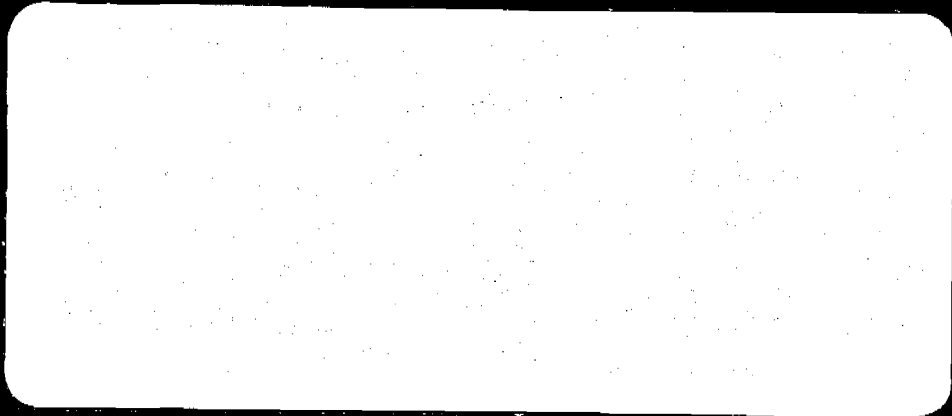


824 TZSH92



**Rural Water and Sanitation Programmes
Morogoro and Shinyanga Regions**

824-TZSH92-10005

REPORTING AND MONITORING
ON
OPERATION AND MAINTENANCE

SHINYANGA REGION

SHINYANGA, MARCH 1992

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ABBREVIATIONS AND ACRONYMS

CDA	Community Development Assistant
DFA	District Field Assistant
DOI	District Operations-in-charge
DWSC	District Water and Sanitation Committee
DWP	Domestic Water Point
HA	Health Assistant
IWP	Improved Water Point
IRC	International Reference Centre, The Hague
O&M	Operation and Maintenance
PANAFCON	Pan African Consultants Ltd., Nairobi
RHO	Regional Health Officer
RWSSC	Regional Water and Sanitation Steering Committee
RWSP M/S	Rural Water and Sanitation Programmes Morogoro and Shinyanga Regions
VCT	Village Care Taker
VHW	Village Health Worker
VLOM	Village level operation and maintenance
VM/SA	Village Mechanic/Scheme attendant
VWSC	Village Water and Sanitation Committee

2.1 REPORTING AND MONITORING

Within the Morogoro/Shinyanga Rural Water and Sanitation Programmes a system for reporting and monitoring is operational at village-, ward -, district - and regional level.

Through standardized forms (Annex I), each level reports monthly on matters of operation and maintenance and on health and sanitation. Presently some 68 villages in the whole of Shinyanga Region prepare these monthly reports. The organization charts of reporting and monitoring activities are presented on pages 6 and 7.

The reporting/monitoring system has been developed by the IRC in the Hague. The purpose of the system is (1) to monitor operation of VLOM to detect operational problems at an early stage and (2) to allow assessment of the cost-effectiveness of the programme in the longer run.

To allow the assessment of the cost-effectiveness of the programme it is required that the districts summarize programme costs, including salaries, transport and overhead. To this should be added the allowances of the field staff and the salaries of the PA's as other inputs into the programme. Part of the village contributions are monitored through the reporting system. It will then be possible to estimate at what inputs from villages, Tanzanian Government and Netherlands Government results were achieved in:

- reliable and effective maintenance of village water supplies
- coverage of maintenance costs
- improvements in local sanitation and hygiene
- effective village management of maintenance and financing
- expansion of the systems to cope with population growth
- stimulation of women's involvement in village development.

From a point of view of monitoring operational problems of VLOM, the idea is that the Village Government, through the Village Water and Sanitation Committee, takes action whenever problems are reported to them. For instance, when the Village Mechanic reports that he/she needs grease, the Village Government should provide it. Or, when the Village Water and Sanitation Committee reports on the malfunctioning of the Village Mechanic this should be discussed by the Village Government resulting in a decision leading to improvement of the situation.

Technical problems with the hand pumps or the piped scheme installation, which cannot be solved by the Village Mechanic/Scheme Attendant, should be given follow up by the DFA or the DOI. Also, when management - or administration problems occur, such as no action taken by the Village Government on problems reported to them, the -field and district teams should visit and advise the villages concerned.

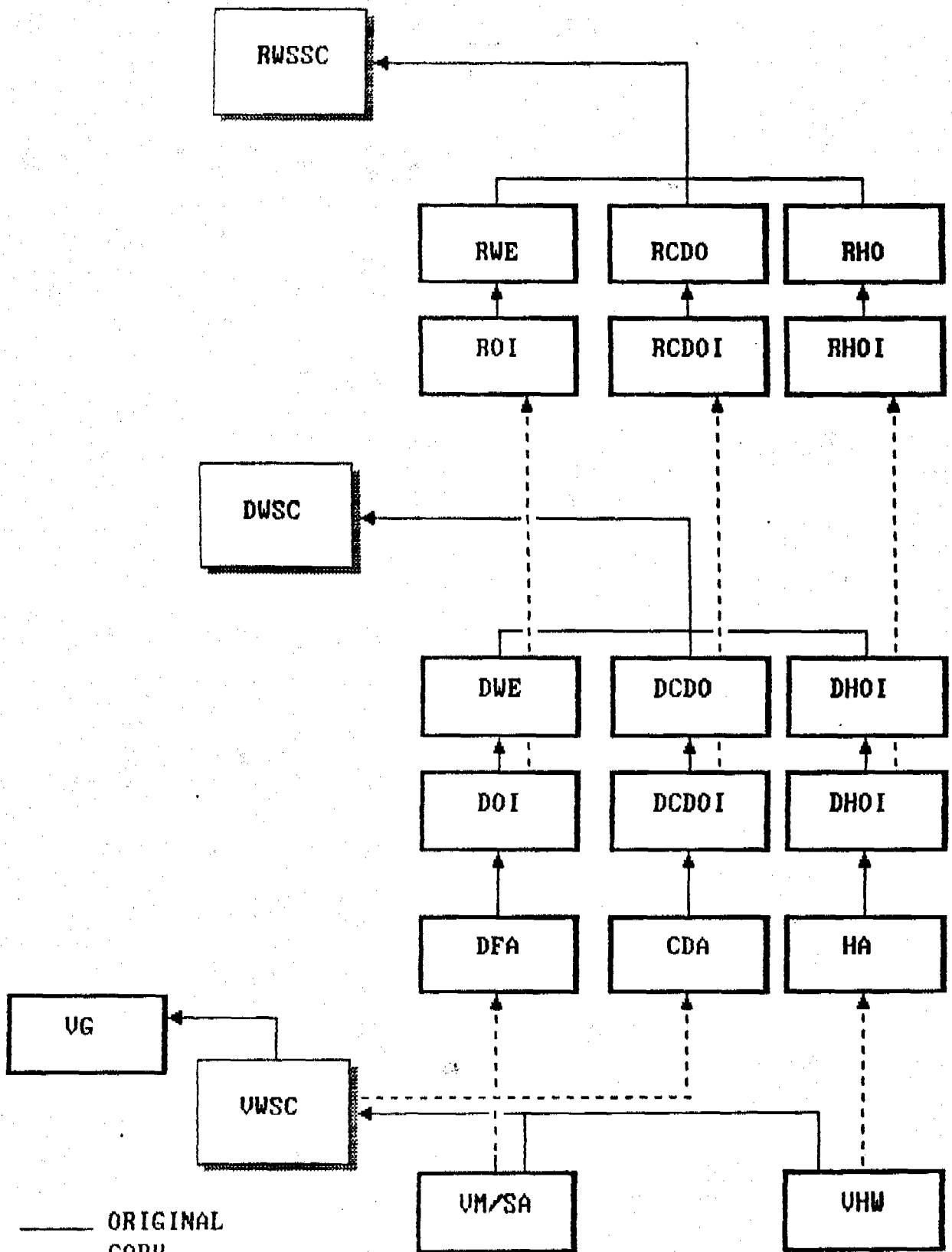
The District Water and Sanitation Committees (DWCS's) should see to it that

1. basically the villages take the initiative to solve their own problems;
2. the villages are assisted to develop their skills (assessment training needs/ provision of training) and develop an attitude of self-reliance in order to be able to take initiative;
3. assists with those problems (technical -both water points and sanitation facilities-, spare part supply) which cannot be solved by the villages.

The DWSC's should meet every month for both implementation and monitoring purposes.

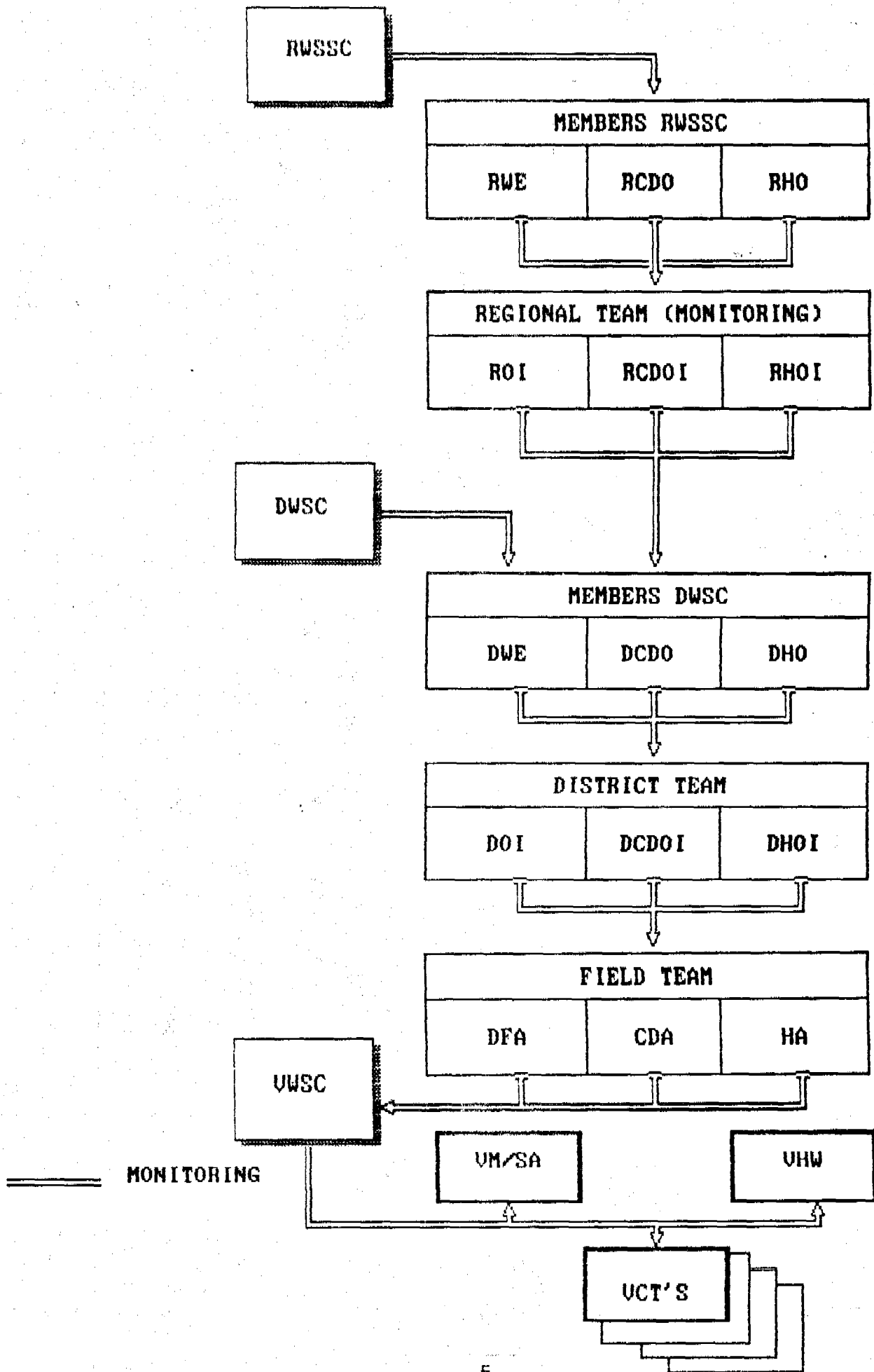
The Regional Water and Sanitation Steering Committee (RWSSC) should meet every three months and provide a forum for discussion among the districts and should monitor the DWSC's on their tasks.

ORGANIZATION CHART REPORTING



_____ ORIGINAL
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ORGANIZATION CHART MONITORING



2.2 COMPUTERIZATION OF VILLAGE DATA

Since January 1991 data which are presented in the monthly reports of the VWSC's, the VM/SA's and the VHW's are computer-processed. The results for the period January 1991 - December 1991 are presented in this report.

The computer programme has been designed by Panafcon, Nairobi.

The basis of the presented data is formed by a total of 26 villages which is 36% of all programme villages.

Only those villages, which were reported to have completed their rehabilitation activities of wells or piped schemes as per 1.1.1991, have been selected.

The criteria for this selection has been that the main interest for the statistical analysis of O&M lies with rehabilitated and new wells. As per 1.1.1991, quite a number of villages were still in the process of rehabilitating their wells, i.e. part of the wells were rehabilitated, part of the wells not yet. Hence, the data derived from their reports would distort the picture about the O&M of the rehabilitated new ones.

From January 1992 on, the data of those programme villages which have completed rehabilitation activities as per 1.1.1992, will be included in computerized processing.

The data presented here originate directly from the village reports. This is, the monthly reports of the VWSC's, the VM's, and the VHW's come, via the Regional Team, to the office of the programme advisers.

The choice has been made to use the village reports rather than the district- or regional reports for computerized processing, and this for two reasons.

First, because the district and regional reports compile data of all reported water points, i.e. the data concerning O&M of each individual water point can no longer be traced. Second, because data have to be compiled at each reporting level, it can be expected that the chance of occurrence of mathematical errors is rather high.

Meanwhile, it has become clear that the information derived from the village reports provides the regional team and programme advisers with very up to date information on VLOM and has become a first hand source for advise to the districts.

Data input, processing and analysis is presently done by the programme advisers at their office in Shinyanga.

It is planned that -for reasons of sustainability of this activity- the regional team members will be trained on data input, processing and analysis in the near future.

The type of data which are computer processed can be divided in four groups: (1) Village data; (2) Management data; (3) Water facilities data, (4) Health and Sanitation - and (5) Training data.

Part of these data are presented in this report in the form of tables representing one quarter of a year, for each of the five districts of Shinyanga.

The information presented is a selection of the most relevant and valid data presently generated by the reporting/monitoring system. Since this is the first year of regular reporting, it should be realized that the system is still not perfect. Some of the data collected seem to be unreliable due to either unfamiliarity with the requirements for proper reporting, or to improper phrasing of the question. Nonetheless, the greater part of the reporting forms are well-understood and data are well-reported.

Also, the computerized processing of the data needs to be improved. Some of the tables do not read very well. Computerized processing of data on an annual base (graphs and figures) still has to be developed.

Annex II presents a comprehensive print-out of all data which are computer processed, grouped in tables per village and per month for the fourth quarter of 1991.

Both improvement of the reporting forms and the computer programme is being taken care off. Any changes, however, will most probably not become effective until the start of the new phase of the programme.

Comments and observations of the programme advisers on achievement of the monitoring objectives, the reliability, the analysis and interpretation of the data can be found with the tables presented in this report.

3 DATA

3.1 VILLAGE DATA

MONTHLY AVERAGES OF REPORTING VILLAGES, POPULATION AND IWP'S
TABLES 3.1.1, 3.1.2, 3.1.3 AND 3.1.4 (PAGES 10 AND 11)

Explanations

1. The tables show the coverage percentage as an average per month over a three - monthly period (one quarter). Each table represents one quarter of the year 1991. An IWP is designed to serve 250 people. To calculate the coverage per quarter we used the following formula:

$$\text{Coverage (\%)} = \frac{\text{IWP's (average per month)} \times 250}{\text{population (average per month)}} \times 100$$

2. An "IWP" is an "Improved Water Point". An IWP can only be a well with a pump or a Domestic Water Point (a public tap). All other sources for water are considered to be "unprotected".
3. The coverage figures relate to a total of 26 programme villages which reported in December 1991 on 146 wells and 11 DWP's, together 157 IWP's.
4. The question on the number of IWP's present in the village is repeated every month since it is assumed that additional IWP's will be built. Any change in the number of IWP's is thus monitored on a monthly basis.

Comments

1. Calculating the coverage percentage for reporting villages from the region as a whole, this was 51%, 52%, 53% and 52% for the first, second, third and fourth quarter of 1991 respectively.
2. When the districts in Shinyanga are listed according the criteria lowest versus highest coverage percentages, the following picture emerges (as per December 1991), for reporting villages.

<u>District</u>	<u>Coverage percentage</u> <u>programme villages</u>
Maswa	32%
Bariadi	54%
Meatu	61%
Kahama	63%
Shy. Rural	65%

3. According to the above, the maximum coverage in the programme villages for the year 1991 is 53%. This is the situation after nearly four years of programme implementation. The impact of the programme is evident when this figure is compared with the coverage figure for shallow wells for the whole region, which is < 10%. This last figure is based on the population census of 1988 and relates to 163 villages and to working wells only, including those in the programme villages.
4. If construction in these programme villages is not continued, the achieved coverage percentage will decrease. For instance, to sustain a coverage percentage of 50% in these villages a minimum of 3 new wells are required to be built every year. The reported population growth in the reported villages is 1.95% in 1991. If a coverage of 100% is the aim, a number of 6 wells (after 7 years 7 etc.) are to be constructed. To reach a coverage of 100%, first another 144 wells have to be built in the 26 programme villages.
5. The calculations above serve as an indication of the water demand in 26 programme villages assuming that wells are the only solution and assuming that every 250 persons should avail of one well (= 100% coverage).

In reality the picture is more complicated:

- sometimes wells are no viable solution, hence piped schemes or dams, for instance, have to be considered;
- the coverage in a village might be 100%, but still villagers state that the number of wells is not enough. This is very often due to the fact that the location of the wells is considered by the villagers to be too far. In fact a coverage of 100% is not adequate and more wells are required.
- In quite some cases, wells cannot be constructed at locations of villagers' preference. In such cases it should be considered whether an alternative solution is required, i.e. a 100% coverage cannot be realized with wells only.
- The coverage percentage is an overall figure, which does not reflect seasonal fluctuations. For instance in Shinyanga Rural District, during the months of August, September and October 1991, the effective coverage was 19% due to lowering of the water table. Whereas during the rainy season the coverage is 65% (programme villages). The impact of these fluctuations in clean water supply on people's behaviour is shown in figures 3.4.1 up to 3.4.5 under Chapter 3.4 "Health and Sanitation Data".

VILLAGE DATA 1991

Table 3.1.1 : Monthly average of reporting villages, population and IWP's.

Period= Jan-Mar

District	Monthly averages of			Coverage (%)
	reporting villages	population	IWP(s)	
SHINYANGA RURAL	7.0	15208.3	40.0	66 %
BARIADI	7.0	24870.7	50.0	50 %
MASWA	6.0	20024.0	26.0	33 %
MEATU	2.6	5353.0	14.7	51 %
KAHAMA	4.0	8095.3	19.7	61 %

Table 3.1.2 : Monthly average of reporting villages, population and IWP's.

Period= Apr- Jun

District	Monthly averages of			Coverage (%)
	reporting villages	population	IWP(s)	
SHINYANGA RURAL	7.0	15288.7	40.0	65 %
BARIADI	7.0	24931.0	54.0	54 %
MASWA	6.0	20080.7	26.0	32 %
MEATU	2.0	6033.7	15.0	62 %
KAHAMA	4.0	8100.0	20.7	64 %

VILLAGE DATA 1991

Table 3.1.3 : Monthly average of reporting villages, population and IWP's.

Period= Jul- Sep

District	Monthly averages of			Coverage (%)
	reporting villages	population	IWP(s)	
SHINYANGA RURAL	7.0	15320.0	40.0	65 %
BARIADI	7.0	24951.0	54.0	54 %
MASWA	6.0	20147.7	26.0	32 %
MEATU	2.0	6104.7	15.0	61 %
KAHAMA	4.0	8112.3	22.0	68 %

Table 3.1.4 : Monthly average of reporting villages, population and IWP's.

Period= Oct- Dec

District	Monthly averages of			Coverage (%)
	reporting villages	population	IWP(s)	
SHINYANGA RURAL	7.0	15396.3	40.0	65 %
BARIADI	7.0	25064.0	54.0	54 %
MASWA	6.0	20310.0	26.0	32 %
MEATU	2.0	6166.0	15.0	61 %
KAHAMA	4.0	8151.7	22.0	68 %

3.2 MANAGEMENT DATA

AVERAGE TIME INPUTS VILLAGE LEVEL (DAYS)
TABLE 3.2.1

Explanations

1. Table 3.2.1 shows the average number of days spent per month by the members of the VWSC's, the VHW's and the VM/SA's over the period October/November/December 1991.

Table 3.2.1: Average time inputs (days) for the members of the VWSC's, the VM/SA's and the VHW's for the months of October, November and December 1991.

<u>DISTRICT</u>	<u>VWSC</u>		<u>VM/SA</u>	<u>VHW</u>
	<u>Meetings</u>	<u>Visits</u>		
SHY RURAL	0.4	0.6	5	5.5
BARIADI	0.3	0.5	2.8	2.7
MASWA	0.4	0.6	4.5	10.8
MEATU	0.3	0.5	10	16
KAHAMA	0.3	0.6	3.6	9.4

2. One day is 8 hours.

Monitoring objectives

1. This information aimed to monitor labour inputs at village level to obtain regular data on village contributions to the programme. Also, the question aimed to stimulate regular labour inputs by the villagers concerned with the day to day operation and maintenance activities.

Observations and comments

1. Standards for minimum time inputs by the members of the VWSC, the VHW's and the VM/SA's have never been determined. The time-inputs reported here have been indicated by the secretaries of the VWSC's, the VM/SA's and the VHW's themselves.
2. The validity of the data can be checked at village level by the field-team members. Whether this is being done, should be doubted.
3. On a whole, the time inputs for both the meetings and the visits of the VWSC's seems to be low. On average, in all districts, some two to two and a half hours per month are spent on meetings and some four and a half hours on visiting the IWP's.

4. As far as the meetings of the VWSC's are concerned, it can be assumed that many of these committees do not discuss the data reported to them every month by the VM/SA and the VHW. If they do, it can be questioned whether these committees are familiar enough with techniques of discussion, initiating action and follow-up on problems reported to them. Although these issues have been given attention during the workshops to introduce the reporting and monitoring system, further training is necessary.
5. The time inputs of the VM/SA's and the VHW's as these are reported by themselves seem to be realistic, though on the low side. The VM/SA's are supposed to visit all IWP's every week for preventive maintenance. Most of them do not have a bicycle, which means that they have to go by feet. In such a case that some 5 wells have to be visited, one day would hardly be enough, considering the dispersed location of the wells in most of the Shinyanga villages. The VM's and the VHW's frequently request for a bicycle through the monthly reports, which should be provided by the village. It would be a good incentive if the villages would provide for bicycles. In some rare cases it has happened. Usually, the bicycle is provided on a loan basis.
6. The reports of the VHW's indicate that they spend more time per month than the VM/SA's. This could very well be true since the reporting/monitoring system requires them to visit all the households in their villages every month to check upon sanitary facilities. Again, without a bicycle, this is a time consuming job in Shinyanga villages.
7. The time-input data of both the VM/SA's and the VHW's can be checked by the VWSC's through the logbooks on each IWP these are kept by the Village Care Takers being the guardians of the IWP's. It should be doubted whether this is being done. Also, because most of the VM/SA's are not being paid, it might very well be that they do not visit all IWP's every week. The same accounts for the VHW's.
For that matter it is interesting to observe that, in Meatu which is the only district where the VM's and the VHW's are being paid regularly, the reported time inputs for both are much higher than for the other districts (see table 3.2.1 above).
8. Since time-inputs required have never been measured, nor have any standards been set, it is difficult to assess the validity of the data presented in the above table.
If it is assumed that the data are correct, it can be concluded that at least the VWSC's in Shinyanga programme villages have adopted the habit of meeting and of visiting the IWP's. The strengthening of this institution at village level should be given due attention in order to increase the effectiveness of their activities.

The same can be said about the VM/SA's and the VHW's. Training to make their monthly activities more effective as well as suggestions for the introduction of a proper remuneration system are required.

EXPENDITURES FROM VILLAGE WATER FUND IN TSHS
TABLES 3.2.2, 3.2.3, 3.2.4 AND 3.2.5
(PAGES 16 AND 17)

Explanations

1. The tables show expenditures on O&M of the village water supplies for all months of 1991 for the five districts of Shinyanga. Each table covers one quarter of the year 1991.
2. The costs registered are payments to the Village Mechanics, the Village Health Workers and expenditures for spares for the water supplies. Under "other", expenditures for administration, occasional payments, travel expenses, beverages/food during meetings are presented.

Monitoring objectives

1. To establish costs per IWP for O&M. To estimate per year village contributions to O&M as an indication of local contributions to the programme.

Observations and comments

1. The payments recorded in the tables 3.2.2, 3.2.3, 3.2.4 and 3.2.5 are summarized as follows:

Table 3.2.6: Total of expenditures for O&M for all districts and percentage of each type of expenditure of total expenditures.

	<u>Expenditures</u>	<u>% of total Expenditure</u>
Fees VM	18,100	12.7%
Fees VHW	27,670	19.4%
Costs spares	11,600	8.1%
Other	85,460	59.8%
Total expenditures	142,830*	100 %

* This figure has been corrected for TShs. 34,000 which had been reported under other being an expense for construction of a new well. This is not considered as an expense for O&M.

2. The expenditures for spares are very low and only very few villages spend money on the purchase of spares. Two main factors can presently be forwarded to explain this:

- All pumps which have been installed on the rehabilitated and constructed wells are new. It can be assumed that these pumps hardly need any replacement of worn parts during the first five years of functioning. This is confirmed by the low

demand for spares in the monthly reports of the villages. By far most of the pumps in the 26 reporting villages have been installed after 1988.

- The fact that spares are hardly available; villages therefore can not buy spares.
- 3. The type of spares which have been bought by the reporting villages, per district, are listed under tables 3.3.9, 3.3.10, 3.3.11, 3.3.12 under "Water facilities data; Spares turnover (numbers used)".
- 4. Very few villages pay fees to VM's and VHW's. It is said, that sometimes, these people are exempted from taxes and/or communal labour. This is not reported, however.

Monitoring objectives

1. During the year 1991, village contributions to O&M have been established.
2. The calculation for estimated costs for O&M per IWP per year can hardly be done with the presently available data. Present data relate to one year only and to new and recently rehabilitated IWP's. To get a more realistic picture, registration of costs for O&M at village level, need to be done over a longer period of time, possibly five to ten years. See also remarks under "Spares turnover; observations and comments" nos. 2 and 3.
In addition, reporting and computerized processing of these data need to be improved.

Table 3.2.2 : Expenditures from village water fund (TSh)
Period= Jan-Mar

	SHINYANGA RURAL			BARIADI			MASWA			HEATU			KAHAMA		
	JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR
No of rep. Villages		1		2	2	2	1		1	2	1	1	1		
Fees VH										1200	1200	1200	600		
Fees VHW										1500	1500	1500			
Costs of Spares															
Other		3200		2150	2800	8500	1080		3200	5560					
Total exp.		3200		2150	2800	8500	1080		3200	8260	2700	2700	600		

MANAGEMENT DATA 1991

Table 3.2.3 : Expenditures from village water fund (TSh)
Period= Apr-Jun

	SHINYANGA RURAL			BARIADI			MASWA			HEATU			KAHAMA		
	APR	MAY	JUN	APR	MAY	JUN	APR	MAY	JUN	APR	MAY	JUN	APR	MAY	JUN
No of rep. Villages		1	1	2	1	1	1	1		1	2	2			
Fees VH										1200	2500	1200			
Fees VHW										1500	1500	1500			
Costs of Spares					300	1600		1600			1500				
Other		400	200	5550			3200	600			2100	8300			
Total exp.		400	200	5550	300	1600	3200	2200		2700	7600	11000			

Table 3.2.4 : Expenditures from village water fund (TSh)
Period= Jul-Sep

	SHINTANGA RURAL			BARIADI			NASWA			HEATU			KAHANA				
	JUL	AUG	SEP	JUL	AUG	SEP	JUL	AUG	SEP	JUL	AUG	SEP	JUL	AUG	SEP		
No of rep. Villages					1	1		1	1	1		2	2	1			1
Fees VH						200						1200	1200	1200			
Fees VHW												1500		3000			
Costs of Spares					200			3400									
Other									34000	2000		800	520	3300			500
Total exp.					200	200		3400	34000	2000		3500	1720	7500			500

MANAGEMENT DATA 1991

Table 3.2.5 : Expenditures from village water fund (TSh)
Period= Oct-Dec

	SHINTANGA RURAL			BARIADI			NASWA			HEATU			KAHANA				
	OCT	NOV	DEC	OCT	NOV	DEC	OCT	NOV	DEC	OCT	NOV	DEC	OCT	NOV	DEC		
No of rep. Villages		1	2		1	2					2	1	1			1	1
Fees VH						1000					1200		3000				
Fees VHW						5000					3000	3000	3000				
Costs of Spares					3000												
Other		8000	12500			3200					3600	4500				100	100
Total exp.		8000	12500		3000	9200					7800	7500	6000			100	100

AVERAGE NUMBER OF IWP'S AND WASHING SLABS PRESENT AND VISITED PER MONTH BY VHW
TABLES 3.2.7, 3.2.8, 3.2.9 AND 3.2.10
PAGES 19 AND 20

AVERAGE NUMBER OF IWP'S AND WASHING SLABS VISITED PER MONTH BY VHW AND FOUND TO BE UNCLEAN
TABLES 3.2.11, 3.2.12, 3.2.13 AND 3.2.14
PAGES 21 AND 22

Explanations

1. The tables 3.2.7, 3.2.8, 3.2.9 and 3.2.10 represent the average number of IWP's and washing slabs present in the villages and number and percentage of those visited by VHW for each quarter of 1991. The tables 3.2.11, 3.2.12, 3.2.13 and 3.2.14 show the average number and percentage of IWP's which were found and reported unclean by the VHW. These tables also represent four quarters of the year 1991.

Monitoring objectives

1. To provide the VWSC and the health department with a tool for monitoring the cleanliness around the wells and the activities of the VHW. Also, via the monthly repetition of the question, the need for visiting the IWP's is being stressed and promoted.

Observations and comments

1. The question can be raised whether indeed the VHW does visit as he/she reports. The VWSC can check on the activities of the VHW by visiting the IWP's themselves and by checking on the logbooks of the VCT's. Whether this is done, is not known.
2. The reported figures indicate that an average of 74% of the IWP's have been visited per month by the VHW's. The IWP's to be found unclean amount to an average of 7% per month.
3. When the reported visits are true, the monitoring objective of promoting the activities of the VHW, is successful. It gives an indication of the continuous commitment of the VHW.

MANAGEMENT DATA 1991

Table 3.2.7 : Average number of IWP's and washing slabs present and visited per month by VHW.
Period= Jan- Mar

District	Average number of IWP(s)			Average number of w/slabs		
	present	visited	(%)	present	visited	(%)
SHINYANGA RURAL	40.0	25.0	63 %	1.3	1.0	77 %
BARIADI	50.0	14.7	29 %			
MASWA	26.0	14.7	57 %	1.0	1.0	100 %
MEATU	14.7	11.0	75 %			
KAHAMA	19.7	16.0	81 %			

Table 3.2.8 : Average number of IWP's and washing slabs present and visited per month by VHW.
Period= Apr-Jun

District	Average number of IWP(s)			Average number of w/slabs		
	present	visited	(%)	present	visited	(%)
SHINYANGA RURAL	40.0	35.0	88 %	3.0	2.7	90 %
BARIADI	54.0	41.0	76 %			
MASWA	26.0	24.3	94 %	3.0	3.0	100 %
MEATU	15.0	15.0	100 %			
KAHAMA	20.7	18.0	87 %			

MANAGEMENT DATA 1991

Table 3.2.9 : Average number of IWP's and washing slabs present and visited per month by VHW.
Period= Jul- Sep

District	Average number of IWP(s)			Average number of w/slabs		
	present	visited	(%)	present	visited	(%)
SHINYANGA RURAL	40.0	32.7	82 %	1.0	1.0	100 %
BARIADI	54.0	24.7	46 %			
MASWA	26.0	23.3	90 %	3.0	3.0	100 %
MEATU	15.0	13.7	91 %			
KAHAMA	22.0	14.7	67 %			

Table 3.2.10 : Average number of IWP's and washing slabs present and visited per month by VHW.
Period= Oct-Dec

District	Average number of IWP(s)			Average number of w/slabs		
	present	visited	(%)	present	visited	(%)
SHINYANGA RURAL	40.0	35.0	88 %	1.0	1.0	100 %
BARIADI	54.0	45.7	85 %			
MASWA	26.0	23.0	89 %	3.0	3.0	100 %
MEATU	15.0	13.7	91 %			
KAHAMA	22.0	19.3	88 %			

MANAGEMENT DATA 1991

Table 3.2.11 : Average number of IWP's and washing slabs visited per month by VHW and found to be unclean.
Period= Jan-Mar

District	Average number of IWP(s)			Average number of w/slabs		
	visited	unclean	(%)	visited	unclean	(%)
SHINYANGA RURAL	25.0	4.3	17 %	1.0	0.3	30 %
BARIADI	14.7	0.3	2 %			
MASWA	14.7	2.0	14 %	1.0	0.3	30 %
MEATU	11.0	0.7	6 %			
KAHAMA	16.0	4.3	27 %			

Table 3.2.12 : Average number of IWP's and washing slabs visited per month by VHW and found to be unclean.
Period= Apr-Jun

District	Average number of IWP(s)			Average number of w/slabs		
	visited	unclean	(%)	visited	unclean	(%)
SHINYANGA RURAL	35.0	1.3	4 %	2.7		0 %
BARIADI	41.0	2.7	7 %			
MASWA	24.3	2.7	11 %	3.0	1.0	33 %
MEATU	15.0	0.3	2 %			
KAHAMA	18.0	2.0	11 %			

MANAGEMENT DATA 1991

Table 3.2.13 : Average number of IWP's and washing slabs visited per month by VHW and found to be unclean.

Period= Jul-Sep

District	Average number of IWP(s)			Average number of w/slabs		
	visited	unclean	(%)	visited	unclean	(%)
SHINYANGA RURAL	32.7	2.7	8 %	1.0		0 %
BARIADI	24.7	2.3	9 %			
MASWA	23.3	1.0	4 %	3.0		0 %
MEATU	13.7	0.7	5 %			
KAHAMA	14.7	2.0	14 %			

Table 3.2.14 : Average number of IWP's and washing slabs visited per month by VHW and found to be unclean.

Period= Oct-Dec

District	Average number of IWP(s)			Average number of w/slabs		
	visited	unclean	(%)	visited	unclean	(%)
SHINYANGA RURAL	35.0	0.3	1 %	1.0		0 %
BARIADI	45.7		0 %			
MASWA	23.0	0.3	1 %	3.0	0.3	10 %
MEATU	13.7	1.3	10 %			
KAHAMA	19.3	2.7	14 %			

3.3 WATER FACILITIES DATA

RELIABILITY OF WATER FACILITIES
TABLES 3.3.1, 3.3.2, 3.3.3 AND 3.3.4
PAGES 25 AND 26

Explanations

1. The four tables present the average percentage of wells and domestic water points which, for any period of a month, did not give water. The reasons for not giving water can be of a technical nature (pump and/or well defect), can be caused by changed hydrological/climatological conditions or by managerial problems.
2. The criteria for reporting is "not giving water".
3. By far most of the IWP's reported on have all been rehabilitated or constructed under the present phase of the programme (1.7.1988 - 1.7.1992). All reported wells are equipped with a new pump. The majority of these pumps are of the SWN 80 type, a few SWN 85 direct-action pumps have been installed in Meatu and Kahama districts.

Monitoring objective

1. Is to inform the implementors about failing water supplies so that they can assist the villagers;
2. To be able to document the functioning of water supplies over longer periods of time.

Observations and comments

1. For the region as a whole, the average number of IWP's not giving water is increasing during the course of the year: from an average of 9.7% in the first quarter to 16.3% in the third quarter of the year. During the months of October, November and December the percentage of IWP's not giving water has decreased again to 14.4% but is still higher than during the first quarter.
2. This increase is largely to be explained by the lowering of the water table during the dry season in Shinyanga which normally is from August until November. In December 1991, however, rains had not yet started.
3. There are considerable differences between the districts. In Shinyanga Rural District, the increase is from 1.6% in the first quarter to 29% and 24.1% in the third and the fourth quarter respectively. The increase is largely due to lowering of the water table. Shinyanga Rural district is most hit by

changed hydrological conditions during the dry season.

Observations and comments

1. In all districts, throughout the year, a certain percentage of households is using unprotected sources for drinking. This can presently be explained by:
 - percentage coverage which is 52% for the reporting villages,
 - distance: VHW's quite often report on the distance of the IWP's (wells) being a reason for people not to use them.
2. Distance and prevailing coverage percentage (52%) for all reporting villages are related. The problem of distance can be solved (not always) by raising the number of wells per village. It is a must, when selecting the location for the new wells, to follow the preferences of the villagers and to consider present settlement + and migration patterns.
3. When comparing the quarters of the year, considerable differences in percentages of households using unprotected sources can be observed. The third quarter of the year the percentage of households using unprotected sources is reported to be the highest for the whole region: 44.9% of the households in the programme villages. The explanation for this increase is most likely the lowering of the water table during the dry season which causes IWP's not to give water. The relation between IWP's not giving water and percentage of households using unprotected sources is discussed under "Health and Sanitation data".
4. It might be doubted whether any promotion is done to stimulate villagers to use other IWP's in their village when the one they are usually using is not functioning. It can also be doubted whether this promotion would have any effect. Considering the workload of women, f.i. there is a limit to the distance they are prepared to go to get clean water.
5. From the monitoring data, the need for more IWP's per village can be concluded also, when objectives for sanitation and health are considered.
6. In Bariadi the trend is the other way round: from an average of 16.6% in January, February and March to an average of 9.3% during the last two quarters. This is caused by the fact that from January until May, 11 IWP's were not giving water because of lack of funds to run the diesel generator. Since June 1991, the piped system in Luguru village in Bariadi provides for water during a few hours per week.

WATER FACILITIES DATA 1991

Table 3.3.1 : Reliability of water facilities.
Period= Jan-Mar

District	JANUARY			FEBRUARY			MARCH		
	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water
SHINYANGA RURAL	40	1	3 %	40	1	3 %	40		0 %
BARIADI	49	2	4 %	49	11	22 %	52	12	23 %
MASWA	26	3	12 %	26	2	8 %	26	2	8 %
HEATU	14	2	14 %	15		0 %	15		0 %
KAHAMA	19	2	11 %	20	3	15 %	20	3	15 %
REGION	148	10	7 %	150	17	11 %	153	17	11 %

Table 3.3.2 : Reliability of water facilities.
Period= Apr-Jun

District	APRIL			MAY			JUNE		
	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water
SHINYANGA RURAL	40		0 %	40	1	3 %	40	3	8 %
BARIADI	54	11	20 %	54	12	22 %	54	3	6 %
MASWA	26	3	12 %	26	3	12 %	26	3	12 %
HEATU	15		0 %	15	1	7 %	15	1	7 %
KAHAMA	20	3	15 %	20	3	15 %	22	3	14 %
REGION	155	17	11 %	155	20	13 %	157	13	8 %

WATER FACILITIES DATA 1991

Table 3.3.3 : Reliability of water facilities.
Period= Jul-Sep

District	JULY			AUGUST			SEPTEMBER		
	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water
SHINYANGA RURAL	40	11	28 %	40	11	28 %	40	13	33 %
BARIADI	54	3	6 %	54	4	7 %	54	8	15 %
MASWA	26	2	8 %	26	4	15 %	26	2	8 %
HEATO	15	2	13 %	15	1	7 %	15	2	13 %
KAHAMA	22	4	18 %	22	5	23 %	22	5	23 %
REGION	157	22	14 %	157	25	16 %	157	30	19 %

Table 3.3.4 : Reliability of water facilities.
Period= Oct-Dec

District	OCTOBER			NOVEMBER			DECEMBER		
	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water	No of IWP(s) report.	IWP(s) not giving water	(%) not giving water
SHINYANGA RURAL	40	10	25 %	40	10	25 %	40	9	23 %
BARIADI	54	5	9 %	54	4	7 %	54	6	11 %
MASWA	26	3	12 %	26	2	8 %	26	3	12 %
HEATO	15	2	13 %	15	3	20 %	15	3	20 %
KAHAMA	22	3	14 %	22	3	14 %	22	2	9 %
REGION	157	23	15 %	157	22	14 %	157	23	15 %

AVERAGE NUMBER OF DAYS IWP'S NOT GIVING WATER PER MONTH,
FOR ALL DISTRICTS OF SHINYANGA -
TABLES 3.3.5, 3.3.6, 3.3.7 AND 3.3.8
PAGES 28 AND 29

Explanations

1. The tables show the average number of days IWP's have not been giving water for each district and for the region as a whole.
2. Each table presents the figures for one quarter of the year 1991.

Monitoring objectives

1. To monitor follow-up on reported IWP defects.

Observations and comments

1. It can be observed from the tables that, once an IWP is not giving water, it does so for the whole month: non-functioning IWP's did not give water for 28 days per month as an average for all five districts during the whole year 1991. Most of the wells which fall dry, are not giving water during a period of three months at least, part of these during six months (Shy. Rural district).
2. Other defects which cause non-functioning such as cylinders which have fallen into the well, usually take up to two months or more before repair.
3. The present computer programme does not yet facilitate registration of the duration of non-functioning of individual IWP's. The data from the village reports do allow such registration. For more accurate monitoring it is found important that computerized registration of the functioning of individual IWP's is made possible.
4. Tentatively it can be concluded that timely follow-up on reported non-functioning of IWP's is not taking place. In case of the dry wells, re-surveying is highly required. This should be done during the dry season. Re-surveying should start in July 1992.

WATER FACILITIES DATA 1991

Table 3.3.5 : Average number of days IWP's not giving water per month.

Period= Jan-Mar

District	JANUARY	FEBRUARY	MARCH
SHINYANGA RURAL	31.0	4.0	
BARIADI	31.0	25.5	31.0
MASWA	23.7	28.0	31.0
HEATU	29.0		
KAHAMA	31.0	28.0	31.0
REGION	28.4	24.9	31.0

Table 3.3.6 : Average number of days IWP's not giving water per month.

Period= Apr-Jun

District	APRIL	MAY	JUNE
SHINYANGA RURAL		2.0	29.0
BARIADI	30.0	30.1	23.7
MASWA	30.0	31.0	25.0
HEATU		10.0	17.0
KAHAMA	30.0	31.0	30.0
REGION	30.0	28.0	25.4

WATER FACILITIES DATA 1991

Table 3.3.7 : Average number of days IWP's not giving water per month.

Period= Jul-Sep

District	JULY	AUGUST	SEPTEMBER
SBINYANGA RURAL	28.5	31.0	30.0
BARIADI	31.0	23.8	30.0
MASWA	31.0	22.8	30.0
HEATO	25.5	27.0	30.0
KAHAMA	25.5	30.8	30.0
REGION	28.2	28.3	30.0

Table 3.3.8 : Average number of days IWP's not giving water per month.

Period= Oct-Dec

District	OCTOBER	NOVEMBER	DECEMBER
SBINYANGA RURAL	28.1	30.0	31.0
BARIADI	31.0	24.8	21.0
MASWA	29.7	30.0	31.0
HEATO	7.5	22.7	12.7
KAHAMA	31.0	30.3	31.0
REGION	27.5	28.1	26.0

SPARES TURNOVER (NUMBERS USED)
TABLES 3.3.9, 3.3.10, 3.3.11 AND 3.3.12
PAGES 32, 33, 34 AND 35

Explanations

1. The tables show the number and types of spares used for piped schemes and for shallow wells for the year 1991 (per quarter).
2. Type and number of spares used are summarized below.

Table 3.3.13: Type and number of spares used per quarter for 1991, for all districts of Shinyanga.

	<u>Quarter</u>			
	1st	2nd	3rd	4th
<u>Spares Shallow Wells</u>				
Nut M 16	1			
Grease		1		
Cement		2		
3" Pump cylinder				1
<u>Spares piped supply</u>				
Stopcock		1		

Monitoring objectives

1. The monitoring objective is to investigate type, quantity and timing of spares most required in order to establish a proper support system for VLOM also, it is aimed to establish the costs (per year) involved in the operation of a pump and piped scheme in order to be able to inform the villages when planning their water supplies and to assist them in proper budgeting for O&M.

Observations and comments

1. As stated before the turnover of spares has been very low in 1991. Two main factors can presently be forwarded to explain this:
 - All pumps which have been installed on the rehabilitated and constructed wells are new. It can be assumed that these pumps hardly need any replacement of worn parts during the first five years of functioning. This is confirmed by the low demand for spares in the monthly reports of the villages. By far most of the pumps in the 26 reporting villages have been installed after 1988.

- The fact that spares are hardly available; villages therefore cannot buy spares.
- 2. The present pumps are not expected to require replacement of essential parts for at least the coming five years. This means that this reporting/monitoring system will take quite some time (5-10 years) before it generates any realistic assessment of type, quantity and timing of spare requirements.
- 3. For that matter, the newly started local workshop for repair of SWN hand pumps in Shinyanga might generate quicker results. Here, pumps are being repaired which have been installed during the first half of the 1980's (mainly SWN 80 and 81). Data on repairs done and worn-out parts replaced are being registered and will be analyzed.
- 4. Provided spare parts become accessible to the villages the reporting and monitoring system can, on the long-term only, provide information on spare-part demand, costs involved in O&M and on the behaviour of the villagers. Would they indeed, when spares become available, spend money on these?

WATER FACILITIES DATA 1991

Table 3.3.9 : Spares turn - over -(number used):
Period= Jan-Mar

TYPE OF SPARES	CODE	SHINYANGA KURAL	BAKIAJI	NASWA	MEAYU	KAHAMA
PIPED SUPPLY						
BIBCOCK	P01					
STOPCOCK	P02					
GATEVALVE	P03					
UNION (PS)	P04					
OIL FILTER	P05					
FUEL FILTER	P06					
OTHER FITTINGS	P07					
OTHER SPAKE PARTS	P08					
SHALLOW WELL						
ARMITE BEARING	W01					
ANCHOR BOLT M-16	W02					
COMPRIBAND STRIP	W03					
2" FOOT VALVE	W04					
2.5" FOOT VALVE	W05					
3" FOOT VALVE	W06					
GREASE	W07					
KANGAROO PUMP	W08					
KANGAROO SPRING	W09					
NUT M-16	W10		1			
OIL PAINT (YELLOW)	W11					
2.5" PISTON ASSY	W12					
3" PISTON ASSY	W13					
2.5" PISTON CUP RUBBER	W14					
3" PISTON CUP RUBBER	W15					
3" PUMP CYLINDER	W16					
PUMP HEAD SWSO	W17					
PUMP STAND RINGWELL	W18					
PUMP STAND STANDARD	W19					
RH+PR - L-0750	W20					
RH+PR - L-1500	W21					
RH+PR - L-2000	W22					
RH+PR - L-3000	W23					
TEFLON TAPE (WOLL)	W24					
UNION GS 1.5"(M/F)	W25					
WASHER M16 (PLAIN)	W26					
CEMENT	W27					
BOLT MUMPROD	W28					

WATER FACILITIES DATA 1981

Table 3.3.10 : Spares turn-over (number used).
Period= April-Jun

TYPE OF SPARES	CODE	SHINTANGA MURAL	PARIADI	MASNA	MEATO	KAHANA
PIPED SUPPLY						
BIBCOCK	P01					
STOPCOCK	P02		1			
GATEVALVE	P03					
UNION (PS)	P04					
OIL FILTER	P05					
FUEL FILTER	P06					
OTHER FITTINGS	P07					
OTHER SPARE PARTS	P08					
SHALLOW WELL						
ARNITE BEARING	W01					
ANCHOR BOLT M-16	W02					
COMPRIBAND STRIP	W03					
2" FOOT VALVE	W04					
2.5" FOOT VALVE	W05					
3" FOOT VALVE	W06					
GREASE	W07		1			
KANGAROO PUMP	W08					
KANGAROO SPKING	W09					
NUY M-16	W10					
OIL PAINT (YELLOW)	W11					
2.5" PISTON ASSY	W12					
3" PISTON ASSY	W13					
2.5" PISTON CUP RUBBER	W14					
3" PISTON CUP RUBBER	W15					
3" PUMP CYLINDER	W16					
PUMP HEAD SWISS	W17					
PUMP STAND KINGWELL	W18					
PUMP STAND STANDARD	W19					
RH+PR - L-0750	W20					
RH+PR - L-1500	W21					
RH+PR - L-2000	W22					
RH+PR - L-3000	W23					
TEFLON TAPE (ROLL)	W24					
UNION GS 1.5" (M/F)	W25					
WASHER M16 (PLAIN)	W26					
CEMENT	W27			1		1
BOLT PUMPHOOD	W28					

WATER FACILITIES DATA 1981

Table 3.3.11 : Spares turn over (number used).
Period= Jul-Sep

TYPE OF SPARES	CODE	SHINYANGA MUKAL	BANIADI	MASWA	HEATU	LAHANA
PIPED SUPPLY						
BIBCOCK	P01					
STOPCOCK	P02					
GATEVALVE	P03					
UNION (PS)	P04					
OIL FILTER	P05					
FUEL FILTER	P06					
OTHER FITTINGS	P07					
OTHER SPARE PARTS	P08					
SHALLOW WELL						
BRONZE BEARINGS	W01					
ANCHOR BOLT M-16	W02					
COMPRIBAND STRIP	W03					
2" FOOT VALVE	W04					
2.5" FOOT VALVE	W05					
3" FOOT VALVE	W06					
GREASE	W07					
KANGAROO PUMP	W08					
KANGAROO SPRINGS	W09					
NUT M-16	W10					
OIL PAINT (YELLOW)	W11					
2.5" PISTON ASSY	W12					
3" PISTON ASSY	W13					
2.5" PISTON CUP RUBBER	W14					
3" PISTON CUP RUBBER	W15					
3" PUMP CYLINDER	W16					
PUMP HEAD SW60	W17					
PUMP STAND KINGWELL	W18					
PUMP STAND STANDARD	W19					
RH+PR - L-0750	W20					
RH+PR - L-1500	W21					
RH+PR - L-2000	W22					
RH+PR - L-3000	W23					
TEFLON TAPE (ROLL)	W24					
UNION GS 1.5" (M/F)	W25					
WASHER M16 (PLAIN)	W26					
CEMENT	W27					
BOLT PUMPING	W28					

WATER FACILITIES DATA 1991

Table 3.3.12 : Spares turn - over (number used).
Period= Oct-Dec

TYPE OF SPARES	CODE	SIRINYANGA MURAL	BARIADI	MASWA	MEATO	KAHAMA
PIPED SUPPLY						
BIBCOCK	P01:					
STOPCOCK	P02:					
GATEVALVE	P03:					
UNION (PS)	P04:					
OIL FILTER	P05:					
FUEL FILTER	P06:					
OTHER FITTINGS	P07:					
OTHER SPARE PARTS	P08:					
SHALLOW WELL						
ARNITE BEARINGS	W01:					
ANCHOR BOLT M-16	W02:					
CONPRIBAND STRIP	W03:					
2" FOOT VALVE	W04:					
2.5" FOOT VALVE	W05:					
3" FOOT VALVE	W06:					
GREASE	W07:					
KANGAROO PUMP	W08:					
KANGAROO SPRING	W09:					
NUT M-16	W10:					
OIL PAINT (YELLOW)	W11:					
2.5" PISTON ASSY	W12:					
3" PISTON ASSY	W13:					
2.5" PISTON CUP RUBBER	W14:					
3" PISTON CUP RUBBER	W15:					
3" PUMP CYLINDER	W16:		1			
PUMP HEAD SW630	W17:					
PUMP STAND RINGWELL	W18:					
PUMP STAND STANDARD	W19:					
RH+PR - L-0750	W20:					
RH+PR - L-1500	W21:					
RH+PR - L-2000	W22:					
RH+PR - L-3000	W23:					
TEFLON TAPE (ROLL)	W24:					
UNION GS 1.5" (M/F)	W25:					
WASHER M16 (PLAIN)	W26:					
CEMENT	W27:					
BOLT FORPROD	W28:					

3.4 HEALTH AND SANITATION DATA

NUMBER AND PERCENTAGE OF HOUSEHOLDS USING UNPROTECTED SOURCES FOR DRINKING
TABLES 3.4.1, 3.4.2, 3.4.3 AND 3.4.4.
PAGE 37 AND 38

Explanations

1. The tables show the numbers and the percentages per month of households using unprotected sources for drinking. Each table represents one quarter of the year 1991, providing information for all five districts.
2. Table 3.4.5 presents a summary for all five district for the whole year 1991. Because the use of unprotected sources might change per season, the percentages are presented per quarter of the year.

Table 3.4.5: Percentage of households using unprotected sources during the first, second, third and fourth quarter 1991, for all districts of Shinyanga.

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
SHY. RURAL	21.2%	24.8%	52.1%	39.4%
BARIADI	35 %	26.3%	41.4%	28.1%
MASWA	44.6%	41.4%	47.6%	49.7%
MEATU	19.4%	22.6%	54 %	39.8%
KAHAMA	30.2%	28.4%	23.8%	20.7%
REGION	31.2%	29.5%	44.9%	36.3%

Monitoring objectives

1. The main monitoring objective of this question is to follow up on the use of the IWP's by the villager's and when necessary for the Health Department to start promotion activities among the villagers to make use of the IWP's.

Table 3.4.1 : Number and percentage of households using unprotected sources for drinking.

Period= Jan- Mar

	SHINYANGA KURAL			BARIADI			MASWA			MEATU			KAHAMA		
	JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR	JAN	FEB	MAR
No of rep. Villages	5	6	6	5	5	6	5	4	5	2	2	2	4	4	4
Number of households	2326	2678	2673	2159	2154	2514	2327	1661	2497	915	914	915	1601	1601	1601
Number of hseholds using unpr. sources	290	635	648	576	960	860	516	536	1404	285	125	123	403	524	524
Percentage	12 %	24 %	24 %	26 %	45 %	34 %	22 %	32 %	56 %	31 %	14 %	13 %	25 %	33 %	33 %

Table 3.4.2 : Number and percentage of households using unprotected sources for drinking.

Period= Apr-Jun

	SHINYANGA KURAL			BARIADI			MASWA			MEATU			KAHAMA		
	APR	MAY	JUN	APR	MAY	JUN	APR	MAY	JUN	APR	MAY	JUN	APR	MAY	JUN
No of rep. Villages	7	7	5	7	7	4	5	5	5	2	2	2	4	4	3
Number of households	3152	3163	2155	3083	3083	1768	2313	2567	2575	915	915	915	1710	1812	1380
Number of hseholds using unpr. sources	700	785	620	990	900	290	1000	1104	964	120	189	313	641	428	321
Percentage	22 %	25 %	29 %	29 %	29 %	16 %	43 %	43 %	38 %	13 %	21 %	34 %	38 %	24 %	23 %

Table 3.4.3 : Number and percentage of households using unprotected sources for drinking.
Period= Jul-Sep

	SHINYANGA MURAL			BARIADI			MASWA			HEATU			LAHAMA		
	JUL	AUG	SEP	JUL	AUG	SEP	JUL	AUG	SEP	JUL	AUG	SEP	JUL	AUG	SEP
No of rep. Villages	6	6	5	3	4	7	6	5	5	2	2	2		4	4
Number of households	2831	2831	2406	916	1346	3092	2895	2588	2600	915	915	875		1812	1814
Number of hseholds using unpr. sources	1192	1631	1388	379	862	988	1338	1158	1239	343	338	287		448	418
Percentage	42 %	58 %	58 %	40 %	64 %	32 %	46 %	45 %	48 %	38 %	37 %	33 %		25 %	23 %

Table 3.4.4: Number and percentage of households using unprotected sources for drinking.
Period= Oct-Dec

	SHINYANGA MURAL			BARIADI			MASWA			HEATU			LAHAMA		
	OCT	NOV	DEC	OCT	NOV	DEC	OCT	NOV	DEC	OCT	NOV	DEC	OCT	NOV	DEC
No of rep. Villages	7	6	5	7	7	7	6	6	6	2	2	2	4	4	3
Number of households	3136	2833	2884	3093	3133	3135	2895	2905	2909	878	875	975	1814	1794	1213
Number of hseholds using unpr. sources	1468	985	724	632	988	1018	1498	1334	1498	271	397	420	413	368	216
Percentage	47 %	35 %	35 %	20 %	32 %	33 %	52 %	46 %	52 %	31 %	45 %	43 %	23 %	21 %	18 %

RELATION IWP'S NOT GIVING WATER VS. USAGE OF UNPROTECTED WATER SOURCES.
FIGURES 3.4.1, 3.4.2, 3.4.3, 3.4.4 AND 3.4.5
PAGES 41, 42, 43, 44 AND 45

Explanations

1. The percentage of households using unprotected sources varies per district and per quarter.
2. Per district, the figures 3.4.1, 3.4.2, 3.4.3, 3.4.4 and 3.4.5 show the changes in percentages of households using unprotected sources during the course of the year 1991 in relation to the varying percentages of IWP's not giving water during 1991.

Observations and comments

1. In Shinyanga Rural District the increase in percentage of households using unprotected sources is highest for all districts in Shinyanga. From 21.2% during the first quarter to 52.1% in the third quarter. At the same time, a considerable increase in IWP's not giving water for the SRU district has been reported. From an average of 1.6% during the first quarter to an average of 29% in the third quarter.

The simultaneous increase of IWP's not giving water versus usage of unprotected water sources is clearly shown in figure 3.4.1. (page 41) for Shinyanga Rural District. The increase in non-functioning IWP's is due to the lowering of the water table during the dry season. It is concluded that the increase in IWP's not giving water causes more households to use unprotected sources in Shinyanga Rural District.

2. For Bariadi district the figure (3.4.2) shows contradictory evidence as concerns the relation increase in IWP's not giving water and increase in households using unprotected sources. During the third quarter, the percentage "IWP's not giving water" is decreasing from 16% to 9.3%, while there is an increase in households using unprotected sources, from 26.3% to 41.4%. The increase in IWP's not giving water is to be attributed to 11 DWP's which have become operational in June 1991. Before, these had been reported as IWP's not giving water. When the average percentage of IWP's not giving water is corrected leaving out these 11 DWP's, the following can be observed.

During the third quarter, the percentage wells not giving water increased with 6.8% (an average of 5 wells per month), to 9.3%. Figure 3.4.2 (page 42) shows this increase in the line wells not giving water. This tallies with an increase of these households using unprotected sources during the third quarter and can explain this increase. The more so since these wells are located in several villages which can lead to relatively

large numbers of households using unprotected sources when there are only few wells in the village. Also, the 11 DWP's in Luguru village gave water for some 6 hours per week only, which means that the operation of this piped scheme might not necessarily lead to less households using unprotected sources.

The decrease in households using unprotected sources during the fourth quarter can presently not be explained.

3. In Maswa district, percentage of households using unprotected sources is increasing gradually throughout the year. From 44.6% during the first quarter to 49.7% during the last quarter. The relation which can be observed here is that Maswa district scores the highest on percentage of households using unprotected sources and the lowest on coverage percentage (32%) of all Shinyanga districts.

However, as figure 3.4.3 (page 43), shows the relation between percentage of households using unprotected sources and percentage of IWP's not giving water is not equivocal. In fact in Maswa a very slight decrease in IWP's not giving water can be observed whereas the percentage of households using unprotected sources increases (third quarter).

4. For both Meatu, and Kahama districts (figures 3.4.4 and 3.4.5) the data reported do not confirm that increasing numbers of IWP's not giving water necessarily lead to growing numbers of households using unprotected sources.
5. Since health and sanitation are important aspects of the programme, the monitoring on the use of clean water has been included in the reporting and monitoring system.

It can be concluded that the monitoring system presently does not provide sufficient information that the increase in non-functioning IWP's leads to more households using unprotected sources. Only in the district of Shinyanga Rural this relationship has been seen. This might be due to the relatively high percentage of IWP's (all wells) involved (33%), which is the highest percentage for all districts.

It could also be assumed that the data reported (for numbers of households only) are not valid for all the districts or that other factors determine the usage of unclean water. Both assumptions suggest that reporting on this aspect might have to be improved.

relation IWPs not giving water vs usage of unprotected water sources

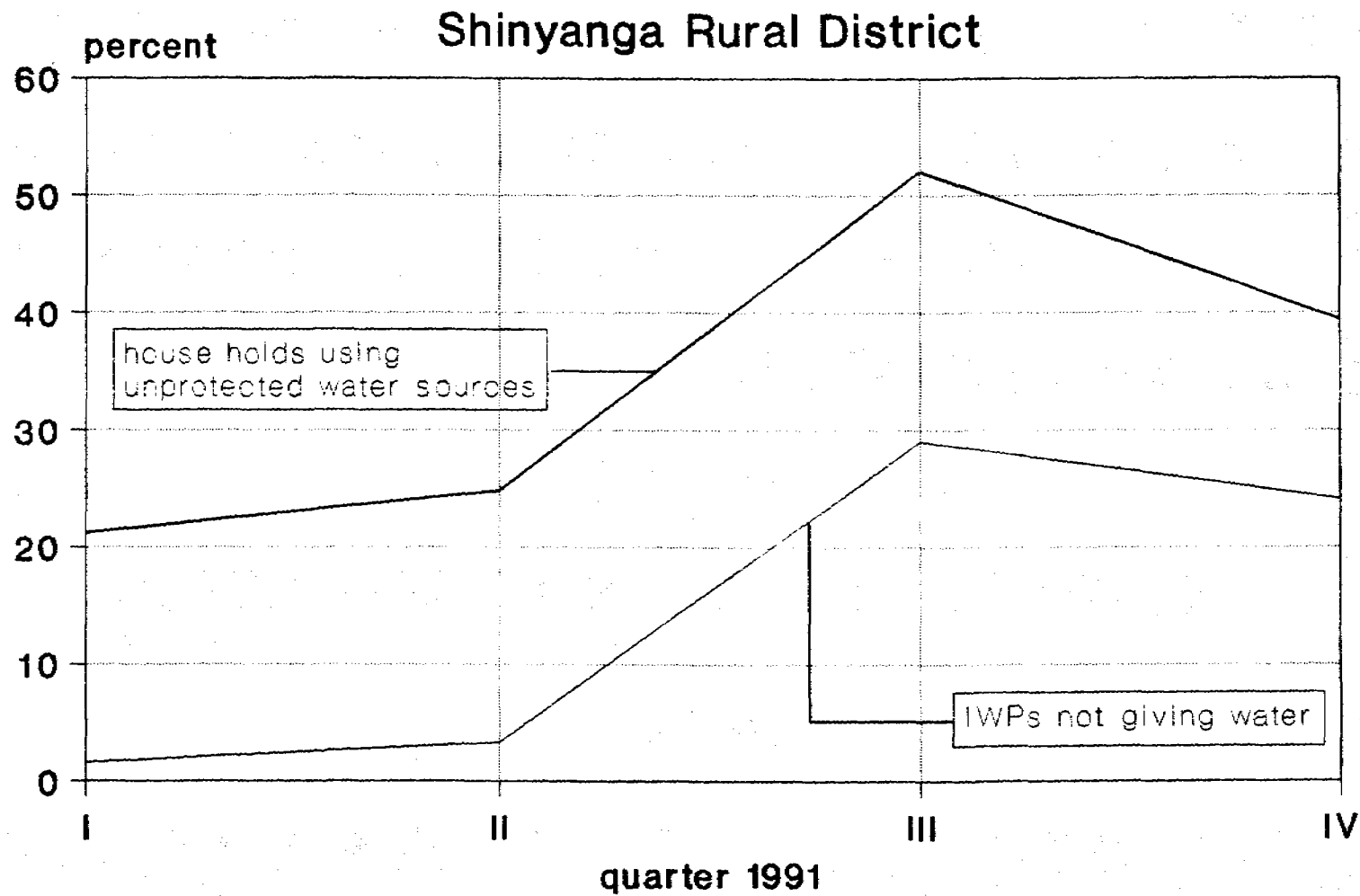


Figure 3.4.1

relation IWPs not giving water vs usage of unprotected water sources

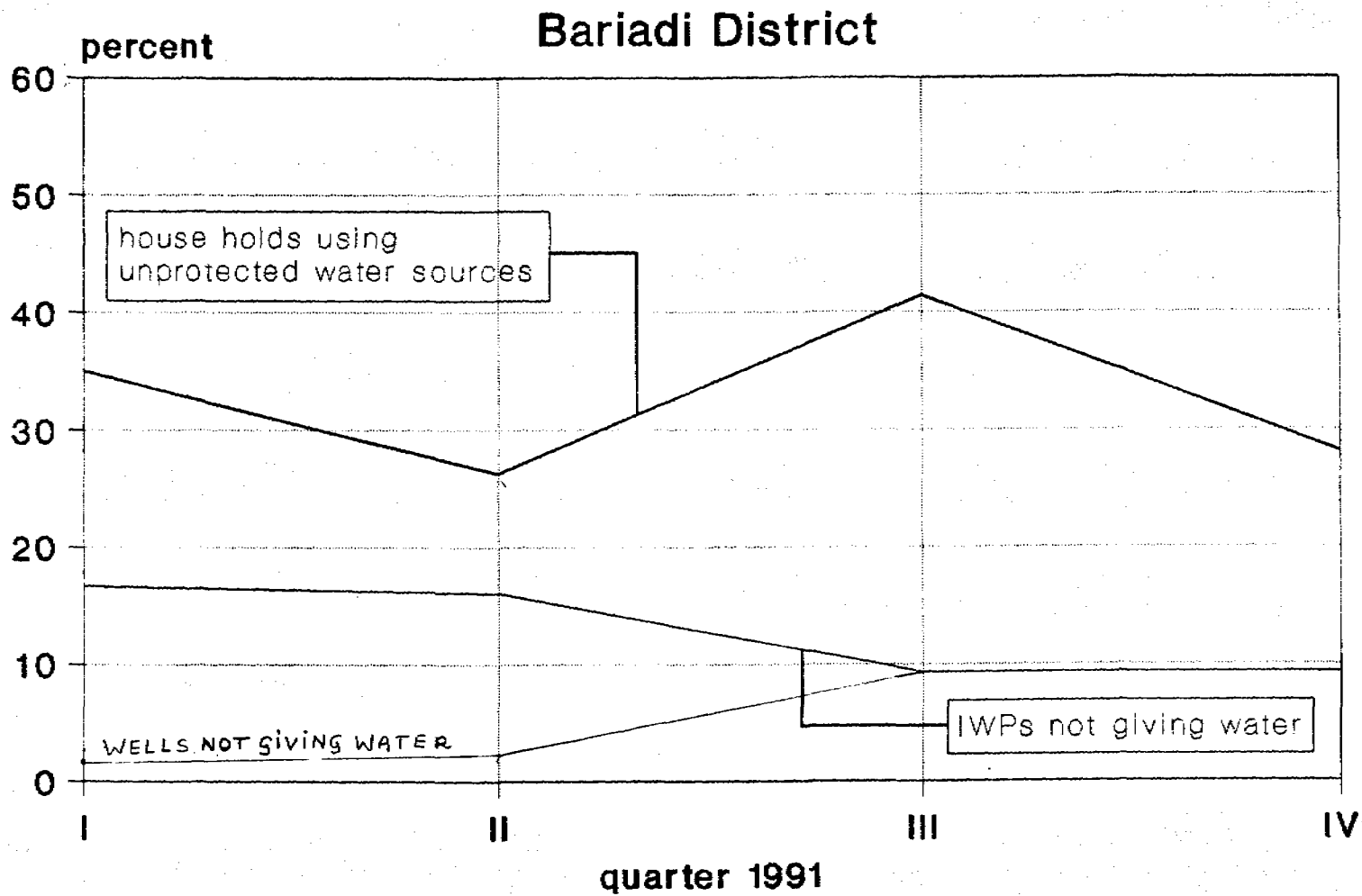


Figure 3.4.2

relation IWPs not giving water vs usage of unprotected water sources

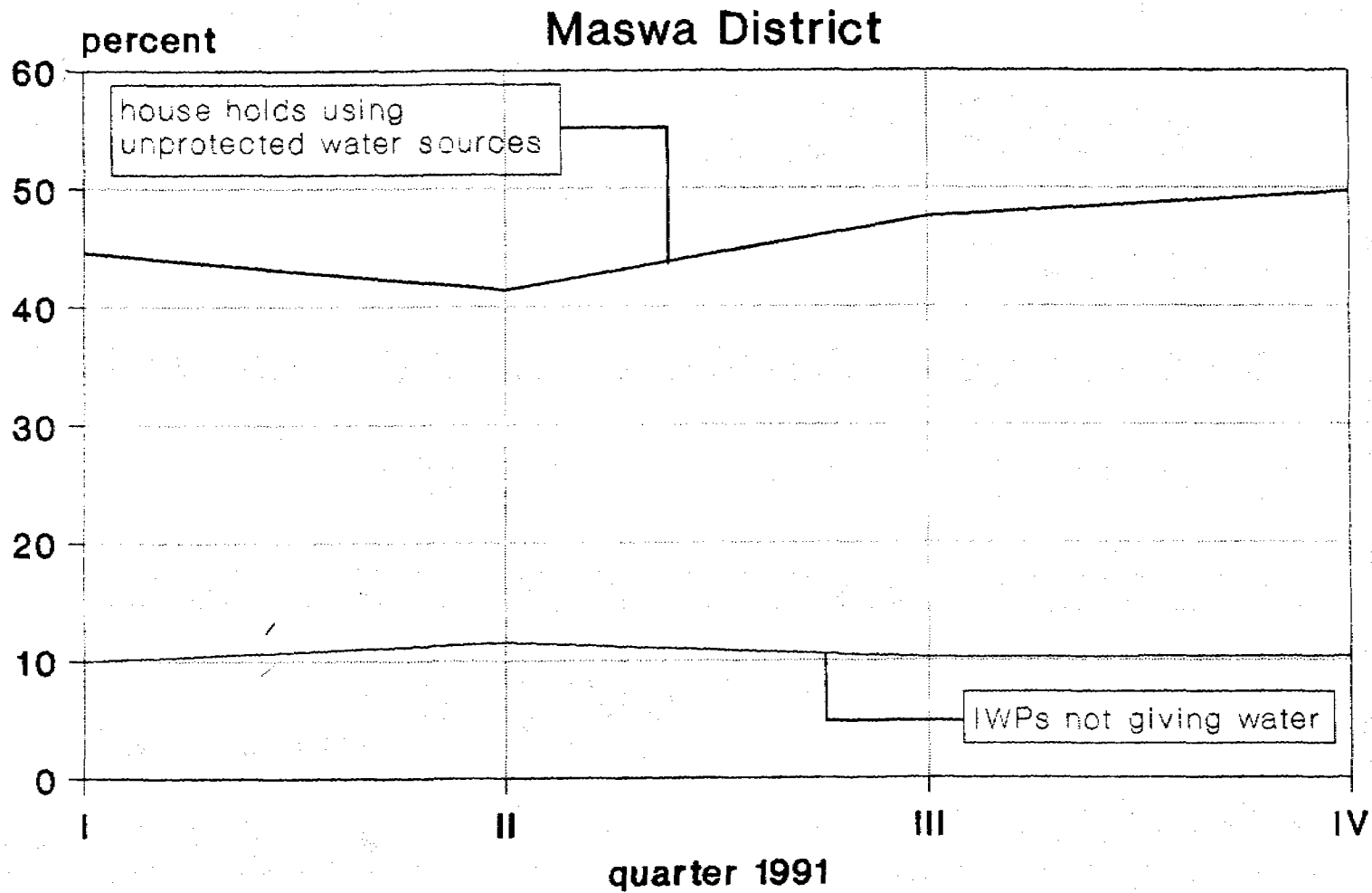


Figure 3.4.3

relation IWPs not giving water vs usage of unprotected water sources

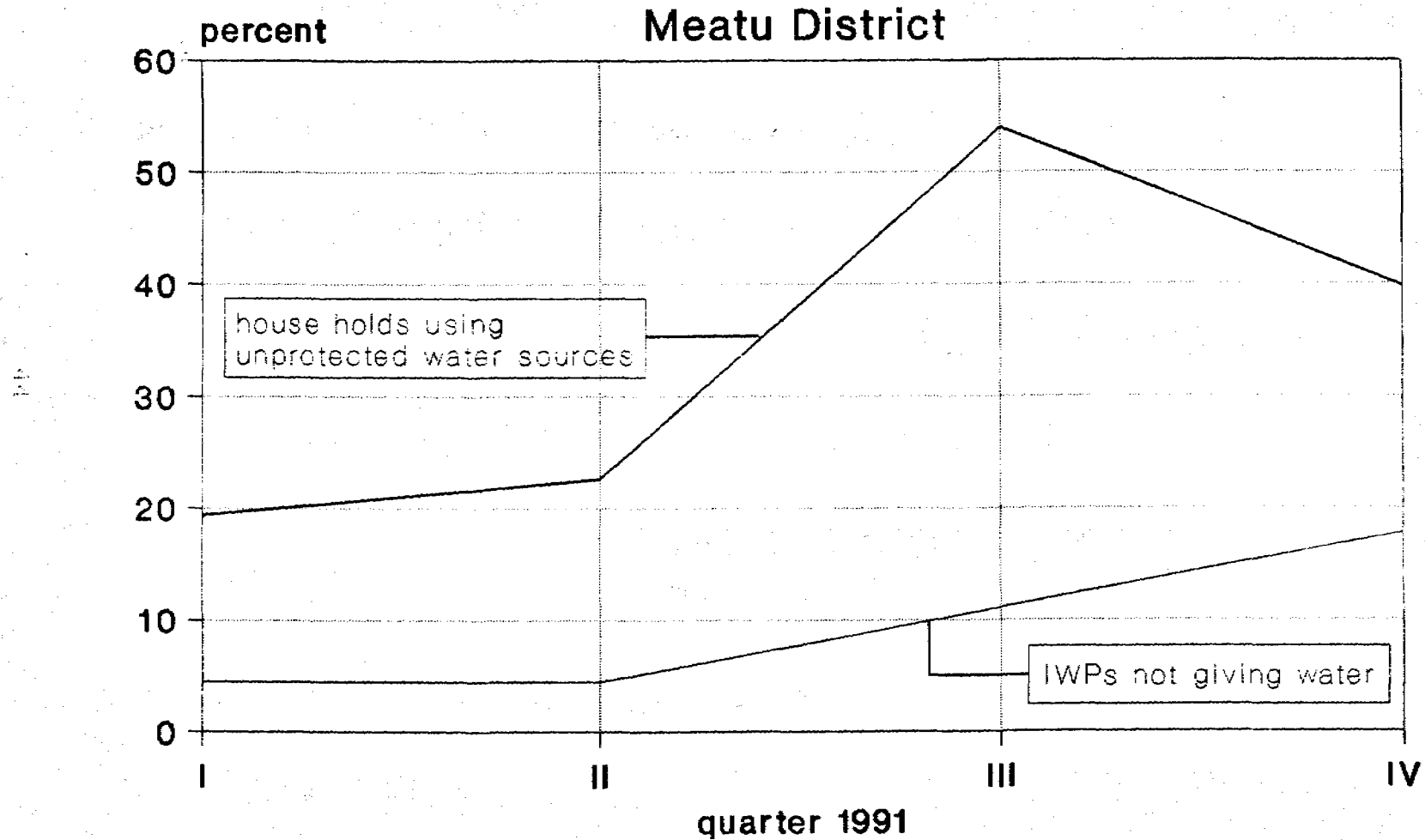


Figure 3.4.4

relation IWPs not giving water vs usage of unprotected water sources

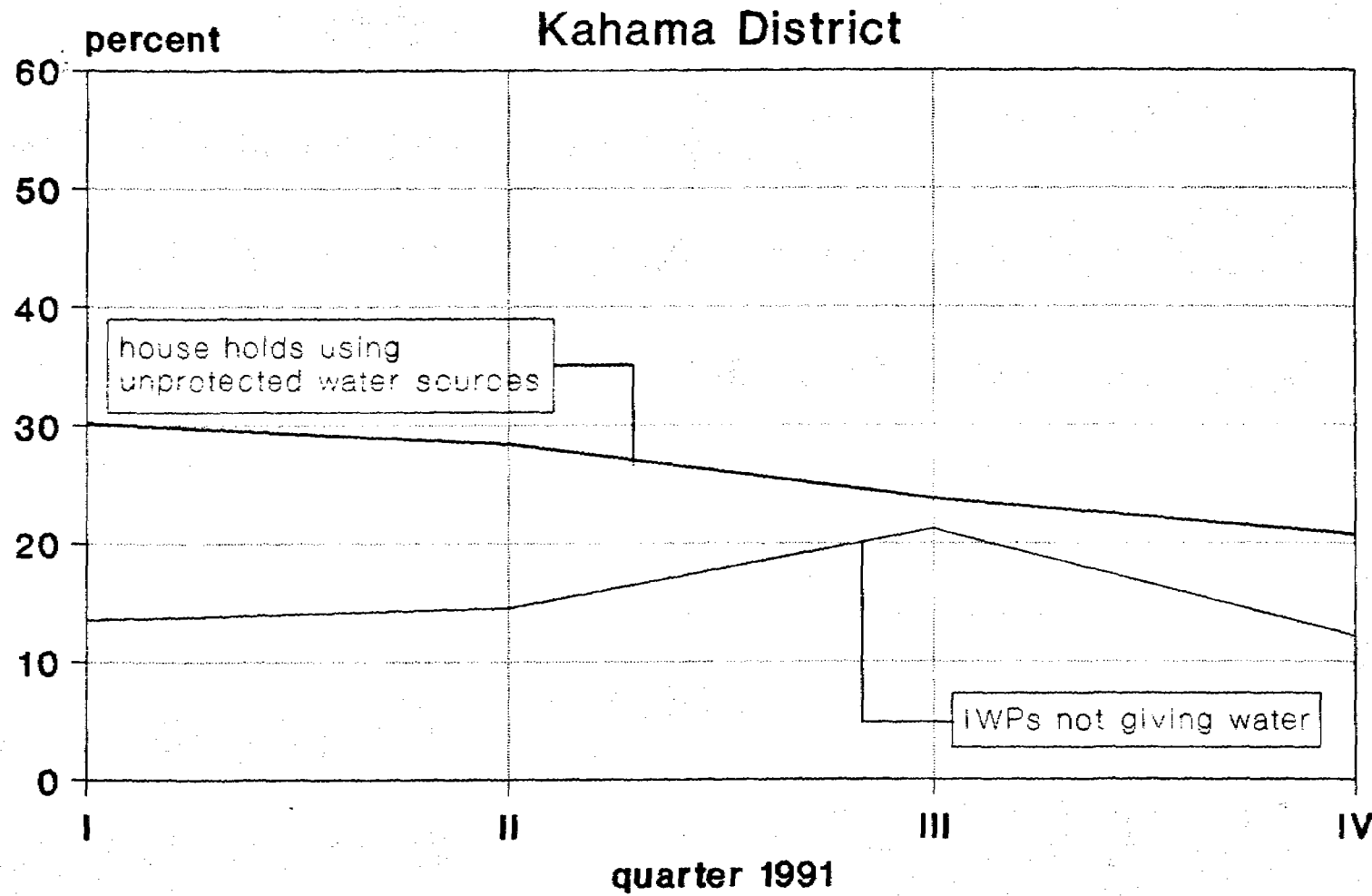
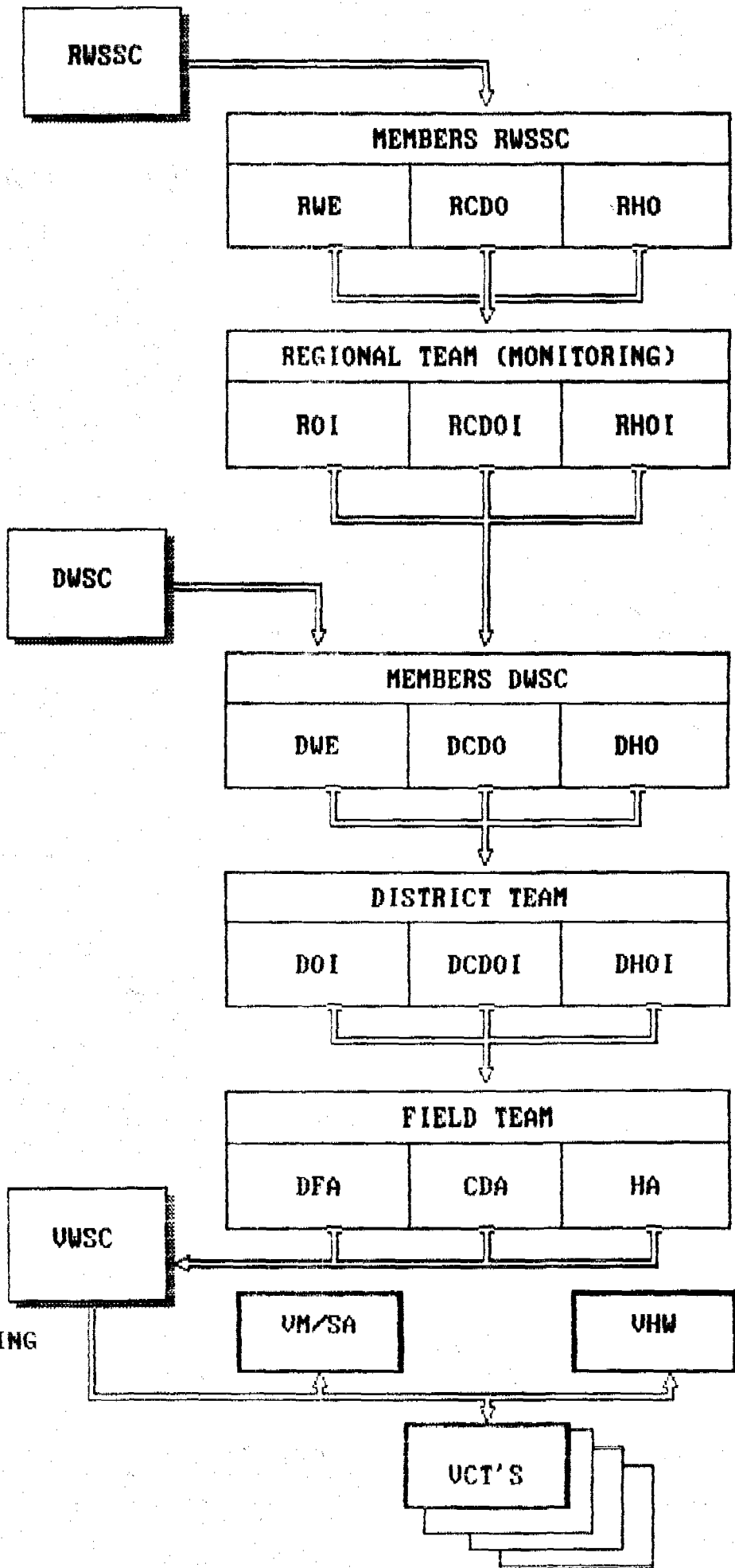


Figure 3.4.5

ORGANIZATION CHART MONITORING



MONITORING

ORGANIZATION CHART REPORTING

