators			Supervisors		
		Males	Females	Total	Males	Females	Total
1	Chipata	50	30	80	9	3	12
2	Katete	30	20	50	4	3	7
3	Petauke	30	20	50	6	3	9
4	Chililabombwe	15	20	35	5	0	5
5	Chingola	35	25	60	3	2	5
6	Kalulushi	35	20	55	5	4	9
7	Kitwe	65	55	120	6	6	12
8	Luanshya	15	25	40	2	2	4
9	Lufwanyama	25	15	40	5	1	6
10	Masaiti	25	10	35	3	1	4
11	Mpongwe	30	20	50	6	2	8
12	Mufulira	30	15	45	3	2	5
13	Ndola	72	48	120	7	5	12
14	Kafue	40	30	70	5	5	10
15	Chongwe	25	25	50	4	4	8
16	Kapiri-Mposhi	20	15	35	4	1	5
17	Kabwe	25	45	70	4	4	8
18	Mumbwa	14	11	25	3	2	5
19	Kawambwa	35	15	50	8	2	10
20	Mansa	34	11	45	4	3	7
21	Nchelenge	25	25	50	5	0	5
22	Chilubi	30	10	40	3	1	4
23	Kasama	40	20	60	7	3	10
24	Mbala	30	20	50	6	4	10
25	Mpika	30	15	45	7	3	10
26	Kasempa	20	10	30	5	0	5
27	Solwezi	40	20	60	9	1	10

No	District	Spray Operators			Supervisors		
		Males	Females	Total	Males	Females	Total
28	Livingstone	40	10	50	4	6	10
29	Kazungula	30	15	45	6	3	9
30	Choma	50	15	65	3	2	5
31	Monze	25	15	40	4	2	6
32	Mazabuka	40	25	65	6	4	10
33	Mongu	44	15	55	5	4	9
34	Kaoma	42	18	60	6	4	10
35	Senanga	25	20	45	8	0	8
	Total	**1,161**	**728**	**1,885**	**180**	**92**	**272**

4.4 Insecticides used in 2010 and required for 2011

Four types of insecticides were used in all the 35 districts during the 2010 spray season. These are dicloro diphenyl trichloroethane (DDT), alpha cypermethrin (fendona), lambda cyhalothrin (icon) and deltamethrin WG. Of the 14 districts that have been using DDT, Ndola did not use it in 2010 because of resistance to DDT in the district. Annex 1 shows the insecticide usage in 2010. Total requirements for the 35 PMI districts in 2011 will be as follows: Total DDT required will be 22,900 sachets while that of lambda cyhalothrin will be 22,900 sachets. The number of alpha cypermethrin sachets required for 2011 was estimated at 272,722 while that of deltamethrin WG was estaimted at 58,800 sachets. These estimates were made while entomological studies were being conducted in the various parts of the country. As such, findings arising from these studies may ultimately influence which insecticides may be replaced in the table 4 below.

Table 4: Insecticide Requirements for 2011 Spray Season

No	District	Used Insecticides (sachets) needed for 2011				Proposed Insecticides in 2011	
		DDT	Alpha cypermethrin	Lambda cyhalothrin	Deltamethrin WG	Organophosphates (litres)	Pyrethroids (sachets)
1	Chipata	0	15,000	0	0	15,000	0
2	Katete	0	15,000	0	0	15,000	0
3	Petauke	0	13,000	0	0	13,000	0
4	Chililabombwe	600	4,000	0	0	4,600	0
5	Chingola	0	4,000	0	4,800	12,800	0
6	Kalulushi	0	5,000	5,000	0	10,000	0
7	Kitwe	1,000	18,000	0	0	19,000	0
8	Luanshya	1,000	11,000	0	0	12,000	0
9	Lufwanyama	0	1,600	500	0	2,100	0
10	Masaiti	0	7,000	1,000	0	8,000	0
11	Mpongwe	0	2,000	0	0	2,000	0
12	Mufulira	2,700	3,600	0	0	6,300	0
13	Ndola	0	58,487	0	0	58,123	0
14	Kafue	5,000	0	5,000	10,000	0	20,000
15	Chongwe	6,000	4,000	0	4,500	14,500	0
16	Kapiri-Mposhi	0	5,500	0	0	0	5,500
17	Kabwe	0	2,000	4,000	6,000	0	12,000
18	Mumbwa	0	4,000	0	200	0	4,200
19	Kawambwa	0	6,735	0	0	6,735	0
20	Mansa	0	8,000	0	800	8,800	0
21	Nchelenge	0	2,000	0	10,000	12,000	0
22	Chilubi	0	6,000	6,000	0	12,000	0
23	Kasama	0	16,000	0	0	16,000	0
24	Mbala	0	5,500	0	0	5,500	0
25	Mpika	0	6,000	0	0	6,000	0
26	Kasempa	0	3,000	1,000	1,200	0	5,200

No	District	Used Insecticides (sachets) needed for 2011				Proposed Insecticides in 2011	
		DDT	Alpha cypermethrin	Lambda cyhalothrin	Deltamethrin WG	Organophosphates (litres)	Pyrethroids (sachets)
27	Solwezi	0	8,000	0	10,000	18,000	0
28	Livingstone	0	0	4,500	2,500	0	7,000
29	Kazungula	2,500	1,500	0	600	0	4,600
30	Choma	0	6,700	0	5,700	0	12,400
31	Monze	500	3,000	0	2,000	0	5,500
32	Mazabuka	3,600	2,800	3,000	500	0	6,300
33	Mongu	0	14,500	0	0	0	14,500
34	Kaoma	0	6,600	0	0	0	6,600
35	Senanga	0	3,200	800	0	0	4,000
	Total	**22,900**	272,722	**22,900**	**58,800**	**277,458**	**107,800**
	10% contingency added	**25,190**	**299,994**	**25,190**	**64,680**	**305,204**	**118,580**

4.5 Personal Protective Equipment (PPE)

Estimates of PPE were based on the number of spray operators that are hired for spray operations. These estimates took into consideration the amount of PPEs which were available in the districts at the time the assessments were being conducted. All stakeholders reached consensus on the number of PPEs to retain.

During the assessments, it was noted that most districts did not receive plastic sheets for covering household goods in the 2010 spray season. The plastic sheets have therefore been included in sufficient quantities to ensure that household goods are not contaminated with insecticides.

Table 5 shows the number PPE and Hudson spray pumps for 2011.

Table 5: Number of PPEs Required for the 2011 Spray Season

No	District	Helmets (with face shields)	Overalls	Face Masks	Gumboots	Gloves (PVC)	Towels	Face Towels	Plastic Sheet	Mutton Cloth	Socks
1	Chipata	108	200	5980	98	200	98	98	10	98	200
2	Katete	66	50	3705	0	150	150	150	10	42	130
3	Petauke	95	20	4130	45	120	60	60	12	100	120
4	Chililabombwe	50	40	1520	40	40	40	40	4	25	40
5	Chingola	77	120	3900	60	60	65	65	2	65	65
6	Kalulushi	76	60	2560	60	120	60	60	10	60	60
7	Kitwe	149	120	6600	40	240	140	140	4	130	140
8	Luanshya	55	40	2420	10	100	45	45	2	90	45
9	Lufwanyama	58	17	1840	14	19	50	50	2	20	50
10	Masaiti	87	45	1755	45	45	45	45	5	25	45
11	Mpongwe	124	108	3480	60	70	50	70	4	60	100
12	Mufulira	66	90	2000	45	90	50	50	3	129	90
13	Ndola	151	120	7920	100	120	132	132	12	120	132
14	Kafue	94	160	4800	90	160	90	90	10	90	160
15	Chongwe	69	53	3480	50	20	50	50	3	0	0
16	Kapiri-Mposhi	50	10	2000	15	70	45	45	4	15	90
17	Kabwe	91	60	3900	40	125	70	70	2	140	140
18	Mumbwa	50	10	1800	20	70	30	30	5	40	40
19	Kawambwa	68	35	2400	15	70	60	60	8	70	120
20	Mansa	63	26	2444	14	27	52	52	9	52	104
21	Nchelenge	63	10	2475	17	180	60	60	8	0	114
22	Chilubi	53	100	1540	90	90	45	90	4	17	100
23	Kasama	83	126	3500	117	216	75	75	3	30	150
24	Mbala	66	100	2400	94	310	62	62	5	62	124
25	Mpika	66	120	2310	120	225	60	60	5	120	120
26	Kasempa	39	35	1400	0	40	80	40	4	40	40
27	Solwezi	83	140	4200	0	180	70	140	4	140	70

No	District	Helmets (with face shields)	Overalls	Face Masks	Gumboots	Gloves (PVC)	Towels	Face Towels	Plastic Sheet	Mutton Cloth	Socks
28	Livingstone	66	120	2700	60	180	60	50	8	120	100
29	Kazungula	59	100	3240	54	162	54	45	10	108	108
30	Choma	83	150	3150	75	225	75	65	10	150	130
31	Monze	51	92	1840	46	140	46	40	8	80	80
32	Mazabuka	83	150	5250	75	225	75	65	10	150	130
33	Mongu	72	10	3840	20	60	60	60	10	120	60
34	Kaoma	88	140	3640	80	140	80	80	6	120	140
35	Senanga	66	60	3180	45	120	60	60	20	120	60
	Total	**2,662**	**2,837**	**113,299**	**1,754**	**4,409**	**2,344**	**2,394**	**236**	**2,748**	**3,397**
	10% contingency	**2,928**	**3,121**	**124,629**	**1,929**	**4,850**	**2,578**	**2,633**	**260**	**3,023**	**3,737**

4.6 Hudson-Xpert spray pumps required and their spare parts

In the 2010 spray season, there were challenges regarding the spray pumps. The pumps that were procured for some districts were not the ones recommended for the IRS program. As such, some districts ended up using the wrong type of pumps (micron) even though the 2010 trainings were conducted using Hudson X-pert pumps. The procured pumps used but not recommended were micron pumps. In order to ensure that quality standards are maintained, the needs assessments are solely based on Hudson X-pert pumps for all the districts. Table 6 indicates the number of spray pumps required for each district.

Table 6: Hudson X-Pert Pumps for 2011

No	District	Total in stock	# Functional	Total # required	# Out of order	
					Serviceable	Not serviceable
1	Chipata	65	58	**30**	3	4
2	Katete	78	30	**20**	28	20
3	Petauke	50	31	**18**	3	3
4	Chililabombwe	25	15	**40**	0	10
5	Chingola	31	21	**70**	10	0
6	Kalulushi	68	46	**60**	12	10
7	Kitwe	97	84	**110**	7	6
8	Luanshya	45	40	**5**	5	0
9	Lufwanyama	69	0	**0**	0	0
10	Masaiti	35	30	**5**	0	5
11	Mpongwe	45	25	**50**	7	13
12	Mufulira	56	35	**10**	5	16
13	Ndola	124	101	**120**	7	16
14	Kafue	60	50	**30**	4	6
15	Chongwe	0	0	**50**	0	0
16	Kapiri-Mposhi	47	32	**35**	0	15
17	Kabwe	64	43	**15**	8	13
18	Mumbwa	30	22	**5**	22	0
19	Kawambwa	52	49	**6**	0	3
20	Mansa	45	40	**10**	0	5
21	Nchelenge	43	35	**20**	8	0
22	Chilubi	39	32	**12**	7	0
23	Kasama	52	35	**8**	35	0
24	Mbala	36	30	**25**	2	4
25	Mpika	23	23	**27**	0	0
26	Kasempa	28	26	**40**	26	0
27	Solwezi	40	38	**60**	2	0
28	Livingstone	65	30	**55**	35	0
29	Kazungula	47	41	**50**	6	0
30	Choma	42	36	**46**	4	2

No	District	Total in stock	# Functional	Total # required	# Out of order	
					Serviceable	Not serviceable
31	Monze	38	30	**45**	4	4
32	Mazabuka	54	41	**68**	4	9
33	Mongu	64	43	**21**	0	0
34	Kaoma	96	44	**20**	11	0
35	Senanga	30	29	**20**	0	1
	Total	**1783**	**1265**	**1206**	**265**	**165**
	10% contingency added	**1,961**	**1,392**	**1,327**	**292**	**182**

Estimates of spare parts required for spray pumps are based on the turnover rate of particular spare parts. A number of pumps that were said to be non-functional simply required the correct spare parts for them to function properly. Failure by districts to comply with the guidelines to dismantle the pump, replace all worn out parts and provide the required estimates for replacement parts at the end of each spray season makes quantification difficult. In 2011, specific spare parts as outlined in the table below should be procured in addition to two repair kits per district in the 35 districts.

Table 7: Total Number of Spray Pumps Required

Item	Number Required	Part Number
Complete cover assembly	*10*	***140-205***
Plunger assembly, complete for 3 & 4 gallon unit	*20*	***147-538***
Supply tube adapter for ADmodel-10	*10*	***115-965***
Shut off valve body	*60*	***153-377***
Shut off valve body cap	*50*	***115_733***
Valve body cap with o-ring	*50*	***149-702***
Shut off assembly, complete thrustless	*20*	***149-706***
Strainer housing assembly	*60*	***146-627***
Strainer	*200*	***152-356***
Strainer assembly complete	*60*	***146-617***
Shoulder strap 2" wide	*20*	***152-829***
Shoulder strap	*30*	***152-615***
Spare tank only, less cover, 3 gallons	*4*	***142-612***
Pump cylinder assembly complete for 3 & 4 gallon unit	*40*	***147-202***
Hose only	*30*	***115-902***
Supply tube adapter with wing fitting	*60*	***115-968***
Male fitting for strainer housing	*40*	***114-905***
Lances	*200*	***141-967***
Extension tube assemble	*12*	***141-967***
Pressure gauge	*100*	
Extension tube & nozzle assembly	*60*	***141-966***
Nozzle assembly complete	*192*	***141-989***
Nozzles (8001)	*400*	

Item	Number Required	Part Number
Nozzles (8002)	*400*	
Nozzle body	*90*	***114-791***
Nozzle body cap	*190*	***115-680***
Lids	*30*	
Lid gaskets	*50*	
O-rings	*50*	
Plug for gauge adapter	*20*	***114-152***
Hardened stainless nozzle tip	*100*	***153-400E***
Leather caps	*10*	
Name unknown	*20*	***805-337***
Name unknown	*20*	***123-950***
Repair kits	*70*	

4.7 Storage facilities

The storage facilities in the districts were limited; the majority did not meet regulatory requirements. The storage facilities in most urban districts had adequate space while those in rural districts did not. Despite a number of districts having made efforts to secure storage facilities, the facilities lacked basic requirements to meet the minimum ECZ standards. Three districts, Ndola, Kitwe and Mazabuka, had their storage facilities refurbished using PMI funds. These facilities represent a very good example of how a storage space should look like. The central level has urged districts to put more effort towards ensuring that storage spaces/facilities are upgraded to minimum required standards. Most facilities were found to not be licensed by ECZ.

4.8 Disposal of chemical waste

Following established procedures is the best guarantee of mitigating the environmental impacts of IRS to the extent possible. It is therefore important to ensure that DDT and other insecticides are handled in a professional and secure manner as required by both national and international regulations. At the time the assessments were being conducted, it was found that all empty DDT sachets and all other DDT waste had been collected from all DDT districts. The DDT waste was transported to the central location in Lusaka in readiness for transportation to South Africa. The pyrethroids wastes were awaiting the guidance from the ECZ on which site will be used for incineration. Selected districts have suitable incinerators that can treat pyrethroid waste.

A triple rinsing method is emphasized in all the districts. During monitoring and supervision visits, monitoring teams discovered that some districts were not strictly following the triple rinsing method due to insufficient barrels to store enough water. Sufficient barrels have been ordered to ensure that IRS guidelines are strictly adhered

to. The evaporation tanks and soak pits which have been constructed in the districts will need to be roofed to avoid flooding. Soak pits in some districts need to be expanded in size to accommodate the anticipated internal scale up. Recommendations have been given to individual districts.

4.9 Facilities for spray operators

Low cost bathing facilities in Katete

Facilities for the spray operators need attention in most districts. The toilet and bathing facilities are inadequate to handle the expected scale up that will allow the district to cover at least 20 percent more structures. Some districts have managed to put up low cost but effective bathing facilities for spray operators. The facilities have been constructed using concrete floor and covered with iron sheets. Water connections to showers have been set up. A good example is Katete, Lundazi, and Chadiza.

4.10 Human resources

All districts in Zambia have Environmental Health Technicians (EHTs) stationed at the District Health Office (DHO) and health centres. The EHTs are used as supervisors and district trainers for IRS. Overall, the number of EHTs in health centres is adequate. Districts visited have Malaria Focal Point Persons (MFPP) who oversees malaria activities and community sensitisation. Districts have capacity in planning, implementation, monitoring and evaluation. At the provincial level, Chief Environmental Health Officers conduct monitoring and supervision activities in their respective provinces.

4.11 Training needs

Training of health workers in IRS is a routine activity that takes place prior to the beginning of the spray season. The training of trainers is important to build capacity in the districts and also increase the pool of supervisors and trainers of spray operators. Cascade trainings are also conducted every year because new spray operators are used every year. Other trainings such as those related to entomology and enumerations are also conducted for specific districts as need arises. However, as the number of districts conducting IRS increases, need arises to introduce specific trainings that will address

Staff trained in storekeeping, emergency management and poison handling

specific issues related to emergency handling and poison management of insecticides. The current status is that 57 staff were reported to have been trained in the 35 PMI districts. Of the 57 staff trained, 60 percent were trained as storekeepers while 23 percent had training in poison management, and the remaining were trained in emergency handling of insecticides. This is illustrated in the pie chart above.

There is urgent need to train more people in poison management and emergency handling of IRS insecticides. This is especially important if there will there is a policy shift to use organophosphates as alternative insecticides to pyrethroids and DDT.

4.12 Monitoring and supervision

IRS is coordinated through the NMCC and operationally administered through the DHOs. At the district level, it is important that the spray operators understand well the social and technical aspects of IRS. Supervision is therefore critical to ensure that the spray operators adhere to the guidelines of IRS during implementation because success of it depends on the application of correct technical measures.

Monitoring and supervision should be fully supported at national, provincial and district levels. Environmental health experts at the provincial level are critical to the programme. They are therefore expected to actively lead monitoring and supervision activities in their respective provinces to ensure that the district teams adhere to the IRS guidelines at all times. The district has capacity to supervise IRS because capacity has been built among the staff at this level. Staff critical to IRS monitoring and evaluation include Administrative Officers, Environmental Health Officers, Planning Officers, and District Medical Officers. DHOs in the 35 PMI districts demonstrated ownership of the IRS program by ensuring that training in information management, supervisory skills tailored for IRS, of spray operators and in stores management orientation (store man) took place during the 2010 spray season.

4.13 BCC and community participation

The assessment revealed that Neighborhood Health Committees (NHCs) played an important role in community sensitization. However, there is absence of an IEC focal person at district level which weakens the information dissemination in the community. The assessment also found that to improve information dissemination there is need for a strengthened public address system, meetings with stakeholders, use of posters and leaflets, local radio stations, churches and schools. Currently, the majority of the districts do not have updated printed IEC materials to give out to the community. The central level should make these available preferably before the start of the training of trainers.

5 Recommendations

1. District health teams should create a strong partnership which involves line ministries in the planning of the IRS campaigns. Light trucks should be procured by the DHOs to alleviate transport problems.
2. There is need to improve supervision of the IRS program during implementation by identifying a pool of dedicated supervisors.
3. There is need to train staff in poison management and emergency handling to be able to provide technical assistance when accidents related to chemicals take place.
4. The districts should ensure that IRS managers attend the training of trainers training with new officers who have not been trained before. This will build capacity of the EHTs to train spray operators and supervise the implementation of IRS.
5. There is need for continued investment in the improvement and expansion of the storage facilities at district, provincial and national levels.
6. DHOs should ensure that appropriate licensing is obtained for storage of insecticides from the ECZ.
7. All districts should ensure that they request sufficient plastic sheets to adequately covering household goods when spraying.

Annex 1: Status of Storage Facilities

No.	District	Security Status of Storage Facilities													
		Security guard	Burglar bars	Double locks	Electrical fence	Wire Fence	Wall fence	Hazard signs	Fire Extinguisher	Bucket of sand	Ventilation	Natural Lighting	Artificial Lighting	Thermometers	Fire detectors
1	Chipata	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	No
2	Katete	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
3	Petauke	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes	Yes	No	No	No
4	Kapiri Mposhi	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	No	No	No
5	Kabwe	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
6	Chililabombwe	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
7	Chingola	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
8	Kalulushi	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
9	Kitwe	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
10	Luanshya	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
11	Lufwanyama	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
12	Masaiti	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	Mpongwe	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
14	Mufulira	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
15	Ndola	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
16	Kawambwa	No	No	No	No	No	No	Yes	Yes	No	Yes	Yes	No	No	No
17	Mansa	Yes	Yes	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
18	Nchelenge	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
19	Kafue	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	No
20	Chongwe	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No
21	Chilubi	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
22	Kasama	Yes	Yes	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	No	No
23	Mbala	Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No
24	Mpika	Yes	Yes	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No
25	Kasempa	Yes	Yes	Yes	No	No	No		Yes	No	Yes	Yes	Yes	No	No
26	Solwezi	Yes	Yes	Yes	No	Yes	Yes		No	No	Yes	Yes	No	No	No
27	Livingstone	Yes	Yes	No	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No
28	Kazungula	No	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	No	No

No.	District	Security Status of Storage Facilities													
		Security guard	Burglar bars	Double locks	Electrical fence	Wire Fence	Wall fence	Hazard signs	Fire Extinguisher	Bucket of sand	Ventilation	Natural Lighting	Artificial Lighting	Thermometers	Fire detectors
29	Choma	Yes	Yes	No	No	no	yes	No	No	No	Yes	Yes	Yes	No	No
30	Monze	No	Yes	Yes	No	Yes	no	Yes	yes	yes	Yes	Yes	No	No	No
31	Mazabuka	Yes	Yes	No	No	Yes	yes	Yes	No	yes	Yes	Yes	Yes	No	No
32	Mongu	Yes	Yes		No	Yes	yes	Yes	Yes		Yes	Yes	Yes		No
33	Kaoma	Yes	Yes	No	No	Yes	yes	Yes	Yes		Yes	Yes	Yes		No
34	Senanga	Yes	Yes		No	Yes	yes	Yes	Yes		Yes	Yes	Yes		No
35	Mumbwa	Yes	Yes		No	Yes	yes	Yes	Yes		Yes	Yes	Yes		No

Annex 2: Status of Insecticides in the Districts

No	District	Deltamethrine (K-Othrine)				Alpha cypermethrin (Fendona)				Lambda cyhalothrin (Icon)				DDT			
		Balance brought forward	Qty Received	Qty Used	In Stock	Balance brought forward	Qty Received	Qty Used	In Stock	Balance brought forward	Qty Received	Qty Used	In Stock	Balance brought forward	Qty Received	Qty Used	In Stock
1	Chipata	1811	2600	1663	0	0	12785	9666	134	0	0	0	0	0	0	0	0
2	Katete	0	3000	3000	52		10200	12842									
3	Petauke	1700	6148	6848	1000	0	4045	4039	6	460	0	279	0	0	0	0	0
4	Kapiri-Mposhi	386					6000	5930	70								
5	Kabwe	0	4191	4191	0	0	14,000	13,600	400	0	0	0	0	0	3674	1843	1831
6	Chililabombwe	0					600	560	Nil								
7	Chingola						4,000	4,000	0						1080	1080	0
8	Kalulushi	5,200	0	5,200										0	2120	968	0
9	Kitwe					0	20,000	13,632	0					0	800	531	0
10	Luanshya					0	10,000	10,000						0	1300	1300	
11	Lufwanyama					200	1,600	1,716	0								
12	Masaiti					0	6,000	6,000	0								
13	Mpongwe	0	6000	5900		0	2,800	1,800	0								
14	Mufulira					1,346	3,000	3,474	0					0	2800	2608	0
15	Ndola	2,749	0	2749	0	0	30,499	30,499	0	0	300	300	0				
16	Kawambwa	1169	0	1169	0	0	1,600	4,916	0	0	0	N/A	N/A	0	0	N/A	0
17	Mansa	4,200	0	4,100	100 (Exp: Mar 11)	0	1,600	1,600	0	0	0	N/A	N/A	0	0	N/A	0
18	Nchelenge	1,504	4,200	5,704	0	0	3,260	3,260	0	130	0	0	0	0	0	N/A	0
19	Kafue	8818	4000	3941	59	2182	1000	3078	104					755	3244	3865	134

No	District	Deltamethrine (K-Othrine)				Alpha cypermethrin (Fendona)				Lambda cyhalothrin (Icon)				DDT			
		Balance brought forward	Qty Received	Qty Used	In Stock	Balance brought forward	Qty Received	Qty Used	In Stock	Balance brought forward	Qty Received	Qty Used	In Stock	Balance brought forward	Qty Received	Qty Used	In Stock
20	Chongwe	2188	4100	4100	0	0	3347	3203	144					1007	5363	5359	4
21	Chilubi	0	0	N/A	0	0	4,000	4,000	0	0	0	N/A	0	0	0	N/A	0
22	Kasama	274	-	274	-	-	14,000	14,000	-	-	-	-	-	-	-	-	-
23	Mbala	-	-	-	-	-	6,000	3,847	1,353	-	-	-	-	-	-	-	-
24	Mpika	-	-	-	-	-	10,000	9,852	148	-	-	-	-	-	-	-	-
25	Kasempa	0	0	0	0		1000	234	0	given to Solwezi DHMT	0	0	0	0	0	0	0
26	Solwezi						7900	7929	0	0	0	0	0	0	0	0	0
27	Livingstone						6000	6000									
28	Kazungula	3223	300	1629	0	1650	0	1645	5					0	1720	1720	0
29	Choma		5552	5552		0	6520	6520									
30	Monze						4400	3800									
31	Mazabuka																
32	Mongu	0	0	0	0	0	8720	8718	2								
33	Kaoma	0	0	0	0	0	6400	4116	656								
34	Senanga	0	0	0	0	0	3200	3018	182								
35	Mumbwa	0	0	0	0	0	4000	3995	5								

Annex 3: Training in Stores and Poison Management

No	District	Trained in store keeping		Trained in emergency handling		Trained in poison management	
		Males	Females	Males	Females	Males	Females
1	Chipata	1	0	0	0	0	0
2	Katete	0	1	0	0	0	0
3	Petauke	1	0	0	0	0	0
4	Kapiri-Mposhi	1	0	0	0	0	0
5	Chililabombwe	0	1	1	1	1	0
6	Chingola	1	0	0	0	0	0
7	Kalulushi	0	0	0	0	0	0
8	Kitwe	0	1	0	0	0	0
9	Luanshya	1	0	1	0	0	0
10	Lufwanyama	1	0	0	0	0	0
11	Masaiti	1	0	1	0	4	0
12	Mpongwe	0	0	1	0	1	0
13	Mufulira	1	0	0	0	0	0
14	Ndola	1	0	0	0	2	3
15	Kawambwa	0	1	0	1	0	0
16	Mansa	1	0	1	0	0	0
17	Nchelenge	1	0	0	0	0	0
18	Kafue	1	1	0	1	0	1
19	Chongwe	2	0	2	0	0	1
20	Chilubi	1	0	0	0	0	0
21	Kasama	1	0	0	0	0	0
22	Mbala	1	0	0	0	0	0
23	Mpika	1	0	0	0	0	0
24	Kasempa	1	0	0	0	0	0
25	Solwezi	1	0	0	0	0	0
26	Livingstone	1	0	0	0	0	0
27	Kazungula	1	0	0	0	0	0
28	Choma	1	0	0	0	0	0
29	Monze	1	0	0	0	0	0
30	Mazabuka	1	0	0	0	0	0
31	Mongu	1	0	-	0	0	0
32	Kaoma	1	0	-	0	0	0
33	Senanga	1		-	0	0	0
34	Mumbwa		1	-	0	0	0
35	Kabwe	No data	No data	No data	No data	No data	No data

Annex 4: Availability of Behaviour Change Communication Materials

No	District	Fliers	Brochures	Posters	Stickers	DVDs	CDs	IRS Communication Strategy	District has a community radio station
1	Chipata	No	No	No	No	No	No	No	Yes
2	Katete	No	No	No	No	No	No	No	Yes
3	Petauke	No	No	No	No	No	No	No	Yes
4	Kapiri-Mposhi	No	No	No	No	No	No	No	No
5	Kabwe	No	No	No	No	No	No	No	No
6	Chililabombwe	No	No	No	No	No	No	No	Yes
7	Chingola	No	No	No	No	Yes	No	No	Yes
8	Kalulushi	No	No	No	No	No		Yes	Yes
9	Kitwe	No	No	Yes	No	No	No	No	Yes
10	Luanshya	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
11	Lufwanyama	No							No
12	Masaiti	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	Mpongwe	No							Yes
14	Mufulira	No	No	Yes	No	No	Yes	No	Yes
15	Ndola	No							Yes
16	Kawambwa	No	No	No	No	No	No	No	No
17	Mansa	No	No	No	No	No	No	No	Yes
18	Nchelenge	No	No	No	No	No	No	No	Yes
19	Kafue	Yes	No	Yes	No	Yes	No	Yes	No
20	Chongwe	Yes	Yes	Yes	No	Yes	No	Yes	No
21	Chilubi	No	No	No	No	No	No	No	No
22	Kasama	No	No	No	No	No	No	No	Yes
23	Mbala	Yes	No	No	No	No	No	No	No
24	Mpika	Yes	No	No	No	No	No	No	No
25	Kasempa	No	No	No	No	No	No	No	No
26	Solwezi	No	No	No	No	No	No	No	No
27	Livingstone	No	No	No	No	No	No	No	Yes
28	Kazungula	Yes	No	No	No	No	No	Yes	Yes
29	Choma	No	No	No	No	No	No	Yes	Yes
30	Monze	Yes	Yes	Yes	Yes	Yes	No	No	Yes
31	Mazabuka	No	No	No	No	No	No	Yes	Yes
32	Mongu	No	No	No	No	No	No	No	No
33	Kaoma	No	No	No	No	No	No	No	No
34	Senanga	No	No	No	No	No	No	No	No
35	Mumbwa	No	No	No	No	No	No	No	No

IRS Needs Assessment Checklist

Ministry of Health
National Malaria Control Center

P. O. Box 32509

Lusaka, Zambia

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February 2011

Dear respondent,

The National Malaria Control Centre (NMCC) is carrying out a systematic process to acquire information that will assist the National Malaria Control Program in determining the districts' needs required to implement a cost effective and efficient Indoor Residual Spraying (IRS) program. To do this, a checklist/questionnaire has been designed to capture all aspects of IRS planning, monitoring and evaluating the district IRS activities in all eligible areas. This checklist assesses the requirements for a successful IRS implementation in your district.

Your responses to the questions in the checklist will assist in establishing the current status in your district and the needs to be addressed in order to carryout IRS activities in your district prior to the peak malaria transmission period.

Thank you so much for according us your time to fill in this checklist. Where necessary, please use the margins or provide information on a separate piece of paper cross-referenced to the questionnaire.

Thank you!

Name of District: _____ **Date(s) of Assessment**: _____

Name(s) of Assessor(s): _____

No.	Questions	Responses	Skip to
I.	**Respondent's Particulars**		
1	Name of Respondent	_____	
2	Position	_____	
3	Office Address	_____	
4	Phone/Fax Number	_____	
5	Email Address	_____	
II.	**District Profile**		
1	District Population *(State source e.g. CSO or Head Count)*	_____	
2	Total number of households	_____	
3	Number of structures/houses/housing units sprayed last season N/A ☐	**Formal** _____ **Informal** _____ **Total** _____	
4	Number of structures/houses/ housing units targeted for spraying this season	**Formal** _____ **Informal** _____ **Total** _____	
5	List down the catchment areas or communities and number of structures targeted for spraying starting with the ones with the high number of malaria incidence.	***No*** / **Catchment Area** / **# of Structures** (i) (ii) (iii) (iv) (v) (vi) (vii) (viii) (ix) (x) (xi) (xii)	
6	Are the targeted areas/structures for spraying enumerated, partly enumerated, or not enumerated?	Enumerated .....1 Partly enumerated .....2 Not enumerated 3	

No.	Questions	Responses		Skip to
7	List down the areas requiring enumeration and the number of structures for each area	**Name of area to be enumerated**	**Number of structures**	
8	Are there any unplanned settlements?	YES ……..1 NO ……2		
III.	**Disease Burden**			
	Fill in the information for the following indicators. Where possible, use the HMIS/DHIS. Use previous year data if the current year data is not available/incomplete and specify the reference period			
1	Annual malaria clinical cases	_____		
2	Annual confirmed malaria cases	**RDTs** _____	**Microscopy** _____	**Total** _____
3	Annual malaria admissions	_____		
4	Total annual malaria deaths	_____		
5	Number of children under five who died from malaria	_____		
6	Number of pregnant women who died from malaria	_____		
7	Health facility malaria case fatality rate	_____		
IV.	**IRS Management**			
1	Name of IRS Manager	_____		
2	Contact number	_____		
3	Name of IRS Assistant Manager *(If any)*	_____		
4	Contact number	_____		
5	Number of spray operators required for this spray season	**Males** _____	**Females** _____	**Total** _____

No.	Questions	Responses	Skip to
6	Number of supervisors required for this spray season	**Males** **Females** **Total** _____ _____ _____	
7	Number of days planned for spraying.	_____ Days	
8	Does the District Annual Action Plan exist? *(If YES, may I see a copy)*	YES (Plan seen) .....1 YES (Plan not seen) .....2 NO .....3 Don't Know 4	
9	Do you have someone trained in store keeping and/or emergence handling in case of accidents?	YES .....1 NO 2	→Q11
10	How many are trained in store keeping and/or emergence handling in case of an accident?	**Males** **Females** _____ _____ ...In Store Management _____ _____ ...In Emergency Handling	
11	Do you have someone trained in poison management?	YES .....1 NO 2	→V
12	How many are trained in poison management?	**Males** **Females** **Total** _____ _____ _____	
V.	**Financial Resources**		
1	Indicate the total cost of all the planned health activities for the district	_____	
2	Indicate the total funds allocated to the district	_____	
3	Indicate the funds allocated to malaria activities in the district	_____	
4	Indicate the funds allocated to IRS from the district budget	_____	
5	How much Donor funding is expected for IRS?	_____	

No.	Questions	Responses		Skip to
VI.	**Stakeholders**			
1	Provide a list of stakeholders by type of support towards combating malaria. *Indicate all the malaria vector control activities being carried out in the district and state the implementers*	**Potential Stakeholders**	**Type of Support**	
VII.	**Transport**			
1	Is there any dedicated vector control transport in the district?	YES .....1 NO 2		→ Q3
2	What type of transport is available for the vector control?	***Type of Transport***	***Number***	
3	Is transport available for IRS?	YES .....1 NO 2		→ Q5
4	What type of transport is available?	***Type of Transport***	***Number***	
5	Who is the provider of IRS transport or who do you think is likely to provide transport for IRS?	District.....A Partners.....B Other: _____.....C *(Specify)*		
6	Is transport going to be partial or throughout the entire implementation period?	Partial .....1 Throughout implementation period 2		
7	Is the provider/Are the providers of transport going to provide fuel or a vehicle or both?	Both fuel and vehicle .....1 Fuel only.....2 Vehicle only 3		

No.	Questions	Responses	Skip to
VIII.	**Insecticides**		

No.	Questions	Chemical	Balance brought forward	Qty Received	Qty Used	Mfg Date	Batch #	In Stock
1	How many sachets of insecticides did you receive and how many were used during the previous spray season and what were the batch #s and manufacturing dates?	DDT						
		Fendona						
		ICON						
		K–Othrine						
		Other						

No.	Questions	Responses	Skip to
2	How many sachets of insecticides are required for this spray season?	DDT ……_____ Fendona…….._____ ICON…….._____ K–Othrine ……_____ Other: ……_____ *(Specify)*	

No.	Questions	Type of spray pump	Total number of pumps in stock	# of functional Pumps	Pumps out of order	
					Serviceable	*Non-Serviceable*
1	How many spray pumps do you have in stock? Of these, how many are out of order?					

N/A ☐ → Q3

No.	Questions	Responses	Skip to
2	For the serviceable spray pumps, list down the faulty parts and spare parts required according to part number	_____	
3	How many spray pumps are required for this spray season?	_____	
IX.	**Spray Pumps and Spare Parts**		

No.	Questions	Responses	Skip to
1	How many PPE do you have in stock and how many are required for this spray season?	**Quantity in stock** **Required** Helmets (with face shields) …….. _____ _____ Helmets …….. _____ _____ Overalls …….. _____ _____	
X.	**Personal Protective Equipment (PPE)**		

No.	Questions	Responses	Skip to
	MCR = Multipurpose Chemical Respirators	MCR Respirators ……._____ _____ Cartridge ……._____ _____ Goggles ……_____ _____ Gumboots …….. _____ _____ Gloves (PVC)…….…….. _____ _____ Towels …….. _____ _____ Face Towels …….. _____ _____ Plastic Sheet…….. _____ _____ Mutton Cloth ……_____ _____ Socks …… _____ _____	
XI.	**Storage Facility**		
1	Is/Are there a storage facility(ies) in the district?	YES ……1 NO ……2	Q12
2	Who owns the storage facility(ies)?	_____	→
3	Is the storage facility separated from domestic dwellings?	YES ……1 NO ……2	
4	Is the storage facility floor made of concrete?	YES ……1 NO ……2	
5	Is there space or a room for pumps & accessories?	YES ……1 NO ……2	
6	Is there space or a room for insecticides?	YES ……1 NO ……2	
7	Is there space or a room for keeping spray operators' personal belongings or foodstuffs?	YES ……1 NO ……2	
8	Is there a separate room for store keeper's records?	YES ……1 NO ……2	

No.	Questions	Responses	Skip to
9	Is the storage facility secured with the following:	YES NO Security guard? .....1 .....2 Burglar bars?.....1 .....2 Double locks? .....1 .....2 Electrical fence?.....1 .....2 Wire Fence?..... 1.....2 Wall fence? .....1.....2 Hazard signs?.....1 .....2 Fire Extinguisher? .....1 .....2 Bucket of sand .....1.....2 Ventilation? .....1 .....2 Natural Lighting?.....1 .....2 Artificial Lighting?.....1 .....2 Thermometers?.....1 .....2 Fire detectors?.....1 .....2 Humidity Detectors?.....1 .....2 First aid kit? 1 2	
10	Are there	YES NO Pools of water around the storage facility? .....1.....2 Leaks or cracks in the walls?.....1 .....2 Leaks or cracks in the roof? 1 2	
11	Is the storage facility approved by the Environmental Council of Zambia (ECZ)?	YES .....1 NO 2	
XII.	**Facilities for Spray Operators**		
1	Are there change rooms for the spray operators?	YES .....1 NO 2	
2	Are there any bathing facilities and showers for the operators?	YES, and showers are used .....1 YES, but operators use basins .....2 NO 3	→Q5
3	Are the bathing facilities for men and women separate?	YES .....1 NO 2	

No.	Questions	Responses	Skip to
4	How many bathing facilities are there for males and females?	_____ for males _____ for females	
5	Is there adequate water for bathing and/or washing pumps?	YES .....1 NO 2	
6	Are there wash basins or sinks for PPE?	YES .....1 NO 2	
7	How many barrels or drums do you have for washing pumps?	_____ Barrels/Drums	
XIII.	**Disposal Facilities**		
1	Do you have a soak pit?	YES .....1 NO 2	
2	Do you have an evaporation tank?	YES .....1 NO 2	Q4
3	Does the evaporation tank have a roof?	YES .....1 NO 2	
4	Do you have an incinerator in the district that can be used for pyrethroid waste?	YES .....1 NO 2	XIV
5	Does the incinerator work?	YES .....1 NO 2	Q7
6	What is the problem with the incinerator?	_____	
7	What type of energy does the incinerator use?	Diesel .....1 Electricity .....2 Firewood .....3 Other: _____.....4 *(Specify)*	

No.	Questions	Responses	Skip to
8	Is the incinerator approved by the Environmental Council of Zambia (ECZ)?	YES .....1 NO 2	
XIV.	**IRS Information, Education, and Communication (IEC) Materials**		
1	Do you have IRS IEC materials that remained from the previous campaign?	YES .....1 NO 2	→ Q3
2	Which materials remained?	Fliers (Community) .....A Brochures (Spray Operators) .....B Posters .....C Stickers *(for vehicles)* .....D DVDs .....E CDs .....F IRS Communication Strategy *(Booklet)* .....G	
3	Does the district have a community radio station?	YES .....1 NO 2	
4	What is the name of the radio station that can be used to air IRS programs in this district?	_____	
5	Did the district do any malaria/IRS radio programs during the previous campaign?	YES .....1 NO 2	→Q7
6	Which radio station was used?	Community Radio Station .....A Name of Station: _____ National Radio Station .....B	
7	Which language did you use?	_____	
8	Does the district have access to a Mobile Video Unit (MVU)?	YES .....1 NO 2	
9	Does the district have access to the Zambia National Information Service (ZANIS) Public Address (PA) System?	YES .....1 NO 2	

No.	Questions	Responses	Skip to
10	Did you receive any official complaint on IRS?	YES ……..1 NO ……..2 N/A *(New District)*……..3	Q12
11	What complaints did you receive on IRS?	_____	
12	What support do you expect from partners for IRS IEC activities?	_____	
13	What support do you require from the National Level for IRS IEC activities?	_____	

Thank You!