WASHE
water · sanitation · health education

in Zambia

FIRST EDITION

The Status of Rural Water Supply In Zambia

Supplementary Module Ib

PROGRAMME CO-ORDINATION UNIT

CONTENTS

UNICEF/GIACOMO PIROZZI

PREFACE

THE CORE TRAINING MANUALS AND SUPPLEMENTARY MODULES

The Core Training Manuals and Supplementary Modules have been produced to support the implementation of WASHE in Zambia.
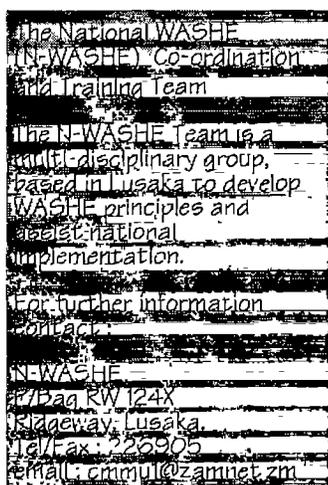
WASHE

WAter Sanitation Health Education

WASHE has been developed in Zambia over the last ten years. Learning mainly from the experiences of Western and Southern Provinces, it is now recognised to be a sustainable approach to rural water supply and sanitation.

The Core Training Manuals provide the background to this development and explain its context in view of decentralisation. The Manuals are intended to provide flexible guidelines to assist the growth of WASHE primarily at district level.

The Supplementary Modules provide community management guidelines for use at all levels; national to community. The series includes technical, participatory health and hygiene education and community management titles. Each module has been written to 'stand alone' or be used as part of an overall community management approach where each title in the series complements the next. It is helpful to get to know the titles and become familiar with the contents to enable you to make informed decisions.

At the back of this module is a list of the titles that compile the Core Training Manuals and Supplementary Modules Series. Full details of the contents of each title can be found in *The Community Management and Monitoring Unit Publications List.* All titles are available from the CMMU.

For further information contact:

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The National WASHE
(N-WASHE) Co-ordination
and Training Team

The N-WASHE Team is a
multi-disciplinary group,
based in Lusaka to develop
WASHE principles and
assist national
implementation.

For further information
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The guidelines and materials form the basis for the advocacy and training work of the National WASHE Co-ordination and Training Team (N-WASHE).

The Core Training Manuals and Supplementary Modules have been developed and written by the Community Management and Monitoring Unit (CMMU).

This is Supplementary Module 1b and is called The Status of Rural Water Supply in Zambia.

WHO THE SUPPLEMENTARY MODULES ARE FOR

The Supplementary Modules are written for people who are intending to develop community management as part of their overall objective for rural water supply and sanitation. These people are likely to represent :

- district councils and D-WASHE committees

- specific line ministries

- NGOs

- Donors

- volunteer agencies

- development organisations

The individuals are likely to be :

- rural and peri urban extension officers from WASHE line ministries

- environmental health technicians

- community development workers

- community health workers

- teachers

- project personnel

The guidelines have been developed within a Zambian context but can easily be adapted to meet the needs of other developing countries.

Throughout the Core Training Manuals and the Supplementary Modules, *the Community* refers to a group of people with a common present or potential interest in WASHE. A single family unit is referred to as a *household.*

By *Community Management* we mean : the ability of the community to have the *responsibility, authority, accountability and control* of the WASHE process that exists for their benefit.

The CMMU believes that community management will only become a reality if issues of gender are seen to be integral to the project cycle and participatory process. By *gender in rural water supply* we mean : *the context and reality of both women's and men's lives that can together affect self determined change. Gender is not women's issue alone.*

HOW THE SUPPLEMENTARY MODULES WERE DEVELOPED

CMMU was mandated in 1993 to address issues of long term sustainability in the rural water supply and sanitation sector. CMMU began a programme of participatory research throughout the country and it was during this time that it became evident that some regions had a greater chance of sustainability than others. The approaches being used by projects involved in the sector varied from one area to the next. While projects agreed that a community management approach through participation was appropriate there was little or no standardisation. The absence of a standardised community management approach for Zambia meant that the quality of delivery and ultimate level of choice for the community was at best patchy.

In order to address this the CMMU set about collecting "best practice" ideas, knowledge and materials from around the country. It concentrated on participatory techniques, technology options and community management issues for rural water supply and sanitation. The result, through a series of consultative workshops, committees and core working groups, is the current series of supplementary modules.

ACKNOWLEDGEMENTS

The Core Training Manuals and Supplementary Modules have been produced entirely within the CMMU.

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Section 1

INTRODUCTION

SECTION ONE
ABOUT THIS MODULE

This module examines the status of rural water supply in Zambia, an activity which has been made possible following the completion of the National Water Point Inventory which was undertaken between 1994 and 1996.

- Section 1   Introduction

- Section 2   The National Water Point Inventory

- Section 3   Assumptions and Definitions

- Section 4   A National Perspective

- Section 5   District Summary Sheets

The format is designed to help you :

- find things quickly

- work systematically through the contents

This supplementary module can be used in conjunction with the supplementary modules pertaining to the National Water Point Inventory - Map catalogues where more detailed district specific information is provided.

It is important to remember that rural water supply is a dynamic process with new water points being constructed or rehabilitated at all times. Therefore, the numbers presented in this module will constantly change although it is considered that the trends outlined will remain fairly constant.

It is of the uttermost importance therefore to report any new constructions or rehabilitation works to your local District WASHE Committee in order to keep this module continually up to date.

THE APPROACH

To equip you with the knowledge to :

- understand how the National Water Point Inventory was undertaken

- understand the parameters used to define coverage, technologies and future investment requirements

- gain an understanding of the status of rural water supply from a national perspective

- help inform planning of rural water supply interventions

OVERALL OBJECTIVES OF THIS MODULE

Notes :

Use this page to make your own notes.

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Section
2

THE NATIONAL WATER POINT INVENTORY

SECTION TWO

THE NATIONAL WATER POINT INVENTORY

In December 1993 the CMMU commenced the compilation of a national water point inventory the purpose of which was to establish the status of rural water supply throughout the country. More specifically the inventory was to identify in relation to each known water point:

• its location

• technical details such as technology type, construction details, depth and pump type etc.

• whether or not the water is in use and if not, why

• who was involved in its construction

• details of the most recent repairs or rehabilitation efforts

• its reliability

• qualitative water quality

• details regarding community management and health education

• what the water is being used for

• what the problems are as perceived by the users

To facilitate this major exercise the CMMU employed the services of enumerators, one in each district, whose responsibility was to locate all water points and administer a questionnaire at each location. Where Water Development Officers were available from the Department of Water Affairs (DWA) these were used, otherwise grade 12 school leavers were employed by the CMMU.

Each enumerator was given training in the area of motor-cycle riding and maintenance. Once the appropriate drivers licenses had been obtained, the enumerators were trained in surveying techniques and equipped with a motor-cycle and the necessary surveying equipment to allow them to carry out the survey.

The enumerators started in their districts by identifying any existing lists of water points that may have been in the possession of the District Council or the DWA. The survey commenced on the basis of these lists and while doing so the enumerators tried, with the help of the communities, to identify other water points.

Questionnaires, once completed, were forwarded to a provincial co-ordinator who in turn sent them to the CMMU in Lusaka for inclusion on the national data base. This data base was compiled on computer using DBase IV.

An example of the question-
aire which was administered
at each water point is given
overleaf.

In all a total of 91 "fields" (or individual pieces of information), relating to each water point have been tabulated. It is possible to retrieve any combination of these fields from the data base to suit your individual needs. For example, it is possible to obtain a list of all water points in a particular Ward that are of a specific technology type but are dry, and so on.

If you would like specific infor-
mation to support your plan-
ning activities, contact the
CMMU or N-WASHE in
Lusaka and/or your local Dis-
trict WASHE Committee

For the moment, and until more people become familiar with the data base, the CMMU produces the information in two distinct formats. The first and most important is through the National Water Point Inventory Map Catalogues and the second is a simple printout providing basic information from the data base.

For more information
see Supplementary Modules
National Water Point
Inventory District Map
Catalogues.

The information provided in this supplementary module represents the first serious attempt to examine the data base in order to establish the status of rural water supply in Zambia. It is a culmination of a considerable effort of a large number of people at all levels and the CMMU would like to use this opportunity to acknowledge this. To date more than 24 000 water points have been surveyed in detail in all parts of Zambia and this document represents the initial findings of this undertaking.

GWEMBE DISTRICT
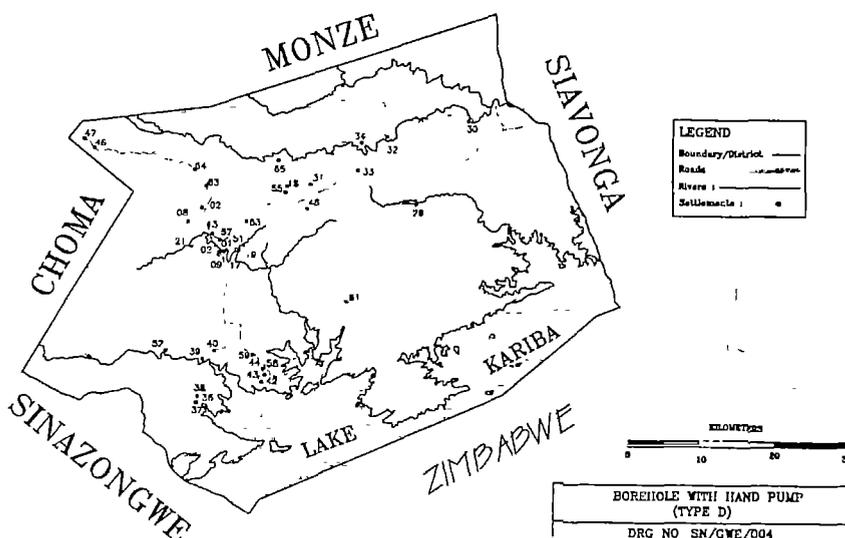
An example of a map from
Gwembe District showing the
location of boreholes with
handpumps Each water point
has its own distinct number
which is cross refferenced
with the data base The maps
are digitally produced

LEGEND
Boundary/District ——
Roads ————
Rivers ————
Settlements ●

KILOMETRES
0   10   20   30

BOREHOLE WITH HAND PUMP
(TYPE D)
DRG NO SN/GWE/004

An example of the questionnaire as administered at each water point

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COMMUNITY MANAGEMENT & MONITORING UNIT

Rural Water Supply - Water point inventory (2nd Draft)

(Part I)

Province.————— District:————— Date·————

Ward:————— Chiefs Area:———— Time:——:——Hrs

Village:————— W/Point name: —————

Alternative Village name:————————————

Location South [ ][ ][ ][ ][ ][ ]   East: [ ][ ][ ][ ][ ][ ]

WATER POINT DETAILS
Hand dug well   Tubewell   Jetted well   Borehole

☐ B&W   ☐ B&W   ☐ H/Pump   ☐ H/pump

☐ H/Pump   ☐ H/Pump   Other:..... ....

Total depth: [:|]   Depth to Water [| :|]

Type of Lining: [CIS] [PC]   I/D of well: [:| |]
                m m y y
Date well completed. [| |] By whom: [CP] [   ]

Is the well currently in use [Y|N] if not why ————————

(Part II)

In the case of a handpump

a) Has it ever been repaired   [Y|N]
                                     m m y y
b) When was the last time it was repaired [| | |]

c) Since installation how many times has it been repaired

  [|] (please state number of times repaired)

d) Who did the last repairs [CP] + [   ]

In the case of a hand dug well

a) Has it ever been rehabilitated [Y|N]
                                          m m y y
b) When was the last time it was rehabilitated [| | |.]

c) Who did the last rehabilitation [CP] + [   ]

d) How many times has it been rehabilitated since construction

  [|] (Please state number of times rehabilitated)

What works were carried out the last time
Repairs/Rehabilitation was undertaken

	REPAIR	REPLACE	
BUCKET			
CHAIN			
WINDLASS			(Tick where appropriate)
POLES			
LID			
COVER			
APRON			
DRAIN			
SOAKAWAY			
HANDPUMP			

Has the well ever been deepened [Y|N]

Does it ever go dry [Y|N] When ————————————

Is there another reliable protected source nearby [Y|N]

Distance [|] time in minutes.————————

(Part III)

WATER QUALITY

Are users happy with the water quality [Y|N]

If not why? ————————————————

Which R H C do Users go to for treatment ——————————

Has there been a health education programme in relation to

this well [Y|N]   Does it still continue [Y|N]

Is there a village water/sanitation committee: [Y|N]

Who prompted the formation of the village water/sanitation
committee? ————————————————————

Does it still function [Y|N] CONTACT NAME·————————

Population [| | | |]   Number of houses [| | | |]

General Remarks:————————————————
————————————————————————
————————————————————————
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————————————————————————
————————————————————————
————————————————————————
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————————————————————————

(Part IV)

Condition of water point components

Hand dug/Tube well   Tube/Jetted/Bolehole/Handdug

COMPONENTS	G	B	M
BUCKET			
CHAIN/ROPE			
WINDLASS			
POLES			
LID			
COVER			
LINING			
OTHER			

Pump type.			G	B	M
WORKING ORDER [Y	N]	NUTS			
Number of Strokes to fill 10L bucket	HANDLE			
	BEARING			
- [ ] Strokes				

Number of strokes to Resume water delivery 2min after pumping stopped

- [   ] Strokes   Pump not working but no visiable fault [Y]

COMPONENT	G	B	M
APRON			
DRAIN			
SOAKWAY			
OTHER			

WATER USE

Drinking   ☐ Other ☐ (specify)
Bathing   ☐
Washing   ☐
Gardens   ☐
Animals   ☐

Is the Well located in the village [Y|N] Distance [|]
                                         (Time)

Do users have problems in relation to this Well [Y|N]

Technical	Socio/Cultural	Economic	Other

SURVEYOR.. ... .
       (Block)

ASSUMPTIONS
AND
DEFINITIONS

SECTION THREE
ASSUMPTIONS AND DEFINITIONS

By the end of this section you will have

◻ been introduced to the district summary sheet for each district

◻ been provided with an explanation of the parameters given in each of the summary sheets

◻ gained an understanding of the assumptions that have been made to allow the calculations to be processed

◻ gained an understanding of the basis on which the calculations have been made

The information in section 4 has been presented in the form of a **district summary sheet** for each district. An example of this sheet is provided in the margin and is divided into the following areas :

- technology distribution

- reliability factors

- coverage indicators

- investment indicators

- map of Zambia showing the location of the district and province.

Each of these areas is discussed separately and the assumptions and definitions are described.

TECHNOLOGY DISTRIBUTION

This is the simplest table in the district summary sheet. It represents a simple count of the number of water points in the district by technology type. It also shows the number of water points which were in use and not in use at the time of the survey. The example provided here from Mumbwa District, Central Province, shows that a total of 774 water points have been identified. Of these 472 are water point type 'A' (hand-dug well with bucket and windlass), and that 123 of these were not in use at the time of the survey. In a similar manner other technology types are described.

When considering the concepts of "in use" and "not in use" it is important to have a clear understanding of what these means.

The Status of Rural Water Supply in Zambia   Supplementary Module 1b

SUMMARY SHEET   **MUMBWA DISTRICT**

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	349	123	472
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	123	86	209
E	Hand dug well with a hand pump	73	7	80
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	3	10	13
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	548	226	774

CENTRAL PROVINCE

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0.60	60%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :		145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
...	1 126	1 457	1 349
...	1 288	1 638	1 444
...	1 877	1 978	1 987
...	90	36	43
...	63	57	89

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								171 806
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
	0	0	0	0	0	0	0	0	
	125	0	0	86	7	0	10	0	228
	0	0	0	0	0	0	0	0	0
	86 100	0	0	80 300	4 800	0	7 000	0	136 200
	86 100	0	0	80 300	4 800	0	7 000	0	156 800

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TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
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P	Private well (usually unprotected)	0	0	0
	TOTALS	548	226	774

Technology Distribution, an extraction from the Mumbwa District Summary Sheet

In use means that during the survey there was evidence that the water point was actually in use for the purposes of drawing water. It does not mean that the water point was functioning as it was originally designed to. For example, it does not mean that there was a bucket and windlass where there should have been or that the components of the water point were in good condition. In simple terms *in use* means that the community recognised the water point as a source of water and were using it.

In use means that the community recognised the water point as a source of water and were using it.

Conversely, *not in use* means there was no evidence that the water point was being used by the community for one reason or another. Perhaps it has been abandoned or it had dried up. *Not in use* means that the community did not recognise the water point as a potential source of water and therefore the investment made has now been lost.

Not in use means that the community did not recognise the water point as a potential source of water and therefore the investment made has now been lost

It should always be remembered that the provision of rural water supplies is a dynamic process. Water points are constantly being constructed or rehabilitated and therefore the numbers are constantly changing. However, it is felt that unless there is major investment in the district the trends outlined in this document will not change significantly.

RELIABILITY FACTOR

The reliability factor is an indication of how reliable the water points in the district are and therefore it it necessary that we describe the term reliable. The rural water supply coverage parameters for Zambia suggest that for a person to have access to a water point, that water point must provide water all day every day. Therefore for a water point to be reliable this parameter must be met. In other words a water point which goes dry for some period of time during the year or is broken down, is not reliable. It does not provide adequate water all year round.

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0.50	50%

Reliability Factor, an extraction from the Mumbwa District Summary Sheet

To calculate the reliability factor we counted all the water points which were *in use but do not go dry at any time of the year* and then expressed this number as a factor (percentage) of the total number of water points identified in the district.

For more information see Supplementary Module 1a Coverage Parameters for Rural Water Supply in Zambia

Care must be take when interpreting this figure. Using the method described above does not necessarily indicate the level of unreliability. For example, some water points go

dry for only part of the day while others go dry for some months. However if we are to use the coverage parameters as set out in Supplementary Module 1a then in real terms all these water points are unreliable.

Using the example shown here, Mumbwa District, the reliability factor is given as 0.5 (or 50%). This means that 50 percent,or one half of all water points in the district are unreliable, as described above.

COVERAGE INDICATORS

There are a number of ways that coverage can be described but all of these ways have to do with the relationship between the number of water points and the number of people in a district. Questions can be raised in relation to how coverage is described and these usually relate to how selective the user of the information is when making calculations. For example, one way of expressing coverage might be to divide the number of people by the number of water points which would express coverage in terms of the number of people per water point. This might assume that all water points are in use and therefore may give a false indication of what the actual coverage is.

For the purposes of this document we have selected the following parameters:

* rural population 1996

* crude coverage ratio, all water points

* crude coverage ratio, water points in use only

* crude coverage ratio, reliable water points only

* actual coverage ratio, all water points

* actual coverage ratio, water points in use only

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1:188	1:457	1 249
Crude coverage ratio, water points in use only	1:265	1:635	1:344
Crude coverage ratio, reliable water points only	1:377	1:878	1:567
Actual coverage ratio, all water points (%)	90	38	43
Actual coverage ratio, water points in use only (%)	65	27	29

Coverage Indicators, an extraction from the Mumbwa District Summary Sheet

Rural Population

Population calculations and projections were made on the basis of the "Census of Population, Housing and Agriculture, 1990, Descriptive Tables, Volume 10". The district population was calculated by taking the population in 1990 and applying the population growth rate between 1980 and 1990 using the formula given opposite. The rural population was calculated by subtracting the population of urban townships as described in the above tables. In the example given the rural population for Mumbwa District in 1996 is estimated to be 145 248.

Crude Coverage Ratio, All Water Points

The **crude coverage ratio, all water points**, is a very simple expression of coverage in that is calculated by dividing the total rural population of the district by the number of identified water points. It is described as "crude" because it does not take into account the population distribution, the water point distribution, the number of water points in use or the number of protected water points. It is merely an expression of the average number of people per water point in the district, province and nationally as is the case in the example provided.

However it is useful in determining the relative coverage of one district in relation to other districts. For example, in Mumbwa District it can be seen that the **Crude Coverage Ratio, All Water Points** is 1 : 188, indicating that there is an average of 1 water point for every 188 people. For Central Province this ratio is 1 : 457 suggesting that from a provincial perspective Mumbwa District is better off in terms of this parameter. The same applies from a national perspective where this ratio is 1 : 249. In fact, Mumbwa District ranks 11th highest in the country when this ratio is applied.

Crude Coverage Ratio, Water Points In Use Only

This coverage ratio is calculated in a similar manner to the previous ratio except that the population is divided by the number of water points that are in use only. It is more meaningful than the previous ratio in that it demonstrates that the total number of water points is not as important as the number of water points which are in use. Once again, using our example of Mumbwa the ratios are 1 : 265, 1 : 635 and 1 : 344 for the district, province and nation

Population calculations using the following formula.

$P_N = P_1(1+r)^n$ where

P_N = population now (being 1996)

P_T = Population then (being 1990)

r = population growth rate between 1980 an 1990 which for Mumbwa District was 0 043

n = number of intervening years being 6 in this case

Applying these figures the population in Mumbwa in 1996 (P_N) is:

$P_N = 127\ 895(1 + 0.043)^6$

$PN = 145\ 248$

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
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Coverage Indicators, an extraction from the Mumbwa District Summary Sheet

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1·188	1 457	1:249
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Actual coverage ratio, all water points (%)	90	38	43
Actual coverage ratio, water points in use only (%)	63	27	29

Coverage Indicators, an extraction from the Mumbwa District Summary Sheet

respectively. Mumbwa district ranks 9th highest in Zambia when this ratio is applied. This means that there are a higher percentage of water points **in use** in Mumbwa than there are in other districts.

Crude Coverage Ratio, Reliable Water Points Only

This coverage ratio indicates the coverage for reliable water points only. It is calculated by dividing the rural population by the number of reliable water points and once again the figures are 1 : 377, 1 : 878 and 1 : 567 for the district, province and nation respectively. Mumbwa district ranks 8th in the country against this ratio.

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 ·			145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 188	1:457	1·249
Crude coverage ratio, water points in use only	1:265	1:635	1:344
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Actual coverage ratio, all water points (%)	90	38	43
Actual coverage ratio, water points in use only (%)	63	27	29

Coverage Indicators, an extraction from the Mumbwa District Summary Sheet

So what can we derive from the CRUDE COVERAGE RATIOS? Crude coverage ratios are best suited to defining the coverage of each district or province relative to the others. It can be used to define priorities from a national or provincial perspective. When districts are ranked against the ratios it can indicate that the interventions being made in one district are better than in others. For example, in Mumbwa District the *crude coverage ratio, all water points* ranks 11th in Zambia and the *crude coverage ratio, water points in use only,* ranks 9th. This suggests that there is a higher percentage of water points in use in Mumbwa district than there are in other districts. This begs the question why it might be so. It could be due to :

- the application of technologies in this district being more appropriate than in other districts

- stronger elements of community management here than in other districts

- construction techniques being better

- maintenance support mechanisms being better

- less impact of environmental factors or drought

- population distribution and densities

While all of these issues can not be addressed here it is important to understand how the indicators can be used to help plan future interventions.

Actual Coverage Ratio, all water points

The **actual coverage ratios** are different from the crude coverage ratios in that they attempt to provide a more accurate estimate of what the "real" or "actual" coverage is. Recognising the fact that crude coverage ratios have a specific value the CMMU feels that this is not enough as it gives no indication of the level of service being provided to the rural communities.

By way of explanation consider the **crude coverage ratio, all water points** in Mkushi District which is 1 : 398. Assume that on average it takes about 5 minutes to draw a bucket of water from a well. In this case where there are an average of 398 people for every water point then a total of 1 990 minutes (398 people x 5 minutes each), would be required for all the people to draw 20 litres of water each, (20 litres per person per day being the minimum to meet minimum coverage standards). This time is equivalent to over 33 hours, more hours than there are in a day! Therefore it must be recognised that water points do have their limitations, particularly in relation to the number of people they can actually serve which in turn, is dependent on the type of technology being used.

On this basis the **actual coverage ratios** were calculated by examining the different technologies found in the district and multiplying each by the number of people they have the capacity to serve. This figure is then presented as a percentage of the total rural population of each district. For the purposes of this calculation a "day" has been assumed to be the hours of daylight, roughly twelve hours and the following technology capacities were used:

- hand-dug well with bucket and windlass - 150 people per day
- tube well - 100 people per day
- jetted well with hand pump - 200 people per day
- borehole with hand pump - 200 people per day
- private, unprotected well - 20 people per day
- other technologies - 100 people per day

In the sample of Mumbwa District the **actual coverage ratio, all water points** has been calculated to be 90 percent, way above the provincial and national ratios of 38 an 41 percent respectively. On the table of ranking

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996.			145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1.188	1 457	1 249
Crude coverage ratio, water points in use only	1.265	1.635	1.344
Crude coverage ratio, reliable water points only	1.377	1.878	1.567
Actual coverage ratio, all water points (%)	90	38	43
Actual coverage ratio, water points in use only (%)	63	27	29

Coverage Indicators, an extraction from the Mumbwa District Summary Sheet

For more information see Supplementary Module 1a Coverage Parameters for Rural water supply in Zambia

Actual coverage ratio, all water points - Mumbwa District.

Calculations

472 type A x 150 = 70 800

209 type D x 200 = 41 800

80 type E x 200 = 16 000

13 other x 100 = 1 300

Total served   129 900

Expressed as a percentage of the total population.

129,900/145,248x100= 90%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 188	1:457	1 249
Crude coverage ratio, water points in use only	1.265	1.635	1.344
Crude coverage ratio, reliable water points only	1.377	1.878	1.567
Actual coverage ratio, all water points (%)	90	38	43
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Coverage Indicators, an extraction from the Mumbwa District Summary Sheet

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996:			145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
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Actual coverage ratio, water points in use only (%)	63	27	29

Coverage Indicators, an extraction from the
Mumbwa District Summary Sheet

Mumbwa moves into joint second place with Samfya, Chama and Mansa Districts in respect to this coverage ratio.

For comparison purposes the highest coverage ratio recorded in this category is Luangwa District, recording 117 percent coverage while the lowest is Mporokoso at 21 percent.

Actual Coverage Ratio, Water Points In Use Only

This ratio has been calculated in the same manner as the previous one except only water points which are in use were considered. In our sample, Mumbwa, the coverage now drops from 90 percent to, still a very high, 63 percent, the third highest in the country and way above the provincial figure, being 27 percent while the national figure is 29 percent.

What lessons can be learned from the **actual coverage ratios?** For many years the concept of coverage had been much debated in Zambia. What the term "coverage" actually meant was usually the centre of the debate and therefore any estimates which were made were always questioned on these grounds. Having said that, in recent years the national rural water supply "coverage" had been estimated to be around 28 percent, despite the absence of accurate information. The National Water Point Inventory has indicated that the actual national coverage is close to 43 percent, for all water points, and 29 percent for *water points in use only* based on very accurate information.

Accepting that these coverage parameters are accurate and valid it is now possible to prepare investment indicators to achieve a pre defined national coverage which is needs specific. This is discussed in more detail below.

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

The National Programme of Action for Children in Zambia, GRZ 1995

The National Programmee of Action for Children in Zambia, a Government ratified strategy for the improvement of the quality of life of the people of Zambia, with a specific focus on children, has as a target the achievement of 50 percent coverage in rural water supply by the year 2 000. As indicated above it is now possible to

estimate, by district, the invesiment requirements to achieve this.

The final section on the district summary sheet provides this information and the following assumptions were made to prepare this table:

- the actual coverage ratios are considered valid

- the coverage parameters described in Supplementary Module 1a are considered valid

- the investment requirements consider only the capital costs and do not cater for any "software" or capacity building elements

The first item on this table is the estimated population for the year 2 000. This was estimated using the formula and method described previously (see page 13). In our sample, Mumbwa, the population is estimated as being 171 889 in the year 2 000.

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 00 0							-		171 889
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	123	0	0	86	7	0	10	0	226
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	86 100	0	0	60 200	4 900	0	7 000	0	158 200
Total Costs $	86 100	0	0	60 200	4 900	0	7 000	0	158 200

Example taken from the Mumbwa Summary Sheet

NEW WATER POINT REQUIREMENTS

In making these calculations it was assumed that the distribution of technology types in the district would remain the same and therefore future projections were based on this distribution. It was also assumed that all the existing water points which are in use would continue in use and that they would be maintained in correct working order.

Costs (1996) for new water points have been calculated as follows:

- hand dug well with bucket and windlass $2 575

- borehole with handpump $5 550

- hand dug well with handpump $2 850

- tube well $1 750

- jetted well $1 700

Rehabilitation Requirements

It has been assumed that all existing water points which are not in use will be rehabilitated and that they will remain in use and be maintained in the correct working order. Rehabilitation costs have been assumed at $700 each for all technology types.

Water point type:

A - hand dug well with bucket and windlass

D - borehole with handpump

E - hand dug well with handpump

G - windmill

In our sample then it can be seen that a total of 226 water points need to be rehabilitated at an average cost of $700 each (123 type A's, 86 type D's, 7 type E's and 10 type G's). The total cost to achieve 50 percent coverage by the year 2 000 is then $158 200.

It can not be over stated that the costs outlined here are no more than indicative costs designed to help planners and implementors. As previously stated these costs do not include for "software elements" or for capacity building at any level. It is the opinion of the CMMU that no intervention should take place without this software element if sustainable rural water supply is to be achieved. These software elements do cost money and must be budgeted for.
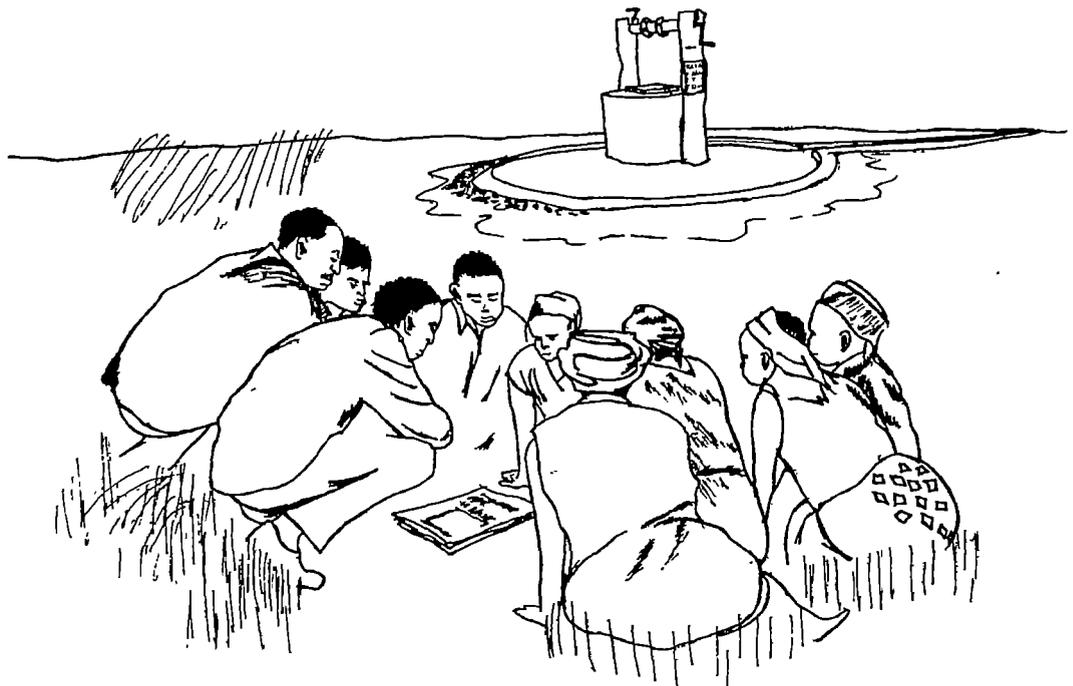
Section
4

A NATIONAL
PERSPECTIVE

UNICEF/GIACOMO PIROZZI

SECTION FOUR

A NATIONAL PERSPECTIVE

By the end of this section you will have:

- been introduced to the status of rural water supply from a national perspective

- gained a basic understanding of the problems associated with interpreting a national perspective

Zambia has an area of almost 729 000 square kilometres with an estimated population of about nine million (1996), almost five million living the rural areas. Rainfall varies between about 1 500mm in the north to less than 700mm in the south. Many diverse social, cultural, agricultural and environmental situations can be found in Zambia and these have a recognised effect on water resources.

Against this profile, national coverage must be considered with caution as it:

- assumes that the rural population is equally distributed. In reality the population density varies from just one person per square kilometre in Mufumbwe District to about thirty six in Katete District (1990)

- assumes that the water points are equally distributed and again the density varies considerably from one district to the next.

- does not consider varying environmental situations such as desert or densely forested areas

- does not consider land use issues such as mining, agricultural practices or animal husbandry patterns etc.

- does not consider high/low rainfall patterns

- does not consider water priorities, for example water to meet basic needs versus agricultural (irrigation) needs versus animal needs

- does not consider varying hydrogeological situations

- does not consider the great variation in support for water supplies and the capacity to manage them at District level.

All these issues can affect the amount of water that is available and how it it used. For the purposes of this document these issues have been ignored, the assumption being that all things are equal across the country.

As at the 8th December 1996, a total of 24 020 water points had been identified, surveyed and added to the National Water Point Inventory Data Base. These are made up of the following technology types:

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and winfdlass	6 690	3 266	9 956
B	Tube well with bucket and windlass	109	60	169
C	Jetted well with hand pump	215	105	320
D	Borehole with hand pump	2 144	1 030	3 174
E	Hand dug well with hand pump	476	338	814
F	Tube well with handpump	5	9	14
G	Hand dug well/borehole with windmill	39	46	85
H	Protected spring	31	5	36
P	Private well (usually unprotected)	7 701	1 751	9 452
	TOTALS	17 410	6 610	24 020

Five major technologies have been identified:

- type A and E - the hand dug well (with bucket and windlass or with hand pump)

- type B and F - the tube well (with bucket and windlass or with hand pump)

- type C - the jetted well with hand pump

- type D - the borehole with hand pump

- the private well

Water points A, B, C, D, E and F are all considered to be protected water points, **suitable for communal water supply.** Type P water points or privately owned wells are usually unprotected and the yield limited. Therefore they are not considered suitable for **communal supplies.** However, type P water points do account for almost 39 percent of all rural water points and because of this they should be recognised as a major resource. Private wells exist in huge numbers in Luapula and Northern Provinces. In Mansa District alone there are over 3 000 of these which accounts for 60 percent of the coverage there, (actual coverage, all water points). Nationally, private wells contribute 8 percent to actual coverage.

National coverage ratios are as follows :

COVERAGE PARAMETER	RATIO
Crude coverage ratio, all water points	1 : 249
Crude coverage ratio, water points in use only	1 344
Crude coverage ratio, reliable water points	1 567
Actual coverage ratio, all water points	43%
Actual coverage rage ratio ,water point in use only	29%

Of these coverage ratios the most meaningful are probably the actual coverage ratios. 43 percent coverage for all water points is higher than previously thought although it is clear that a considerable amount of work needs to be done to make this "real" coverage and bring the water points which are not in use back into working order.

PERFORMANCE OF WATER POINTS

Approximately one third of all protected water points were found not to be in use at the time of the survey. When private water points are included in this calculation the number of water points *not in use* drops to about 27 percent of the total. This however is dependent on the type of technology. The private well seems to perform best (in terms of being used) followed by the jetted well with hand pump.

For the private well it is believed that these fare better because:

● being privately owned there is a greater incentive to keep it functional

● it has fewer users -it has been estimated that a private well caters for an average of about twenty people

● the technology is the least technologically advanced and therefore is easier to maintain

● the technology is cheaper and probably more affordable for the users

It is noted that the private well is more prone to contamination than the protected sources. For the jetted well it is understood that for many years there has been a strong component of community management and maintenance in Western Province where this technology prevails. It is believed that this has had a significant

impact in the maintenance and hence good performance of these water points.

The hand dug well with hand pump fares worst with less than 60 percent in use at the time of the survey. The other technologies seem to hover around 66 percent in use. The performance of the major technologies is indicated below:

Performance by Technology Type
(Major technologies)
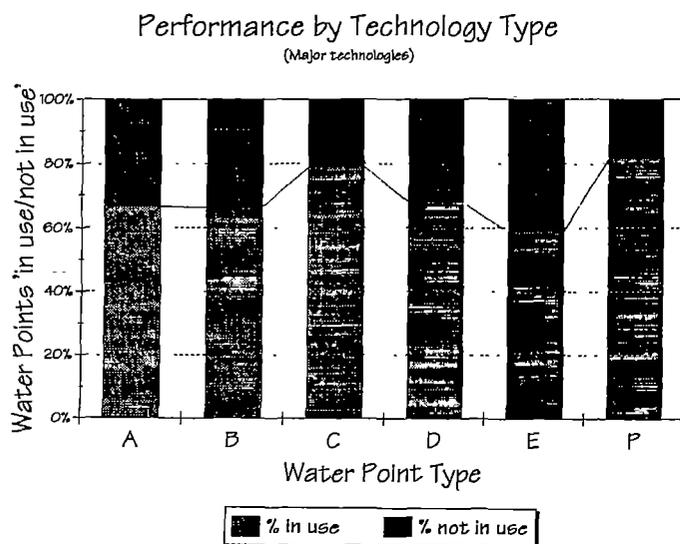
PERFORMANCE OF TECHNOLOGY TYPES

Technology types:

A - Hand Dug well with bucket and windlass

B - Tube well with bucket and wind lass

C - Jetted well with handpump

D - Borehole with handpump

E - Hand dug well with handpump

P - Private well

The major reasons for water points not being in use are:

• in the case of hand dug wells they are dry or go dry at some time throughout the year. In recent years this has been made worse as drought conditions continue in some parts of the country resulting in a general lowering of the water table.

• in the case of wells fitted with handpumps problems associated with the handpump itself predominate.

RELIABILITY OF WATER POINTS

Nationally, the reliability factor for all water points is calculated as being 0.44 or 44 percent. As previously indicated, care should be taken when using this figure.

NATIONAL INVESTMENT REQUIREMENTS

It has been estimated that, nationally, there will be a rural population of about 7.1 million people in Zambia by the year 2 000. To achieve 50% coverage by that time (as explained earlier - see page 16) will require an estimated

The National Programme of Action for Children in Zambia, GRZ 1995

8 930 new water points to be constructed, 4 859 to be rehabilitated at a total *capital* cost of about 29 million US$.

The WASHE concept is an integrated approach to the development and sustainability of rural water supply and sanitation through health education WASHE is advocated by GRZ and supported by donors and NGO's as an appropriate approach.

The estimates do not consider costs related to "software" or capacity building at any level, a component which is considered fundamental for water supplies which are to be community based. In addition, the CMMU believes that the provision of safe water alone is not necessarily going to improve people's health and well being. The provision of integrated water, sanitation and health education for behaviour change should now be the basis of any water and sanitation intervention, if the quality of life is to be improved on a large scale.

Apart from the financial cost of the capacity building, hygiene and health education components, there are also time implications which these elements infer. In the short term, these elements are considered to slow down well completion programmes and are often avoided because of this. However, by promoting better partnerships through the D-WASHE Committees and improving planning it is considered that these problems can be overcome so that sustainability can be enhanced.

The D-WASHE Committee operates at district level as an intersectoral planning and facilitation group. The D-WASHE Committee is responsible for the overall needs identification, assessment and requirements and facilitation of a D-WASHE plan D-WASHE Committees are expected to be operational in all districts within a couple of years. They already exist in many and can be contacted through the district council

A summary of the total requirements, together with the financial implications is given below by technology type

CLASS	DESCRIPTION	NUMBER OF NEW WATER POINTS	NUMBER OF REHABILITATED WATER POINTS	TOTAL COST '000 US$
A	Handdug well with bucket and windlass	6 769	3 266	19 716
B	Tube well with bucket and windlass	569	60	881
C	Jetted well with hand pump	45	105	150
D	Bore hole with hand pump	1 012	1 030	6 338
E	Hand dug well woth hand pump	371	338	1 294
F	Tube well with hand pump	18	9	38
G	Windmill	42	46	305
H	Protected spring	104	5	19
	TOTALS	8 930	4 859	28 741

These figures mean that in the order of 2,230 new water points will have to be constructed annually over the next four years (1997 - 2000) while in the order of 1,225 water points will need to be rehabilitated annually if the 50 percent coverage target is to be achieved.

An informal survey conducted by the CMMU in mid December 1996 revealed that present government, donor and NGO initiatives can support no more than about 1 200 new water points and 650 rehabilitated water points annually. This outlines the scale of the problem and the challenge which lays ahead.

INVESTMENT PRIORITIES

Given the fact that resources are very scarce it is necessary to develop criteria for the elaboration of an investment strategy. In the absence of accurate information, priorities have often been set on the basis of what may appear to be political expediency. Now that more accurate information is available it is possible to define criteria for investment priorities. However, the definition of investment priorities is quite a complex issue. The table overleaf shows the actual coverage (all water points) of each district and province together with the relative ranking of each in terms of this coverage ratio. Luangwa District is placed 1st in the table with coverage at 117 percent and Mporokoso District is at the bottom with coverage at 21 percent.

This might suggest that resources should be directed towards Mporokoso with little or no assistance being given in Luangwa.

In reality a large number of factors must be considered and efforts have to be made to find a balance between them in order to define investment priorities. These include :

• equitable distribution of resources

• efficiency of service provided in relation to the number of people served

• the health status of communities

• rehabilitation instead of new construction

• water availability (hydrogeological/hydrological conditions)

- water use requirements/patterns

- climate/rainfall patterns

- national policies

- national strategies

- politics

- local capacities

- partnerships with government, donor, NGOs, traditional establishments, clubs and communities etc.

- the level of support expected from communities

- the capacity of the community from a community management perspective

- the level of service to be provided, for example this level should not only look at the concept of providing enough water to survive but WASHE services to improve overall health and well-being

Currently the water sector is undergoing a major reform process with new and clearer definitions of roles and responsibilities being elaborated. To support this initiative, the WASHE concept is being promulgated at district level which aims to put in place improved co-operation and co-ordination mechanisms for sector relevant activities based on a people oriented approach. In this way resources can be utilised in much more efficient and effective manner thus helping to address the great challenge which lays ahead.

PROVINCE/DISTRICT	PROVINCE	ACTUAL COVERAGE RATIO % ALL WATER POINTS	RANK
LUANGWA	LK	117	1
MUMBWA	CL	90	2
SAMFYA	LP	90	2
CHAMA	EN	90	2
MANSA	LP	90	2
MONZE	SN	88	3
CHADIZA	EN	79	4
KASEMPA	NW	75	5
NAMWALA	SN	68	6
KAWAMBWA	LP	66	7
KALABO	WN	66	8
LUSAKA	LK	61	9
LUAPULA	LP	60	10
KAPUTA	NT	60	10
MONGU	WN	59	11
SENANGA	WN	59	11
KAFUE	LK	55	12
CHONGWE	LK	55	12
SIAVONGA	SN	51	13
MAZABUKA	SN	49	14
NYIMBA	EN	48	16
WESTERN	WN	48	15
PETAUKE	EN	48	16
LUNDAZI	EN	47	17
SOUTHERN	SN	47	17
MKUSHI	CL	45	18
EASTERN	EN	45	18
MASAITI (COPPERBELT)	CB	44	19
NATIONAL		43	20
SINAZONGWE	SN	43	20
SOLWEZI	NW	42	21
LUKULU	WN	42	21
CHINSALI	NT	42	21
SERENJE	CL	41	22
MUFUMBWE	NW	41	22
NORTH WESTERN	NW	40	23
CENTRAL	CL	38	24
LUWINGU	NT	37	35
MWINILUNGA	NW	36	26
ISOKA	NT	35	27
CHOMA	SN	35	27
SESHEKE	WN	35	27
NAKONDE	NT	35	27
KABOMPO	NW	33	28
KASAMA	NT	33	28
CHIPATA	EN	32	29
MAMBWE	EN	32	29
NORTHERN	NT	30	30
MWENSE	LP	29	31
GWEMBE	SN	28	32
KALOMO	SN	26	33
ZAMBEZI	NW	25	33
CHIBOMBO	CL	24	34
KAPIRI	CL	24	34
CHILUBI	NT	24	34
KAOMA	WN	23	36
NCHELENGE	LP	23	36
MPIKA	NT	23	36
MBALA	NT	22	37
MPOROKOSO	NT	21	38

Table showing the relative ranking of all districts and provinces in terms of actual coverage ratio, all water points.

Use this page to make your own
notes

Notes :

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Section
5

DISTRICT SUMMARY SHEETS

CENTRAL PROVINCE

CHIBOMBO DISTRICT   SUMMARY SHEET
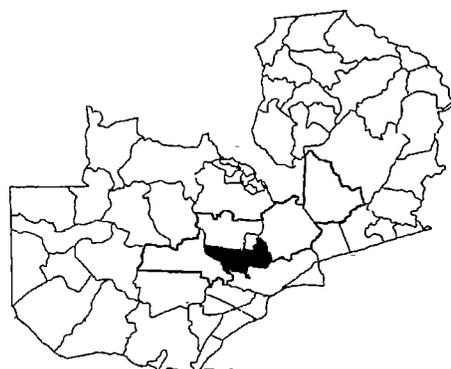
CENTRAL PROVINCE

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	281	100	381
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	132	86	218
E	Hand dug well with a hand pump	62	4	66
F	Tube well with a hand pump	1	1	2
G	Hand dug well or borehole with a windmill	0	1	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	476	192	668

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0 57	57%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			647 005
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1.701	1 457	1.249
Crude coverage ratio, water points in use only	1 967	1:635	1·344
Crude coverage ratio, reliable water points only	1 1694	1.878	1 567
Actual coverage ratio, all water points (%)	24	38	43
Actual coverage ratio, water points in use only (%)	18	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								759 820
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	931	0	0	294	113	6	3	0	1 347
Rehabilitated water points No	100	0	0	86	4	1	1	0	192
Costs, new water points $	2 397 325	0	0	1 631 700	322 050	10 500	19 500	0	4 381 075
Costs rehabilitations $	70 000	0	0	60 200	2 800	700	700	0	134 400
Total Costs $	2 467 325	0	0	1 691 900	324 850	11 200	20 200	0	4 515 475

SUMMARY SHEET

KAPIRI DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	116	36	152
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	39	20	59
E	Hand dug well with a hand pump	37	4	41
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	1	1	2
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	193	61	254

CENTRAL PROVINCE

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0.48	48%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 701	1 . 457	1 : 249
Crude coverage ratio, water points in use only	1 ·967	1 :635	1 :344
Crude coverage ratio, reliable water points only	1 ·1694	1 878	1 .567
Actual coverage ratio, all water points (%)	24	38	43
Actual coverage ratio, water points in use only (%)	18	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	36	0	0	20	4	0	1	0	61
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	25 200	0	0	14 000	2 800	0	700	0	42 700
Total Costs $	25 200	0	0	14 000	2 800	0	700	0	42 700

MKUSHI DISTRICT

CENTRAL PROVINCE

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	101	26	127
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	3	0	3
D	Borehole with a hand pump	79	17	96
E	Hand dug well with a hand pump	79	18	97
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	262	61	323

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0 54	54%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			128 515
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 398	1 : 457	1 : 249
Crude coverage ratio, water points in use only	1 491	1 .635	1 :344
Crude coverage ratio, reliable water points only	1 739	1 878	1 -567
Actual coverage ratio, all water points (%)	45	38	43
Actual coverage ratio, water points in use only (%)	37	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									151 504
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	72	0	1	17	17	0	0	0	107
Rehabilitated water points No	26	0	0	17	18	0	0	0	61
Costs, new water points $	185 400	0	1 700	94 350	48 450	0	0	0	329 900
Costs rehabilitations $	18 200	0	0	11 900	12 600	0	0	0	42 700
Total Costs $	203 600	0	1 700	106 250	61 050	0	0	0	372 600

SUMMARY SHEET

MUMBWA DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	349	123	472
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	123	86	209
E	Hand dug well with a hand pump	73	7	80
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	3	10	13
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	548	226	774

CENTRAL PROVINCE

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0.50	50%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			145 248
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1:188	1:457	1:249
Crude coverage ratio, water points in use only	1:265	1:635	1:344
Crude coverage ratio, reliable water points only	1:377	1:878	1:567
Actual coverage ratio, all water points (%)	90	38	43
Actual coverage ratio, water points in use only (%)	63	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 00 0									171 889
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	123	0	0	86	7	0	10	0	226
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	86 100	0	0	60 200	4 900	0	7 000	0	158 200
Total Costs $	86 100	0	0	60 200	4 900	0	7 000	0	158 200

SERENJE DISTRICT

CENTRAL PROVINCE

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	30	9	39
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	40	48	88
E	Hand dug well with a hand pump	84	39	123
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	154	96	250

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0 47	47%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			116 913
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1.468	1.457	1.249
Crude coverage ratio, water points in use only	1 759	1 635	1.344
Crude coverage ratio, reliable water points only	1.991	1 878	1·567
Actual coverage ratio, all water points (%)	41	38	43
Actual coverage ratio, water points in use only (%)	25	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								134 160
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	31	0	0	30	42	0	0	0	103
Rehabilitated water points No	9	0	0	48	39	0	0	0	96
Costs, new water points $	79 825	0	0	166 500	119 700	0	0	0	366 025
Costs rehabilitations $	6 300	0	0	33 600	27 300	0	0	0	67 200
Total Costs $	86 125	0	0	200 100	147 000	0	0	0	433 225

COPPERBELT
PROVINCE

MASAITI DISTRICT

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	412	92	504
B	Tube well with bucket and windlass	9	2	11
C	Jetted well with a hand pump	0	1	1
D	Borehole with a hand pump	66	35	101
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	487	130	617

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0 36	36%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			219 570
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1:356	1·356	1·249
Crude coverage ratio, water points in use only	1 451	1·451	1 344
Crude coverage ratio, reliable water points only	1 989	1.989	1:567
Actual coverage ratio, all water points (%)	44	44	43
Actual coverage ratio, water points in use only (%)	35	35	29

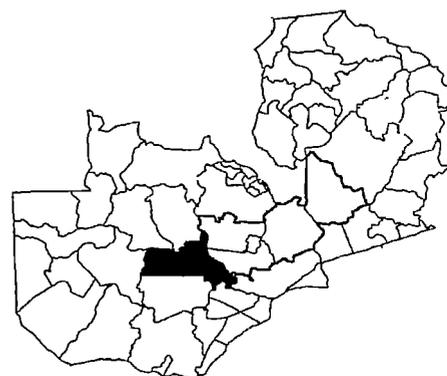## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	221	13	0	8	0	0	0	0	242
Rehabilitated water points No	92	2	1	35	0	0	0	0	130
Costs, new water points $	569 075	19 175	0	44 400	0	0	0	0	632 650
Costs rehabilitations $	64 400	1 400	700	24 500	0	0	0	0	91 000
Total Costs $	633 475	20 575	700	68 900	0	0	0	0	723 650

EASTERN
PROVINCE

CHADIZA DISTRICT   SUMMARY SHEET
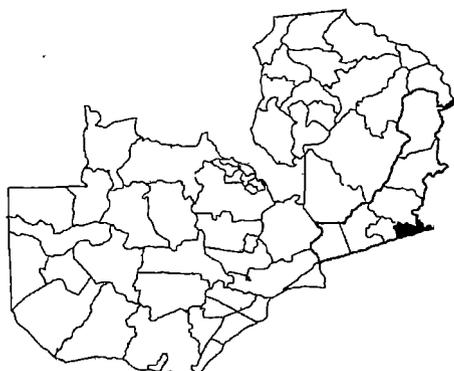
TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	224	92	316
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	17	33	50
E	Hand dug well with a hand pump	3	3	6
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	244	128	372

EASTERN PROVINCE

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0 34	34%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			73 908
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 199	1 · 347	1 249
Crude coverage ratio, water points in use only	1 :303	1 509	1 :344
Crude coverage ratio, reliable water points only	1 :591	1 :775	1 :567
Actual coverage ratio, all water points (%)	79	45	43
Actual coverage ratio, water points in use only (%)	51	31	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									84 811
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	92	0	0	33	3	0	0	0	128
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	64 400	0	0	23 100	2 100	0	0	0	89 600
Total Costs $	64 400	0	0	23 100	2 100	0	0	0	89 600

SUMMARY SHEET

CHAMA DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	202	136	338
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	5	7	12
E	Hand dug well with a hand pump	1	5	6
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	1	0	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	209	148	357

EASTERN PROVINCE

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0.31	31%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			60 714
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 70	1.347	1.249
Crude coverage ratio, water points in use only	1:290	1:509	1:344
Crude coverage ratio, reliable water points only	1.547	1:775	1:567
Actual coverage ratio, all water points (%)	90	45	43
Actual coverage ratio, water points in use only (%)	52	31	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								70 754
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	136	0	0	7	5	0	0	0	148
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	95 200	0	0	4 900	3 500	0	0	0	103 600
Total Costs $	95 200	0	0	4 900	3 500	0	0	0	103 600

CHIPATA DISTRICT

EASTERN PROVINCE

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	328	105	433
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	72	11	83
E	Hand dug well with a hand pump	11	5	16
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	411	121	532

RELIABILITY FACTOR

RELIABILITY FACTOR (ALL WATER POINTS)	0.55	55%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			292 243
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 493	1 347	1 . 249
Crude coverage ratio, water points In use only	1 .638	1 509	1 ·344
Crude coverage ratio, reliable water points only	1 1001	1 775	1 567
Actual coverage ratio, all water points (%)	32	45	43
Actual coverage ratio, water points in use only (%)	25	31	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									336 654
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	440	0	0	35	7	0	0	0	482
Rehabilitated water points No	105	0	0	11	5	0	0	0	121
Costs, new water points $	1 133 000	0	0	194 250	19 950	0	0	0	1 347 200
Costs rehabilitations $	73 500	0	0	7 700	3 500	0	0	0	84 700
Total Costs $	1 206 500	0	0	201 950	23 450	0	0	0	1 431 900

SUMMARY SHEET

KATETE DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	183	58	241
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	32	48	80
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	215	106	321

EASTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.35	35%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			165 439
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1·515	1.347	1 249
Crude coverage ratio, water points in use only	1.769	1:509	1 344
Crude coverage ratio, reliable water points only	1 1464	1.775	1 567
Actual coverage ratio, all water points (%)	32	45	43
Actual coverage ratio, water points in use only (%)	20	31	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									192 797
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	241	0	0	40	0	0	0	0	281
Rehabilitated water points No	58	0	0	48	0	0	0	0	106
Costs, new water points $	620 575	0	0	222 000	0	0	0	0	842 575
Costs rehabilitations $	40 800	0	0	33 600	0	0	0	0	74 200
Total Costs $	661 175	0	0	255 600	0	0	0	0	916 775

LUNDAZI DISTRICT

EASTERN PROVINCE

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	390	178	568
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	28	29	57
E	Hand dug well with a hand pump	1	3	4
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	1	1
P	Private well (usually unprotected)	0	0	0
	TOTALS	419	211	630

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.50	50%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			207 653
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 . 330	1 347	1 : 249
Crude coverage ratio, water points in use only	1 ·496	1 509	1 344
Crude coverage ratio, reliable water points only	1 657	1 :775	1 ·567
Actual coverage ratio, all water points (%)	47	45	43
Actual coverage ratio, water points in use only (%)	31	31	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								243 860	
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	165	0	0	0	0	0	0	1	166
Rehabilitated water points No	178	0	0	29	3	0	0	1	211
Costs, new water points $	424 875	0	0	0	0	0	0	150	425 025
Costs rehabilitations $	124 600	0	0	20 300	2 100	0	0	700	147 700
Total Costs $	549 475	0	0	20 300	2 100	0	0	50	572 725

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

MAMBWE DISTRICT

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	46	14	60
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	1	0	1
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	47	14	61

EASTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.43	43%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 493	1 : 347	1 :249
Crude coverage ratio, water points in use only	1 :638	1 :509	1 :344
Crude coverage ratio, reliable water points only	1 :1001	1 :775	1 :567
Actual coverage ratio, all water points (%)	32	45	43
Actual coverage ratio, water points in use only (%)	25	31	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	14	0	0		0	0	0	0	14
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	9 800	0	0	0	0	0	0	0	9 800
Total Costs $	9 800	0	0	0	0	0	0	0	9 800

NYIMBA DISTRICT   SUMMARY SHEET

EASTERN PROVINCE

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	112	27	139
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	28	9	37
E	Hand dug well with a hand pump	6	0	6
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	146	36	182

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 62	62%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 . 334	1 347	1 249
Crude coverage ratio, water points in use only	1 :489	1 509	1 :344
Crude coverage ratio, reliable water points only	1 :917	1 ·775	1 567
Actual coverage ratio, all water points (%)	48	45	43
Actual coverage ratio, water points in use only (%)	33	31	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	27	0	0	9	0	0	0	0	36
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	18 900	0	0	6 300	0	0	0	0	25 200
Total Costs $	18 900	0	0	6 300	0	0	0	0	25 200

SUMMARY SHEET

PETAUKE DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	406	214	620
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	83	46	129
E	Hand dug well with a hand pump	7	2	9
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	1	0	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	497	262	759

EASTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.45	45%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 ·			314 557
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 334	1 : 347	1 ·249
Crude coverage ratio, water points in use only	1 ·489	1 .509	1 344
Crude coverage ratio, reliable water points only	1 :917	1 775	1 :567
Actual coverage ratio, all water points (%)	48	45	43
Actual coverage ratio, water points in use only (%)	33	31	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								377 995
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	257	0	0	1	0	0	0	0	258
Rehabilitated water points No	214	0	0	46	2	0	0	0	262
Costs, new water points $	661 775	0	0	5 550	0	0	0	0	667 325
Costs rehabilitations $	149 800	0	0	32 200	1 400	0	0	0	183 400
Total Costs $	811 575	0	0	37 750	1 400	0	0	0	850 725

Use this page to make your own notes

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LUAPULA
PROVINCE

KAWAMBWA DISTRICT   SUMMARY SHEET
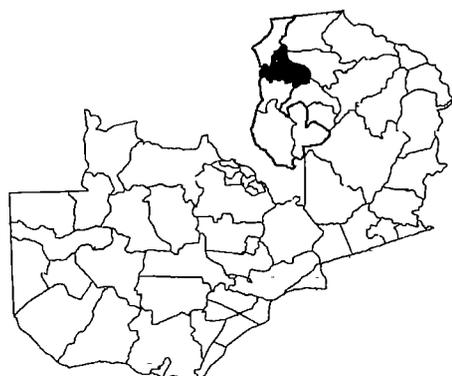
TECHNOLOGY DISTRIBUTION

LUAPULA PROVINCE

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	58	59	117
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	9	17	26
E	Hand dug well with a hand pump	13	57	70
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	742	207	949
	TOTALS	822	340	1 162

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.40	40%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			84 008
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1·72	1:71	1.249
Crude coverage ratio, water points in use only	1:102	1·90	1·344
Crude coverage ratio, reliable water points only	1 183	1 147	1 567
Actual coverage ratio, all water points (%)	66	60	43
Actual coverage ratio, water points in use only (%)	33	41	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									93 455
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	54	0	0	3	7	0	0	0	64
Rehabilitated water points No	59	0	0	17	57	0	0	0	133
Costs, new water points $	139 050	0	0	16 650	19 950	0	0	0	175 650
Costs rehabilitations $	41 300	0	0	11 900	39 900	0	0	0	93 100
Total Costs $	180 350	0	0	28 550	59 850	0	0	0	268 750

SUMMARY SHEET

MANSA DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	127	62	189
B	Tube well with bucket and windlass	1	0	1
C	Jetted well with a hand pump	0	1	1
D	Borehole with a hand pump	4	10	14
E	Hand dug well with a hand pump	13	35	48
F	Tube well with a hand pump	3	0	3
G	Hand dug well or borehole with a windmill	6	1	7
H	Protected spring	5	3	8
P	Private well (usually unprotected)	2 725	481	3 206
	TOTALS	2 884	593	3 477
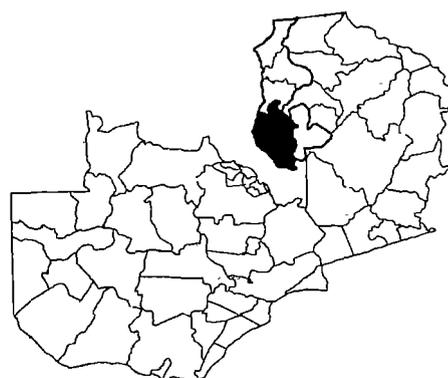
LUAPULA PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 37	37%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			120 240
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 35	1 71	1 :249
Crude coverage ratio, water points in use only	1 ·42	1 ·90	1 ·344
Crude coverage ratio, reliable water points only	1 :94	1 .174	1 567
Actual coverage ratio, all water points (%)	90	60	43
Actual coverage ratio, water points in use only (%)	66	41	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									132 722
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	120	1	0	3	11	4	2	12	153
Rehabilitated water points No	62	0	1	10	35	0	1	3	112
Costs, new water points $	309 000	1 475	0	16 650	31 350	7 000	13 000	1 800	380 275
Costs rehabilitations $	43 400	0	700	7 000	24 500	0	700	2 100	78 400
Total Costs $	352 400	1 475	700	23 650	55 850	7 000	13 700	3 900	458 675

MWENSE DISTRICT   SUMMARY SHEET

LUAPULA PROVINCE

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	52	29	81
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	3	5	8
E	Hand dug well with a hand pump	4	9	13
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	11	0	11
P	Private well (usually unprotected)	324	76	400
	TOTALS	394	119	513

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 35	35%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			86 623
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 ·169	1 : 71	1 . 249
Crude coverage ratio, water points in use only	1 :220	1 :90	1 :344
Crude coverage ratio, reliable water points only	1 476	1 :174	1 .567
Actual coverage ratio, all water points (%)	29	60	43
Actual coverage ratio, water points in use only (%)	19	41	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									94 132
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	144	0	0	9	14	0	0	35	202
Rehabilitated water points No	29	0	0	5	9	0	0	0	43
Costs, new water points $	370 800	0	0	49 950	39 900	0	0	5 250	465 900
Costs rehabilitations $	20 300	0	0	3 500	6 300	0	0	0	30 100
Total Costs $	391 100	0	0	53 450	46 200	0	0	5 250	496 000

SUMMARY SHEET

NCHELENGE DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	59	20	79
B	Tube well with bucket and windlass	0	1	1
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	10	11	21
E	Hand dug well with a hand pump	3	9	12
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	1	1
H	Protected spring	12	0	12
P	Private well (usually unprotected)	252	99	351
	TOTALS	336	141	477
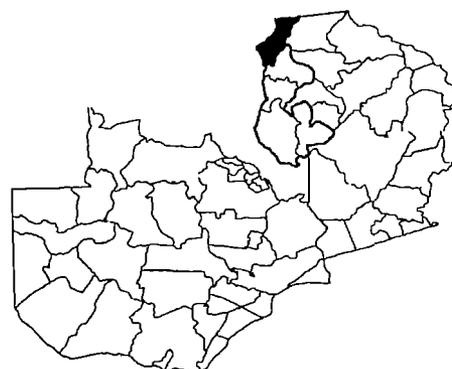
LUAPULA PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.40	40%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			118 032
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 247	1 : 71	1 : 249
Crude coverage ratio, water points in use only	1 :351	1 :90	1 :344
Crude coverage ratio, reliable water points only	1 ·625	1 :174	1 :567
Actual coverage ratio, all water points (%)	23	60	43
Actual coverage ratio, water points in use only (%)	15	41	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									134 922
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	203	4	0	35	20	0	2	52	316
Rehabilitated water points No	20	1	0	11	9	0	1	0	42
Costs, new water points $	522 725	5 900	0	194 250	57 000	0	13 000	7 800	800 675
Costs rehabilitations $	14 000	700	0	7 700	6 300	0	700	0	29 400
Total Costs $	536 725	6 600	0	201 950	63 300	0	13 700	7 800	830 075

SAMFYA DISTRICT
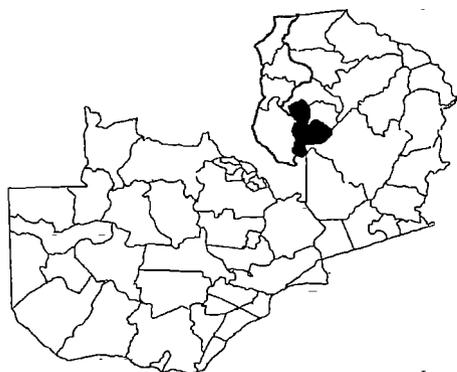
LUAPULA PROVINCE

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	251	87	338
B	Tube well with bucket and windlass	0	10	10
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	14	4	18
E	Hand dug well with a hand pump	28	33	61
F	Tube well with a hand pump	0	3	3
G	Hand dug well or borehole with a windmill	0	1	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	937	110	1 047
	TOTALS	1 230	248	1 478

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 55	55%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			98 703
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 .67	1 · 71	1 : 249
Crude coverage ratio, water points in use only	1 ·80	1 :90	1 .344
Crude coverage ratio, reliable water points only	1 122	1 174	1 .567
Actual coverage ratio, all water points (%)	90	60	43
Actual coverage ratio, water points in use only (%)	66	41	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									101 496
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	2	0	0	0	1	0	0	3
Rehabilitated water points No	87	10	0	4	33	3	1	0	138
Costs, new water points $	0	2 950	0	0	0	1 750	0	0	4 700
Costs rehabilitations $	60 900	7 000	0	2 800	23 100	2 100	700	0	96 600
Total Costs $	60 900	9 950	0	2 800	23 100	3 850	700	0	101 300

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LUSAKA
PROVINCE

CHONGWE DISTRICT   SUMMARY SHEET

LUSAKA PROVINCE

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	132	85	217
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	86	25	111
E	Hand dug well with a hand pump	5	0	5
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	1	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	225	111	336

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 46	46%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			174 170
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 312	1 281	1 : 249
Crude coverage ratio, water points in use only	1 :466	1 :440	1 :344
Crude coverage ratio, reliable water points only	1 1124	1 :597	1 567
Actual coverage ratio, all water points (%)	55	61	43
Actual coverage ratio, water points in use only (%)	37	40	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								199 093
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	61	0	0	0	0	0	0	2	63
Rehabilitated water points No	85	0	0	25	0	0	1	0	111
Costs, new water points $	157 075	0	0	0	0	0	0	300	157 375
Costs rehabilitations $	59 500	0	0	17 500	0	0	700	0	77 700
Total Costs $	216 575	0	0	17 500	0	0	700	300	235 075

SUMMARY SHEET

KAFUE DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	55	52	107
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	90	19	109
E	Hand dug well with a hand pump	3	1	4
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	1	1	2
H	Protected spring	2	0	2
P	Private well (usually unprotected)	0	0	0
	TOTALS	149	73	222

LUSAKA PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.50	50%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1.312	1.281	1:249
Crude coverage ratio, water points in use only	1:466	1 440	1:344
Crude coverage ratio, reliable water points only	1·1124	1 597	1:567
Actual coverage ratio, all water points (%)	55	61	43
Actual coverage ratio, water points in use only (%)	37	40	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	52	0	0	19	1	0	1	0	73
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	36 400	0	0	13 300	700	0	700	0	51 100
Total Costs $	36 400	0	0	13 300	700	0	700	0	51 100

LUANGWA DISTRICT   SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	31	45	76
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	31	17	48
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	1	0	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	63	62	125

LUSAKA PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 45	45%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			18 048
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 · 144	1 : 281	1 . 249
Crude coverage ratio, water points in use only	1 ·286	1 :440	1 :344
Crude coverage ratio, reliable water points only	1 ·322	1 :597	1 :567
Actual coverage ratio, all water points (%)	117	61	43
Actual coverage ratio, water points in use only (%)	61	40	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								20 710
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	45	0	0	17	0	0	0	0	62
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	31 500	0	0	11 900	0	0	0	0	43 400
Total Costs $	31 500	0	0	11 900	0	0	0	0	43 400

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NORTH WESTERN PROVINCE

KABOMPO DISTRICT   SUMMARY SHEET
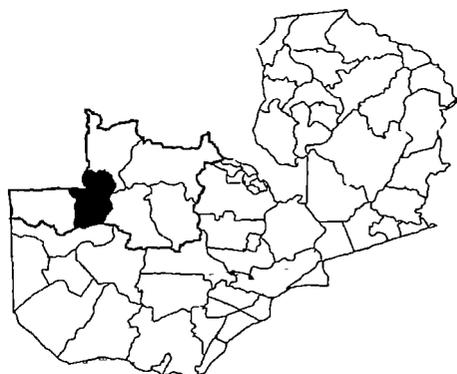
TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	51	47	98
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	3	9	12
E	Hand dug well with a hand pump	3	4	7
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	57	60	117

**NORTH-WESTERN
PROVINCE**

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 32	32%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			56 450
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 482	1 : 398	1 · 249
Crude coverage ratio, water points in use only	1 .990	1 589	1 .344
Crude coverage ratio, reliable water points only	1 :1486	1 ·767	1 .567
Actual coverage ratio, all water points (%)	33	40	43
Actual coverage ratio, water points in use only (%)	16	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									63 043
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	78	0	0	4	2	0	0	0	84
Rehabilitated water points No	47	0	0	9	4	0	0	0	60
Costs, new water points $	200 850	0	0	22 200	5 700	0	0	0	228 750
Costs rehabilitations $	32 900	0	0	6 300	2 800	0	0	0	42 000
Total Costs $	233 750	0	0	28 500	8 500	0	0	0	270 750

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

KASEMPA DISTRICT

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	140	17	157
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	12	3	15
E	Hand dug well with a hand pump	1	0	1
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	1	1
H	Protected spring	1	0	1
P	Private well (usually unprotected)	0	0	0
	TOTALS	154	21	175
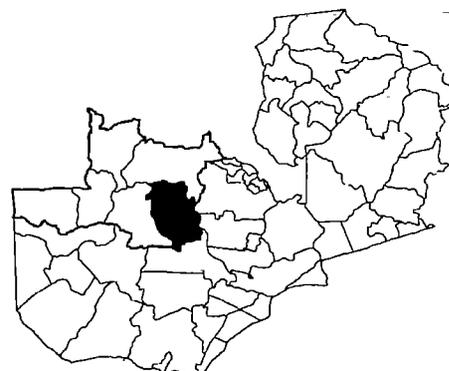
NORTH-WESTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.54	54%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :	.		36 626
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 209	1 . 398	1 : 249
Crude coverage ratio, water points in use only	1 :238	1 :589	1 ·344
Crude coverage ratio, reliable water points only	1 :386	1 .767	1 :567
Actual coverage ratio, all water points (%)	74	40	43
Actual coverage ratio, water points in use only (%)	65	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									39 490
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	17	0	0	3	0	0	1	0	21
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	11 900	0	0	2 100	0	0	700	0	14 700
Total Costs $	11 900	0	0	2 100	0	0	700	0	14 700

MUFUMBWE DISTRICT   SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

NORTH-WESTERN
PROVINCE

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	48	25	73
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	1	1	2
E	Hand dug well with a hand pump	1	1	2
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	50	27	77

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 43	43%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			28 746
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 373	1 · 398	1 : 249
Crude coverage ratio, water points in use only	1 .575	1 ·589	1 ·344
Crude coverage ratio, reliable water points only	1 :871	1 :767	1 :567
Actual coverage ratio, all water points (%)	41	40	43
Actual coverage ratio, water points in use only (%)	26	27	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									41 327
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	58	0	0	1	1	0	0	0	60
Rehabilitated water points No	25	0	0	1	1	0	0	0	27
Costs, new water points $	149 350	0	0	5 550	2 850	0	0	0	157 750
Costs rehabilitations $	17 500	0	0	700	700	0	0	0	18 900
Total Costs $	166 850	0	0	6 250	3 550	0	0	0	176 650

SUMMARY SHEET   **MWINILUNGA DISTRICT**

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	89	92	181
B	Tube well with bucket and windlass	5	0	5
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	6	6	12
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	100	98	198
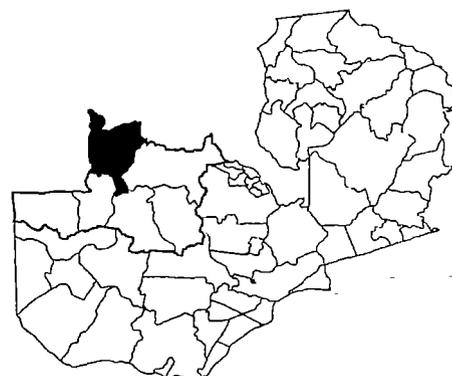
NORTH-WESTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.36	36%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			83 159
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 420	1 398	1 249
Crude coverage ratio, water points in use only	1:832	1,589	1:344
Crude coverage ratio, reliable water points only	1.1155	1·767	1·567
Actual coverage ratio, all water points (%)	36	40	43
Actual coverage ratio, water points in use only (%)	18	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									88 960
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	90	6	0	1	0	0	0	0	97
Rehabilitated water points No	92	0	0	6	0	0	0	0	98
Costs, new water points $	231 750	8 850	0	5 550	0	0	0	0	246 150
Costs rehabilitations $	64 400	0	0	4 200	0	0	0	0	68 600
Total Costs $	296 150	8 850	0	9 750	0	0	0	0	314 750

SOLWEZI DISTRICT   SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

NORTH-WESTERN
PROVINCE

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	180	22	202
B	Tube well with bucket and windlass	5	0	5
C	Jetted well with a hand pump	31	1	32
D	Borehole with a hand pump	38	6	44
E	hand dug well with a hand pump	9	4	13
F	Tube well with a hand pump	0	1	1
G	Hand dug well or borehole with a windmill	0	2	2
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	263	36	299

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 82	82%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			115 699
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 · 387	1 398	1 : 249
Crude coverage ratio, water points in use only	1 440	1 :589	1 ·344
Crude coverage ratio, reliable water points only	1 470	1 767	1 567
Actual coverage ratio, all water points (%)	42	40	43
Actual coverage ratio, water points in use only (%)	37	27	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								130 220
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	91	6	3	4	1	1	0	0	106
Rehabilitated water points No	22	0	1	6	4	1	2	0	36
Costs, new water points $	234 325	8 850	5 100	22 200	2 850	1 750	0	0	275 075
Costs rehabilitations $	15 400	0	700	4 200	2 800	700	1 400	0	25 200
Total Costs $	249 725	8 850	5 800	26 400	5 650	2 450	1 400	0	300 275

SUMMARY SHEET   **ZAMBEZI DISTRICT**

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	32	65	97
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	1	6	7
E	Hand dug well with a hand pump	1	2	3
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	34	73	107
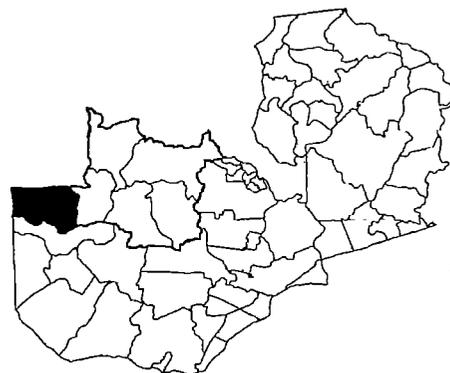
NORTH-WESTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 20	20%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			66 656
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 623	1 . 398	1 : 249
Crude coverage ratio, water points in use only	1 :1960	1 ·589	1 344
Crude coverage ratio, reliable water points only	1 ·3174	1 :767	1 .567
Actual coverage ratio, all water points (%)	25	40	43
Actual coverage ratio, water points in use only (%)	8	27	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								69 914
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	114	0	0	4	2	0	0	0	120
Rehabilitated water points No	65	0	0	6	2	0	0	0	73
Costs, new water points $	293 550	0	0	22 200	5 700	0	0	0	321 450
Costs rehabilitations $	45 500	0	0	4 200	1 400	0	0	0	51 100
Total Costs $	339 050	0	0	26 400	7 100	0	0	0	372 550

Use this page to make your own notes

Notes :

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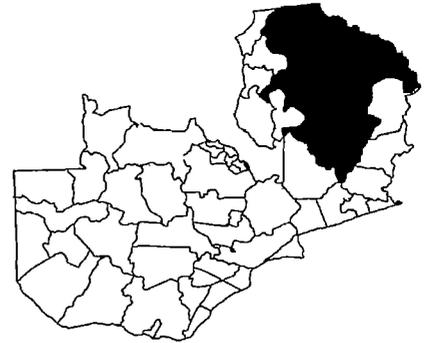
NORTHERN
PROVINCE

CHILUBI DISTRICT   SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	23	14	37
B	Tube well with bucket and windlass	1	0	1
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	0	0	0
E	Hand dug well with a hand pump	0	3	3
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	1	1
P	Private well (usually unprotected)	17	2	19
	TOTALS	41	20	61

NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.20	20%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			28 415
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 466	1 208	1 . 249
Crude coverage ratio, water points in use only	1 .693	1 :299	1 ·344
Crude coverage ratio, reliable water points only	1 ·2368	1 .512	1 .567
Actual coverage ratio, all water points (%)	24	30	43
Actual coverage ratio, water points in use only (%)	14	17	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								23 242
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	31	2	0	0	1	0	0	2	36
Rehabilitated water points No	14	0	0	0	3	0	0	1	18
Costs, new water points $	79 825	2 950	0	0	2 850	0	0	300	85 925
Costs rehabilitations $	9 800	0	0	0	2 100	0	0	700	12 600
Total Costs $	89 625	2 950	0	0	4 950	0	0	1 000	98 525

SUMMARY SHEET

CHINSALI DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	31	72	103
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	0	1	1
E	Hand dug well with a hand pump	2	18	20
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	4	1	5
H	Protected spring	0	0	0
P	Private well (usually unprotected)	349	96	445
	TOTALS	386	188	574
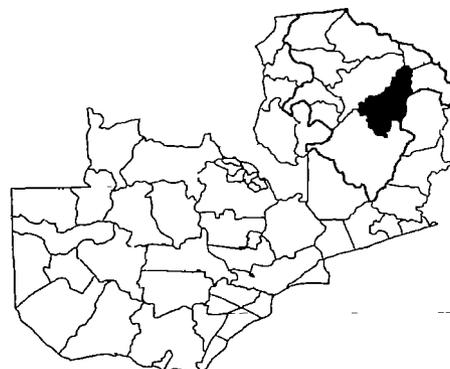
NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 42	42%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			71 007
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 124	1 . 208	1 . 249
Crude coverage ratio, water points in use only	1 .184	1 299	1 344
Crude coverage ratio, reliable water points only	1 :295	1 .512	1 :567
Actual coverage ratio, all water points (%)	42	30	43
Actual coverage ratio, water points in use only (%)	18	17	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									67 660
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	77	0	0	0	6	0	2	0	85
Rehabilitated water points No	72	0	0	1	18	0	1	0	92
Costs, new water points $	198 275	0	0	0	17 100	0	13 000	0	228 375
Costs rehabilitations $	50 400	0	0	700	12 600	0	700	0	64 400
Total Costs $	248 675	0	0	700	29 700	0	13 700	0	292 775

ISOKA DISTRICT   SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	35	37	72
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	7	7	14
E	Hand dug well with a hand pump	1	6	7
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	348	112	460
	TOTALS	391	162	553

NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 30	30%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			197 772
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1·181	1. 208	1·249
Crude coverage ratio, water points in use only	1:849	1:299	1:344
Crude coverage ratio, reliable water points only	1 1191	1 512	1 567
Actual coverage ratio, all water points (%)	35	30	43
Actual coverage ratio, water points in use only (%)	24	17	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									294 859
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	552	28	0	22	9	0	1	0	612
Rehabilitated water points No	37	0	0	7	6	0	0	0	50
Costs, new water points $	1 421 400	41 300	0	122 100	25 650	0	6 500	0	1 616 950
Costs rehabilitations $	25 900	0	0	4 900	4 200	0	0	0	35 000
Total Costs $	1 447 300	41 300	0	127 000	29 850	0	6 500	0	1 651 950

SUMMARY SHEET

KAPUTA DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	17	44	61
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	4	6	10
E	Hand dug well with a hand pump	0	2	2
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	10	2	12
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	2	2
	TOTALS	31	56	87
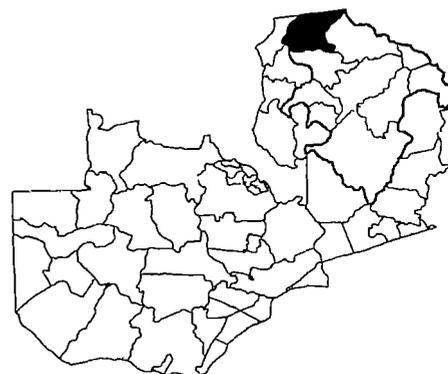
NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 22	22%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			23 426
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 269	1 208	1 :249
Crude coverage ratio, water points in use only	1 :756	1 :299	1 ·344
Crude coverage ratio, reliable water points only	1 .1233	1 :512	1 .567
Actual coverage ratio, all water points (%)	60	30	43
Actual coverage ratio, water points in use only (%)	23	17	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									15 166
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	44	0	0	6	2	0	2	0	54
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	30 800	0	0	4 200	1 400	0	1 400	0	37 800
Total Costs $	30 800	0	0	4 200	1 400	0	1 400	0	37 800

KASAMA DISTRICT

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	202	115	317
B	Tube well with bucket and windlass	57	26	83
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	11	10	21
E	Hand dug well with a hand pump	6	21	27
F	Tube well with a hand pump	0	1	1
G	Hand dug well or borehole with a windmill	2	11	13
H	Protected spring	0	0	0
P	Private well (usually unprotected)	1 266	281	1 547
	TOTALS	1 544	465	2 009

NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.50	50%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :		-	303 986
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 151	1 ·208	1 : 249
Crude coverage ratio, water points in use only	1 :197	1 .299	1 .344
Crude coverage ratio, reliable water points only	1 303	1 :512	1 ·567
Actual coverage ratio, all water points (%)	33	30	43
Actual coverage ratio, water points in use only (%)	21	17	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000	-							508 037	
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	845	373	0	37	47	4	23	0	1 329
Rehabilitated water points No	115	26	0	10	21	1	11	0	184
Costs, new water points $	2 175 875	550 175	0	205 350	133 950	7 000	149 500	0	3 221 850
Costs rehabilitations $	80 500	18 200	0	7 000	14 700	700	7 700	0	128 800
Total Costs $	2 256 375	567 375	0	212 350	148 650	7 700	157 200	0	3 350 650

SUMMARY SHEET

LUWINGU DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	27	40	67
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	0	3	3
E	Hand dug well with a hand pump	0	12	12
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	1	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	102	62	164
	TOTALS	129	118	247
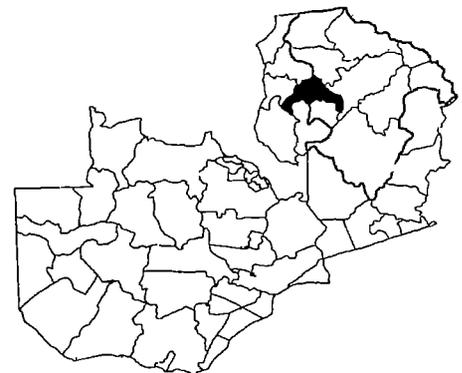
NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.19	19%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			44 665
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 181	1 : 208	1 : 249
Crude coverage ratio, water points in use only	1 .346	1 299	1 ·344
Crude coverage ratio, reliable water points only	1 :950	1 :512	1 .567
Actual coverage ratio, all water points (%)	37	30	43
Actual coverage ratio, water points in use only (%)	14	17	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								36 057
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	30	0	0	0	1	0	0	0	31
Rehabilitated water points No	40	0	0	3	12	0	1	0	56
Costs, new water points $	77 250	0	0	0	2 850	0	0	0	80 100
Costs rehabilitations $	28 000	0	0	2 100	8 400	0	700	0	39 200
Total Costs $	105 250	0	0	2 100	11 250	0	700	0	119 300

MBALA DISTRICT   SUMMARY SHEET
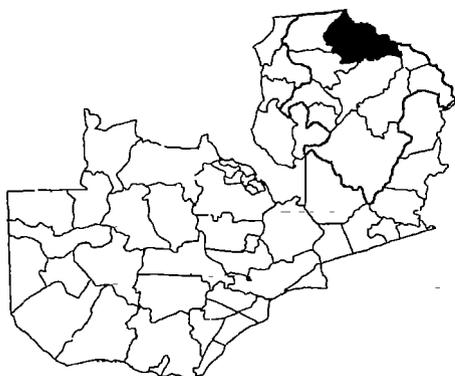
TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	94	72	166
B	Tube well with bucket and windlass	19	3	22
C	Jetted well with a hand pump	1	4	5
D	Borehole with a hand pump	1	6	7
E	Hand dug well with a hand pump	6	7	13
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	1	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	162	71	233
	TOTALS	283	164	447

NORTHERN PROVINCE

RELIABILITY FACTORS

| RELIABILITY FACTOR (ALL WATER POINTS)	0.34	34%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			166 521
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 373	1 : 208	1 : 249
Crude coverage ratio, water points in use only	1.588	1·299	1 :344
Crude coverage ratio, reliable water points only	1 :1110	1·512	1 :567
Actual coverage ratio, all water points (%)	22	30	43
Actual coverage ratio, water points in use only (%)	13	17	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									204 730
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	363	83	7	10	18	0	1	0	482
Rehabilitated water points No	72	3	4	6	7	0	1	0	93
Costs, new water points $	934 725	122 425	11 900	55 500	51 300	0	6 500	0	1 182 350
Costs rehabilitations $	50 400	2 100	2 800	4 200	4 900	0	700	0	65 100
Total Costs $	985 125	124 525	14 700	59 700	56 200	0	7 200	0	1 247 450

SUMMARY SHEET

MPIKA DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	83	116	199
B	Tube well with bucket and windlass	0	6	6
C	Jetted well with a hand pump	0	1	1
D	Borehole with a hand pump	3	5	8
E	Hand dug well with a hand pump	3	12	15
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	2	0	2
H	Protected spring	0	0	0
P	Private well (usually unprotected)	144	38	182
	TOTALS	235	178	413

NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.35	35%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			174 601
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 . 423	1 . 208	1 249
Crude coverage ratio, water points in use only	1:743	1.299	1:344
Crude coverage ratio, reliable water points only	1.1204	1·512	1:567
Actual coverage ratio, all water points (%)	23	30	43
Actual coverage ratio, water points in use only (%)	10	17	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									263 151
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	557	28	2	15	28	0	4	0	634
Rehabilitated water points No	116	6	1	5	12	0	0	0	140
Costs, new water points $	1 434 275	41 300	3 400	83 250	79 800	0	26 000	0	1 668 025
Costs rehabilitations $	81 200	4 200	700	3 500	8 400	0	0	0	98 000
Total Costs $	1 515 475	45 500	4 100	86 750	88 200	0	26 000	0	1 766 025

MPOROKOSO DISTRICT   SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	22	25	47
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	1	1	2
E	Hand dug well with a hand pump	4	6	10
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	106	74	180
	TOTALS	133	106	239

NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.29	29%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 ·			62 322
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 . 261	1 : 208	1 : 249
Crude coverage ratio, water points in use only	1 :469	1 :299	1 ·344
Crude coverage ratio, reliable water points only	1 890	1 512	1 .567
Actual coverage ratio, all water points (%)	21	30	43
Actual coverage ratio, water points in use only (%)	10	17	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									74 891
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	152	0	0	4	22	0	0	0	178
Rehabilitated water points No	25	0	0	1	6	0	0	0	32
Costs, new water points $	391 400	0	0	22 200	62 700	0	0	0	476 300
Costs rehabilitations $	17 500	0	0	700	4 200	0	0	0	22 400
Total Costs $	408 900	0	0	22 900	66 900	0	0	0	498 700

SUMMARY SHEET

NAKONDE DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	179	72	251
B	Tube well with bucket and windlass	6	3	9
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	4	3	7
E	Hand dug well with a hand pump	0	2	2
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	1	0	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	227	40	267
	TOTALS	417	120	537

NORTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.45	45%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			-
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1:181	1:208	1·249
Crude coverage ratio, water points in use only	1:849	1:299	1 344
Crude coverage ratio, reliable water points only	1.1191	1:512	1 567
Actual coverage ratio, all water points (%)	35	30	43
Actual coverage ratio, water points in use only (%)	24	17	29

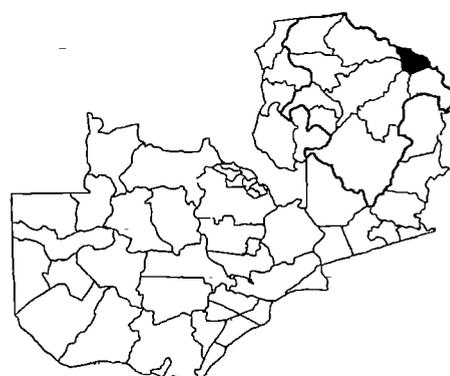## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									-
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	72	3	0	3	2	0	0	0	80
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	50 400	2 100	0	2 100	1 400	0	0	0	56 000
Total Costs $	50 400	2 100	0	2 100	1 400	0	0	0	56 000

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SOUTHERN PROVINCE

CHOMA DISTRICT

SUMMARY SHEET
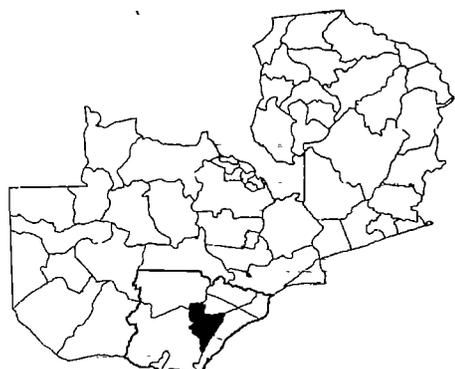
TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	130	54	184
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	95	22	117
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	1	1
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	225	77	302

SOUTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 45	45%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			145 816
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 · 483	1 · 364	1 · 249
Crude coverage ratio, water points in use only	1 .648	1 568	1 344
Crude coverage ratio, reliable water points only	1 1064	1 943	1 567
Actual coverage ratio, all water points (%)	35	47	43
Actual coverage ratio, water points in use only (%)	26	30	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

| ESTIMATED RURAL POPULATION 2 000								159 701
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	140	0	0	38	0	0	0	0	178
Rehabilitated water points No	54	0	0	22	0	0	1	0	77
Costs, new water points $	360 500	0	0	210 900	0	0	0	0	571 400
Costs rehabilitations $	37 800	0	0	15 400	0	0	700	0	53 900
Total Costs $	398 300	0	0	226 300	0	0	700	0	625 300

SUMMARY SHEET

GWEMBE DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	17	15	32
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	32	7	39
E	Hand dug well with a hand pump	1	0	1
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	50	22	72
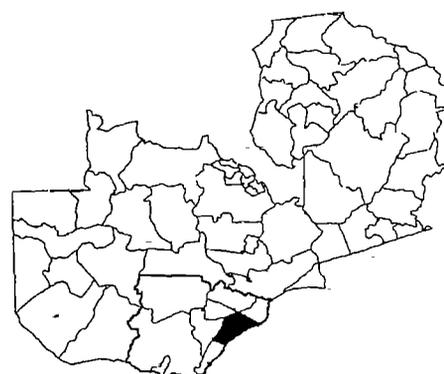
SOUTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.56	56%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			46 247
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 642	1 . 364	1 : 249
Crude coverage ratio, water points in use only	1 925	1 568	1 344
Crude coverage ratio, reliable water points only	1 1156	1 943	1 :567
Actual coverage ratio, all water points (%)	28	47	43
Actual coverage ratio, water points in use only (%)	20	30	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									57 292
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	53	0	0	39	1	0	0	0	93
Rehabilitated water points No	15	0	0	7	0	0	0	0	22
Costs, new water points $	136 475	0	0	216 450	2 850	0	0	0	355 775
Costs rehabilitations $	10 500	0	0	4 900	0	0	0	0	15 400
Total Costs $	147 975	0	0	221 350	2 850	0	0	0	371 175

KALOMO DISTRICT

SUMMARY SHEET
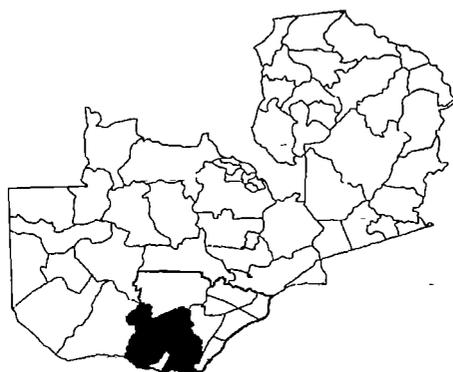
SOUTHERN PROVINCE

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	57	78	135
B	Tube well with bucket and windlass	1	0	1
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	131	32	163
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	189	110	299

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 48	48%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			208 336
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1·697	1·364	1.249
Crude coverage ratio, water points in use only	1·1102	1·568	1:344
Crude coverage ratio, reliable water points only	1 1447	1 943	1:567
Actual coverage ratio, all water points (%)	25	47	43
Actual coverage ratio, water points in use only (%)	17	30	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									256 140
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	250	3	0	186	0	0	0	0	439
Rehabilitated water points No	76	0	0	32	0	0	0	0	110
Costs, new water points $	643 750	4 425	0	1 032 300	0	0	0	0	1 680 475
Costs rehabilitations $	54 600	0	0	22 400	0	0	0	0	77 000
Total Costs $	698 350	4 425	0	1 054 700	0	0	0	0	1 757 475

SUMMARY SHEET   **MAZABUKA DISTRICT**

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	149	98	247
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	89	57	146
E	Hand dug well with a hand pump	2	0	2
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	4	4
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	240	159	399
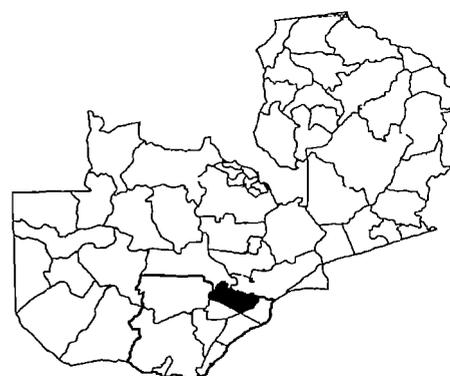
SOUTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 35	35%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			137 999
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 · 346	1 : 364	1 : 249
Crude coverage ratio, water points in use only	1 ·575	1 .568	1 :344
Crude coverage ratio, reliable water points only	1 :1000	1 :943	1 :567
Actual coverage ratio, all water points (%)	49	47	43
Actual coverage ratio, water points in use only (%)	29	30	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									157 137
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	77	0	0	0	0	0	0	0	77
Rehabilitated water points No	98	0	0	57	0	0	4	0	159
Costs, new water points $	198 275	0	0	0	0	0	0	0	198 275
Costs rehabilitations $	68 600	0	0	39 900	0	0	2 800	0	111 300
Total Costs $	266 875	0	0	39 900	0	0	2 800	0	309 575

MONZE DISTRICT

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	253	120	373
B	Tube well with bucket and windlass	0	1	1
C	Jetted well with a hand pump	1	0	1
D	Borehole with a hand pump	149	71	220
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	2	3	5
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	405	195	600

SOUTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 38	38%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			114 618
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 191	1 364	1 249
Crude coverage ratio, water points in use only	1·283	1·568	1 344
Crude coverage ratio, reliable water points only	1 505	1·943	1 567
Actual coverage ratio, all water points (%)	88	47	43
Actual coverage ratio, water points in use only (%)	60	30	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									120 695
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	120	1	0	71	0	0	3	0	195
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	84 000	700	0	49 700	0	0	2 100	0	136 500
Total Costs $	84 000	700	0	49 700	0	0	2 100	0	136 500

SUMMARY SHEET

NAMWALA DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	182	113	295
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	82	14	96
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	264	127	391

SOUTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.38	38%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			93 625
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 239	1 364	1.249
Crude coverage ratio, water points in use only	1.355	1:568	1:344
Crude coverage ratio, reliable water points only	1 633	1:943	1:567
Actual coverage ratio, all water points (%)	68	47	43
Actual coverage ratio, water points in use only (%)	47	30	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								109 528
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	113	0	0	14	0	0	0	0	127
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	79 100	0	0	9 800	0	0	0	0	88 900
Total Costs $	79 100	0	0	9 800	0	0	0	0	88 900

SIAVONGA DISTRICT

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	9	36	45
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	19	24	43
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	28	60	88

SOUTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 13	13%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			30 032
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 . 341	1 364	1 . 249
Crude coverage ratio, water points in use only	1 ·1073	1 568	1 :344
Crude coverage ratio, reliable water points only	1 ·2730	1 943	1 .567
Actual coverage ratio, all water points (%)	51	47	43
Actual coverage ratio, water points in use only (%)	17	30	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									32 001
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	10	0	0	0	0	0	0	0	10
Rehabilitated water points No	36	0	0	24	0	0	0	0	60
Costs, new water points $	25 750	0	0	0	0	0	0	0	25 750
Costs rehabilitations $	25 200	0	0	16 800	0	0	0	0	42 000
Total Costs $	50 950	0	0	16 800	0	0	0	0	67 750

SUMMARY SHEET

SINAZONGWE DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	45	47	92
B	Tube well with bucket and windlass	0	1	1
C	Jetted well with a hand pump	0	0	0
D	Borehole with a hand pump	35	31	66
E	Hand dug well with a hand pump	2	1	3
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	1	1	2
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	83	81	164
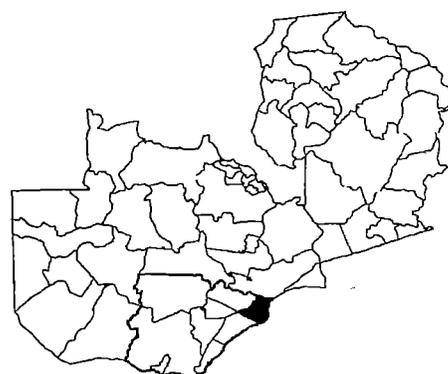
SOUTHERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.30	30%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			66 014
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 403	1 . 364	1 . 249
Crude coverage ratio, water points in use only	1 : 795	1 568	1 : 344
Crude coverage ratio, reliable water points only	1 : 1347	1 . 943	1 . 567
Actual coverage ratio, all water points (%)	43	47	43
Actual coverage ratio, water points in use only (%)	22	30	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									76 635
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	51	1	0	11	1	0	0	0	64
Rehabilitated water points No	47	1	0	31	1	0	1	0	81
Costs, new water points $	131 325	1 475	0	61 050	2 850	0	0	0	196 700
Costs rehabilitations $	32 900	700	0	21 700	700	0	700	0	56 700
Total Costs $	164 225	2 175	0	82 750	3 550	0	700	0	253 400

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notes

Notes :

WESTERN PROVINCE

KALABO DISTRICT

SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	111	11	122
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	51	48	99
D	Borehole with a hand pump	62	29	91
E	Hand dug well with a hand pump	0	1	1
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	1	0	1
H	Protected spring	6	0	6
P	Private well (usually unprotected)	0	0	0
	TOTALS	225	89	320

WESTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.62	62%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			87 817
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 280	1 : 365	1 249
Crude coverage ratio, water points in use only	1 390	1 482	1 344
Crude coverage ratio, reliable water points only	1 453	1 621	1 567
Actual coverage ratio, all water points (%)	65	48	43
Actual coverage ratio, water points in use only (%)	45	36	29

### INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									78 446
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	0	0	0	0	0	0	0	0	0
Rehabilitated water points No	11	0	48	29	1	0	0	0	89
Costs, new water points $	0	0	0	0	0	0	0	0	0
Costs rehabilitations $	7 700	0	33 600	20 300	700	0	0	0	62 300
Total Costs $	7 700	0	33 600	20 300	700	0	0	0	62 300

SUMMARY SHEET   **KAOMA DISTRICT**

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	37	35	72
B	Tube well with bucket and windlass	0	4	4
C	Jetted well with a hand pump	15	2	17
D	Borehole with a hand pump	70	12	82
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	2	1	3
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	124	54	178
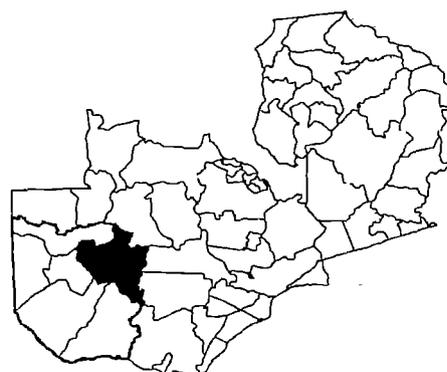
WESTERN PROVINCE

RELIABILITY FACTORS

| RELIABILITY FACTOR (ALL WATER POINTS)	0 62	62%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			136 360
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 :766	1 : 365	1 · 249
Crude coverage ratio, water points in use only	1 :1100	1 :482	1 :344
Crude coverage ratio, reliable water points only	1 1228	1 :621	1 :567
Actual coverage ratio, all water points (%)	33	48	43
Actual coverage ratio, water points in use only (%)	17	36	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									164 487
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	150	14	22	107	0	0	4	0	297
Rehabilitated water points No	35	4	2	12	0	0	1	0	54
Costs, new water points $	386 250	20 650	37 400	593 850	0	0	26 000	0	1 064 150
Costs rehabilitations $	24 500	2 800	1 400	8 400	0	0	700	0	37 800
Total Costs $	410 750	23 450	38 800	602 250	0	0	26 700	0	1 101 950

LUKULU DISTRICT   SUMMARY SHEET
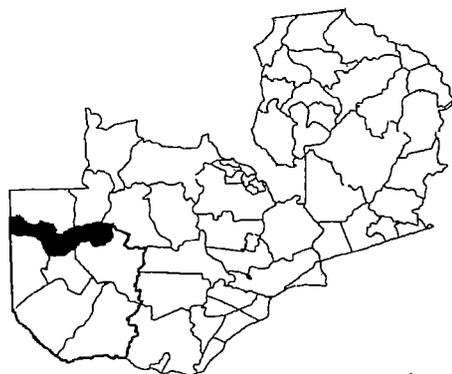
WESTERN PROVINCE

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	13	8	21
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	24	4	28
D	Borehole with a hand pump	64	5	69
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	101	17	118

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 85	85%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 ·			53 362
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 452	1 :365	1 : 249
Crude coverage ratio, water points in use only	1 :528	1 ·482	1 :344
Crude coverage ratio, reliable water points only	1 .534	1 .621	1 .567
Actual coverage ratio, all water points (%)	42	48	43
Actual coverage ratio, water points in use only (%)	37	36	29

## INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000								56 636	
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	13	0	6	14	0	0	0	0	33
Rehabilitated water points No	8	0	4	5	0	0	0	0	17
Costs, new water points $	33 475	0	10 200	77 700	0	0	0	0	121 375
Costs rehabilitations $	5 600	0	2 800	3 500	0	0	0	0	11 900
Total Costs $	39 075	0	13 000	81 200	0	0	0	0	133 275

SUMMARY SHEET

MONGU DISTRICT

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	159	41	200
B	Tube well with bucket and windlass	3	3	6
C	Jetted well with a hand pump	68	29	97
D	Borehole with a hand pump	62	30	92
E	Hand dug well with a hand pump	1	2	3
F	Tube well with a hand pump	1	3	4
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	294	108	402
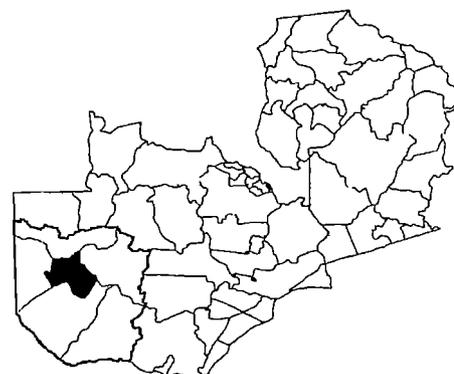
WESTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 60	60%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 :			118 320
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 · 291	1 · 365	1 : 249
Crude coverage ratio, water points in use only	1 ·402	1 ·482	1 .344
Crude coverage ratio, reliable water points only	1 487	1 :621	1 :567
Actual coverage ratio, all water points (%)	59	48	43
Actual coverage ratio, water points in use only (%)	443	36	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									129 081
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	14	4	0	0	0	2	0	0	20
Rehabilitated water points No	41	3	29	30	2	3	0	0	108
Costs, new water points $	30 050	5 900	0	0	0	3 500	0	0	45 450
Costs rehabilitations $	28 700	2 100	20 300	21 000	1 400	2 100	0	0	75 600
Total Costs $	64 750	8 000	20 300	21 000	1 400	5 600	0	0	121 050

SENANGA DISTRICT   SUMMARY SHEET

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	318	84	402
B	Tube well with bucket and windlass	2	0	2
C	Jetted well with a hand pump	16	11	27
D	Borehole with a hand pump	94	27	121
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	430	122	552

WESTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0 40	40%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996 .			153 867
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1 : 279	1 : 365	1 : 249
Crude coverage ratio, water points in use only	1 358	1 482	1 :344
Crude coverage ratio, reliable water points only	1 :636	1 :621	1 :567
Actual coverage ratio, all water points (%)	59	48	43
Actual coverage ratio, water points in use only (%)	45	36	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									173 852
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	20	1	0	0	0	0	0	0	21
Rehabilitated water points No	84	0	11	27	0	0	0	0	122
Costs, new water points $	51 500	1 475	0	0	0	0	0	0	52 975
Costs rehabilitations $	58 800	0	7 700	18 900	0	0	0	0	85 400
Total Costs $	110 300	1 4755	7 700	18 900	0	0	0	0	138 375

SUMMARY SHEET   **SESHEKE DISTRICT**

TECHNOLOGY DISTRIBUTION

CLASS	DESCRIPTION	IN USE	NOT IN USE	TOTAL
A	Hand dug well with bucket and windlass	12	2	14
B	Tube well with bucket and windlass	0	0	0
C	Jetted well with a hand pump	5	3	8
D	Borehole with a hand pump	76	13	89
E	Hand dug well with a hand pump	0	0	0
F	Tube well with a hand pump	0	0	0
G	Hand dug well or borehole with a windmill	0	0	0
H	Protected spring	0	0	0
P	Private well (usually unprotected)	0	0	0
	TOTALS	93	18	111

WESTERN PROVINCE

RELIABILITY FACTORS

RELIABILITY FACTOR (ALL WATER POINTS)	0.85	85%

COVERAGE INDICATORS

ESTIMATED RURAL POPULATION 1996			60 896
COVERAGE RATIOS	DISTRICT	PROVINCE	NATIONAL
Crude coverage ratio, all water points	1:549	1:356	1:249
Crude coverage ratio, water points in use only	1:655	1:451	1:344
Crude coverage ratio, reliable water points only	1:648	1:989	1:5671
Actual coverage ratio, all water points (%)	35	44	43
Actual coverage ratio, water points in use only (%)	30	35	29

INVESTMENT INDICATORS TO ACHIEVE 50% COVERAGE BY THE YEAR 2 000

ESTIMATED RURAL POPULATION 2 000									64 378
REQUIREMENTS	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F	TYPE G	TYPE H	TOTAL
New water points No	13	0	4	40	0	0	0	0	57
Rehabilitated water points No	2	0	3	13	0	0	0	0	18
Costs, new water points $	33 475	0	6 800	222 000	0	0	0	0	262 275
Costs rehabilitations $	1 400	0	2 100	9 100	0	0	0	0	12 600
Total Costs $	34 875	0	8 900	231 100	0	0	0	0	274 875

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Notes :

THE CORE TRAINING MANUALS AND SUPPLEMENTARY MODULES

No   TITLE/DESCRIPTION

MANUALS

Manual 1 Understanding the WASHE Concept
Manual 2 Water Sector Reforms and Implications for WASHE
Manual 3 Introducing WASHE at District Level
Manual 4 Establishing WASHE at District Level
Manual 5 Planning for WASHE at District Level

SUPPLEMENTARY MODULES

1a Coverage Parameters for Rural Water Supply in Zambia
1b The Status of Rural Water Supply in Zambia
1c Glossary of Terms for Rural Water Supply
1d Partners in WASHE
2a Technology for Rural Water Supply : Making the Right Choice
2b Technology for Rural Water Supply : Technology Costs
2c Technology for Rural Water Supply : Standard Construction Details (Hand Dug Well)
2d Technology for Rural Water Supply : Standard Construction Details (Tube Well)
2e Technology for Rural Water Supply : Standard Construction Details (Jetted Well)
2f Technology for Rural Water Supply : Standard Construction Details (Bore Hole)
2g Technology for Rural Water Supply : Family Well Upgrading
3a Hand Pump Standardisation
3b Guidelines for Meeting the Hand Pump Standards
4a Rural Water Supply Maintenance Options
4b Rural Water Supply Maintenance Guidelines
5a Options for Excreta Disposal Facilities
5b Latrine Construction Techniques
6a Participatory Health and Hygiene Education (Theory)
6b Participatory Health and Hygiene Education (Practical)
7a The Project Cycle for Rural Water Supply
7b Making Appointments
7c Community Mobilisation and Sensitisation
7d Conducting Community Assessment
7e Formation of a Village WASHE Committee
7f Site Selection
7g Planning for Construction and Rehabilitation
7h Community Participation During Construction
7i Village WASHE Committee Training
7j Community Problem Solving
7k Fund Raising and Management
7l Promoting Community Ownership
7m Community Participation in Monitoring
7n Well Completion Ceremony (Handover)
7o Community Management in Evaluation
7p Group Dynamics
8   WASHE and Gender

MAP CATALOGUES

No	TITLE/DESCRIPTION
CL/CHB	Map Catalogue . Chibombo District
CL/KAP	Map Catalogue : Kapiri Mposhi District
CL/MKS	Map Catalogue : Mkushi District
CL/MUM	Map Catalogue : Mumbwa District
CL/SER	Map Catalogue : Serenje District
CB/MAS	Map Cata/ogue : Masaiti District
EN/CHD	Map Catalogue : Chadiza District
EN/CHM	Map Catalogue : Chama District
EN/CHP	Map Catalogue · Chipata District
EN/KAT	Map Catalogue : Katete District
EN/LUN	Map Catalogue : Lundazi District
EN/MAM	Map Catalogue : Mambwe District
EN/NYI	Map Catalogue : Nyimba District
EN/PET	Map Catalogue : Petauke District
LK/CHG	Map Cata/ogue : Chongwe District
LK/KFU	Map Cata/ogue : Kafue District
LK/LUA	Map Catalogue : Luangwa District
LP/KAW	Map Catalogue : Kawambwa District
LP/MAN	Map Catalogue : Mansa District
LP/MWE	Map Catalogue : Mwense District
LP/NCH	Map Catalogue : Nchelenge District
LP/SAM	Map Catalogue : Samfya District
NT/CHL	Map Catalogue : Chilubi District
NT/CHS	Map Catalogue : Chinsali District
NT/ISK	Map Catalogue : Isoka District
NT/KPT	Map Catalogue : Kaputa District
NT/KAS	Map Catalogue : Kasama District
NT/LGW	Map Catalogue : Luwingu District
NT/MBA	Map Catalogue : Mbala District
NT/MPI	Map Catalogue : Mpika District
NT/MPR	Map Catalogue : Mporokoso District
NT/NAK	Map Catalogue : Nakonde District
NW/KBP	Map Cata/ogue · Kabompo District
NW/KSP	Map Cata/ogue : Kasempa District
NW/MFB	Map Cata/ogue : Mufumbwe District
NW/MWI	Map Cata/ogue : Mwinilunga District
NW/SOL	Map Catalogue : Solwezi District
NW/ZAM	Map Catalogue : Zambezi District
WN/KLB	Map Catalogue : Kalabo District
WN/KAO	Map Catalogue : Kaoma District
WN/LUK	Map Catalogue : Lukulu District
WN/MGU	Map Catalogue : Mongu District
WN/SEN	Map Catalogue : Senanga District
WN/SHK	Map Catalogue : Sesheki District
SN/CHO	Map Catalogue : Choma District
SN/GWE	Map Catalogue : Gwembe District
SN/KAL	Map Catalogue : Kalomo District
SN/NAM	Map Catalogue : Namwala District
SN/MAZ	Map Catalogue : Mazabuka District
SN/MON	Map Catalogue : Monze District
SN/SIA	Map Catalogue : Siavonga District
SN/SIN	Map Catalogue : Sinazongwe District