AN EVALUATION

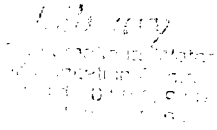
of the

QACHA'S NEK

VILLAGE WATER SUPPLY PROJECT

FUNDED BY

IRISH AID



by

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The contributions from all the above have assisted in preparing a report, which we hope, will be useful to both the donors and to DRWS.

1.0 INTRODUCTION

Sechaba Consultants were commissioned by Irish Aid to carry out an evaluation of the Qacha's Nek Village Water Supply Project. Irish Aid has supported the project since 1990. Three reviews have previously been undertaken; in February 1991, in July 1993, and in January 1994.

Past reviews concentrated on the progress of the particular two year phase. This evaluation encompasses the total period of Irish support for Qacha's Nek district. The establishment of a national data base in 1994/95 facilitated this objective.

Various methodologies were used in order to obtain the views and experiences of the major stakeholders involved in the construction of water supply systems. These are outlined after briefly summarising Irish Aid involvement with the Department of Rural Water Supplies (DRWS). DRWS was upgraded to departmental status in 1995. Previously DRWS was known as Village Water Supply Section (VWSS).

1.1 Brief History of Irish Aid Involvement

The Government of Ireland has been supporting the Department of Rural Water Supply through its Bilateral Aid Programme (BAP) since 1987.

Initially the support was for a handpump programme in Berea District. This involved the drilling and installation of 256 handpumps in 28 villages in Berea district. The programme was expected to be completed in 12 months, and lasted for about 16 months to November 1988. In August 1988, Irish Aid funded another programme in Leribe and Butha Buthe districts. A further 250 handpumps were installed in 16 months. In total in the two projects 489 handpumps were installed serving 44,000 people.

In May 1988, a year after the programme commenced, a review found that engineering and construction standards were high, and reporting and monitoring procedures were good. Concern was expressed that maintenance problems were likely in the future.

In October 1989, a survey of the handpumps in Berea was undertaken, which found 98% of handpumps operational. In spite of these initially positive findings, two months later, in December 1989 a second review[1] took place, which recommended:

- Irish BAP should "refrain from funding any further borehole and handpump programmes for the time being" because of "possible (future) maintenance problems and the need to control numbers of new handpump installations".

[1] Second Review of Irish Bilateral Assistance to the Village Water Supply Section (VWSS) of the Ministry of Interior, Chieftainship and Rural Development by G.P. McCann, Development Corporation Division, Department of Foreign Affairs, Dublin. December 1989.

- Irish BAP would be "better advised at present to turn its attention towards more easily sustainable water supply systems, such as gravity systems in the mountain areas of the country".
- Five years funding should be allocated in order to provide VWSS with some degree of continuity and security. This was recommended in view of the withdrawal of USAID, which had provided over 50% of total VWSS funds between 1981 and 1989.

It is relevant to note that a month before the review the Consulate was presented with a proposal to fund gravity systems in Qacha's Nek district. The draft proposal had the ambitious target of serving 10,000 people with gravity systems within two years. This was necessary to achieve the wider goal of complete coverage by the year 2000.

Between 1969 and 1984, VWSS served 1600 people in Qacha's Nek district. In the early days, operations were organised through the office in Maseru; and later through the Mohale's Hoek office. In 1985 VWSS decentralised operations and a compound was constructed in Qacha's Nek town. This compound comprised an office, a storeroom and a few staff houses. Progress started to take off after this, as noted in the following table:

Table 1: Population Served by VWSS in Qacha's Nek after office built

Year	Pop Served
1985	500
1986	1650
1987	2690
1988	2800
1989	3050
Total	**10,690**

At the end of 1988 the total population served was 19,200 (including the activities of NGOs). This amounted to 30.1 per cent of the rural population, estimated at 63,800. Qacha's Nek had the second lowest coverage of the 10 districts in Lesotho. During this period (1985-88) USAID provided most of the funds, with the USC Canada supplementing them in 1989.

1.2 Evaluation Methodology

Various methods were utilised in the evaluation. These included:

- **The National Data Base** contains information of all known water supply systems in Lesotho. The data base was established between 1993 and '95, during which time practically all water supply systems were inspected. The survey was conducted in Qacha's Nek district in early 1995. This was analysed to record many technical and

social aspects relating to the existing water supply systems in Qacha's Nek. Results were compared with the two other mountain districts; Mokhotlong and Thaba Tseka.

During the initial compilation of the data base nine villages were omitted in Qacha's Nek district due to inaccessibility. During this evaluation the research team inspected five of the nine projects and five systems recently completed.

- A **one-day Workshop** was conducted with the Qacha's Nek staff. The methodology used was SWPO (or SOFT). Participants concentrated on the successes, weaknesses and potentials. Refer to Annex 1 for a description of this methodology.
- Discussions and meetings were held with DRWS staff, from Qacha's Nek as well as from the Head Office in Maseru.
- **Semi-structured Interviews** were conducted with 239 villagers from 14 villages. Village perceptions were gained regarding the project construction phase and post-construction experiences. An example of the questionnaire can be found in Annex 2.
- **Semi-structured Interviews** were conducted with 14 Village Water Committees. These were more detailed than the village interviews, and were held with as many Village Water Committee members as possible. An example of the questionnaire can be found in Annex 2.

Irish Aid when determining the terms of reference wished to ensure that the evaluation would also be of benefit to DRWS. Consequently, DRWS personnel contributed in its formulation.

1.3 DRWS Project Cycle

The construction of a water supply system commences with the Village Liaison Officer (VLO) collecting initial information from the village. Where possible gravity systems are constructed. In the mountain districts these systems predominate. Spring measurements should be collected over a two year period, in order that minimum and maximum readings are more reliable. The spring measurements and preliminary survey are undertaken by the Senior Technical Officer (STO), with the assistance of the VLO. During this period meetings are held with the villagers at which village and DRWS responsibilities are outlined. The villagers are required to elect a Village Water Committee (VWC). Details regarding the tasks required of the VWC are provided in the relevant sections. The village population is estimated, and a detailed survey is then carried out by the STO, with the assistance of the draughtsman. The STO and/or the draughtsman calculates the hydraulic variants, and draws up the schematic diagram, the hydraulic profile and the site plan. The material requirements and cost estimates are then calculated.

Over recent years DRWS have been developing methodologies to improve construction progress. A construction schedule has recently been introduced. A technical report is completed which, together with the above information, comprise a project file. This is checked by the District Engineer (DE). The DE submits the project file to the Regional Engineer (RE), who forwards it to the National Construction Engineer in Maseru for final approval.

After the project has been approved, the Construction Supervisor in conjunction with the DE organises materials and transport. A meeting is held with the Village Water Committee to arrange labour requirements, and trench digging and stone shaping activities commence. Another *pitso* (village meeting) is held and one or two masons are stationed in the village, and construction commences.

Activities are monitored utilising Monthly Site Reports, which are completely by construction supervisors, and Monthly Progress Reports, which the DE submits to the RE. Every three months the RE completes a Quarterly Progress Report, a summary of the Monthly Reports, and submits it to the National Operations Engineer.

On completion of the system the DE carries out a final inspection and compiles the Final Report which is submitted, via the RE, to Head Office.

1.4 Staffing Levels

The staff at the Qacha's Nek office currently consists of 26 people. The following table provides a summary:

Table 2: Staffing in Qacha's Nek

Number	Position	Funded by
1	District Engineer	APSO
1	Senior Technical Officer	Irish Aid
1	Draughtsman	Irish Aid
2	Construction Supervisors	Irish Aid/GoL
1	Maintenance Supervisor	Irish Aid
1	Village Liaison Officer	Irish Aid
12	Masons	Irish Aid
1	Store Keeper	GoL
1	Accountant/Office Assistant	GoL
1	Mechanic	GoL
1	Driver	GoL
1	Labourer	GoL
3	Watchmen	GoL

As shown 17 of the 26 staff are funded by Irish Aid.

2.0 PRODUCTION OUTPUT

One of the major factors used to determine efficiency is the numbers of people served and the number of projects completed. Each year (usually in May/June) DRWS compiles the annual review. The latest one is currently under preparation. However, Head Office staff assisted in providing the relevant information. The following table, derived from the last six annual reviews and work plans, compares planned output with achieved output. Qacha's Nek is compared with the other two mountain districts.

Table 3: Comparisons of Planned and Actual Output

Year	Plan / Actual	QACHA'S NEK		MOKHOTLONG		THABA TSEKA	
		Pop.	No. of Projects	Pop.	No. of Projects	Pop.	No. of Projects
1990	*Plan*	*5000*	*5*	*3000*	*6*	*3000*	*6*
	Actual	3230	5	3125	6	2132	6
1991/92	*Plan*	*7230*	*12*	*3130*	*9*	*4500*	*11*
	Actual	3950	9	2090	6	1832	5
1992/93	*Plan*	*4550*	*9*	*4425*	*11*	*6277*	*12*
	Actual	6060	10	2670	9	2974	9
1993/94	*Plan*	*6790*	*9*	*3995*	*11*	*6230*	*12*
	Actual	2650	6	2935	7	3216	4
1994/95	*Plan*	*4290*	*11*	*5418*	*14*	*5402*	*12*
	Actual	3989	10	2408	8	2367	4
1995/96	*Plan*	*3500*	*6*	*5461*	*18*	*4470*	*11*
	Actual	2240	6	3124	16	1460	6
TOTAL	***Plan***	***31,360***	***52***	***25,429***	***69***	***29,879***	***64***
	Actual	**22,119**	**46**	**16,352**	**52**	**13,981**	**34**
Average	***Plan***	*5227*	*8.7*	*4238*	*11.5*	*4980*	*10.7*
	Actual	**3687**	**7.7**	**2725**	**8.7**	**2330**	**5.7**

As shown, Qacha's Nek's performance is generally superior to that of both Mokhotlong and Thaba Tseka. The average number of people served is nearly 60% more than Thaba Tseka, and 35% more than Mokhotlong. This equates to serving more than 8,000 additional people compared to Thaba Tseka, and 5,750 more than Mokhotlong. However, Mokhotlong has constructed a few more projects.

Districts have invariably over-estimated the numbers of people planned to be served and the number of projects to be completed. In Qacha's Nek and Mokhotlong actual population coverage has been about two thirds of that planned. Thaba Tseka has served less than half the number planned.

The table must be considered in relation to the number of field staff and the size of the village populations. Thaba Tseka has ten field staff, Mokhotlong has eleven, and Qacha's

Nek twelve. Assuming that field staff numbers have remained more or less constant over the past six years, the average population served per field staff per year is noted below:

Table 4: Average Population served per year per Field Staff

District	Population
Qacha's Nek	307
Mokhotlong	248
Thaba Tseka	233

Again Qacha's Nek has performed well. The table shows that the district's performance is 32% greater than Thaba Tseka, and 24% more than in Mokhotlong.

Conclusion: The performance of Qacha's Nek district has been significantly better than the other two mountain districts. Over the past six years 60% more people have been served compared to Thaba Tseka, and 35% more than in Mokhotlong. In addition, although Qacha's Nek has more field staff, output per field staff is greater than the other two districts.

3.0 DATA BASE FINDINGS

For the purposes of this evaluation all systems completed in or after 1990 are considered to have been funded by Irish Aid[2]. Unfortunately, a number of project files do not contain the final reports, and so it is not possible to precisely isolate ones funded by Irish Aid.

In the following sections the performance of the district is assessed in comparison with the other mountain districts. The data for the following sub-sections is from the national data base.

The data base was manipulated such that only the three mountain districts were included. All systems built by NGOs were excluded, and also systems constructed before 1990 were eliminated. Thus, only systems built by DRWS after 1990 in Qacha's Nek, Mokhotlong or Thaba Tseka have been included.

Three handpump projects are listed in the data base, in Thaba Tseka district. These have been excluded. The analysis covers waterpoints and gravity systems and includes a few solar powered pumping systems.

A short explanatory note on definitions is required.

- A **gravity system** consists of one or more spring catchments, siltboxes, storage tanks and pipes which distribute water to a number of standpipes.
- A **water point** (WP) consists of a storage tank located close to a spring, and equipped with a tap.

[2] It is likely that at least some of the projects completed in 1990 were with some USSC funding.

- A **system** is an independent self-contained water supply; for mountain areas this is either a gravity system, a water point or a solar system.
- A **project** is an intervention in a given area. It usually consists of new construction works in an area where nothing previously existed. However, it may involve rehabilitating or extending an existing system. It usually consists of one village, but can include more than one system and cover more than one village. For example one gravity system may extend to several villages. Alternatively in one village a gravity system may serve part of the village with a waterpoint (or a separate gravity system) serving the remaining households. Both examples would be classified as one project.
- A **collection point** (CP) is any place where water can be drawn. This is a standpipe on gravity and pumped systems, or a tap on either a waterpoint or on another tank.

The following table provides a summary of the projects included in the analysis:

Table 5: Summary of Projects included in the Data base Analysis

Type of Project	Qacha's Nek	Mokhotlong	Thaba Tseka
only gravity	20	16	13
only waterpoint (WP)	-	1	3
only pumped (solar)	-	-	2
gravity and WP	4	8	3
gravity and pumped	1	1	3
WP equipped with HP	-	-	1
Total	**25**	**26**	**25**

Coincidentally, the data base contains practically equal number of projects for each district. It was originally planned to include projects inspected during this evaluation, which were completed by DRWS between 1990 and early 1995. However, due to the near equal distribution this was not done.

It can be noted that the number of projects in the above table is less than that in table 2. This is partly due to the fact that the inspection took place in late 1994/early 1995 and partly because a few projects were inaccessible at the time of the inspection and consequently not incorporated. However, the difference, both the number of projects completed and in the population served is greater than expected. Discrepancies were found in all districts, and further possible explanations of the reasons are provided in the report which summarised the inspection findings, (refer to *Rural Water Supply Systems in Lesotho - Findings from a Nation-wide Inspection, Sechaba Consultants, August 1995*).

The population served in relation to the number of projects and villages is noted below:

Table 6: Populations per Project and per Village

	Total population served	Population per project	Population per village
Qacha's Nek	11,245	450	288
Mokhotlong	10,064	387	305
Thaba Tseka	8573	373	296

The table shows that the average village population is similar for the three district, and that Qacha's Nek are serving more people per project.

3.1 Functioning

An important indicator of the success of a project is the extent to which the system functions. The next table shows the number of projects functioning, the number of villages served, the number of collection points (CPs) installed and the number working.

Table 7: Functioning of Projects and Collection Points

District	No. of projects	No. at least partially functioning	No. 100% functioning	No. of villages served	No. of CPs installed	No. of CPs Working
Qacha's Nek	25	25	18	39	196	187
Mokhotlong	26	26	17	33	170	153
Thaba Tseka	25	23	16	29	146	100

Of the three districts Qacha's Nek has the best record. The percentage of collection points functioning is 95% in Qacha's Nek, 90% in Mokhotlong, and 68% in Thaba Tseka. The lower percentage functioning in Thaba Tseka is perhaps partially due to the cold weather conditions during the time of the inspection. The two systems completely not functioning contain 23 CPs. If it is assumed that all these were non functional due to frozen pipes 84% would be working.

Conclusions: These results support the findings from section 2. Qacha's Nek has the highest percentage of functioning systems and collection points, and in addition has served more villages.

3.2 Condition

So far no indication has been given regarding the condition of existing systems. A supply may be functioning but it may be in a poor state of repair. In many places in the mountain districts it is often not possible to dig trenches for the pipelines, due to the complete lack of topsoil. In such places the pipeline should be protected with dry stone walling, and in

vulnerable places further protected with a weak mix of cement mortar. This is an arduous task, and in all districts sections of exposed pipe were observed. In Qacha's Nek 12 of the 25 projects had some exposed pipeline. This is less than in the other two districts, where 17 projects had exposed pipes in Mokhotlong and 15 in Thaba Tseka. Only one incidence of a pipe leaking was found, in Thaba Tseka.

The condition of the tapstands in all three districts was good, with only one or two minor faults in each district. However, in Qacha's Nek 30% of the taps had been changed. This is far greater than the other two districts where only 4% had been changed. The reasons for this are not known.

When undertaking the inspection spring catchments and siltboxes were not examined, but storage tanks were. Seven of the 33 tanks leak (21%). This is high compared to Mokhotlong (only 1 of 62 tanks) and Thaba Tseka where 3 of 36 leaked. Although the extent of leakage is not known, it indicates a lower standard of workmanship.

Conclusions: In general construction standards are high. It is recommended that the causes of the leaking tanks and the reasons for frequent tap changes are investigated. Greater attention should be given to protecting exposed pipes.

3.3 Levels of Service

There are three major factors relating to the level of service: the population per collection point, the distance to a collection point (CP), and the quantity of water obtainable.

The population per CP is found by dividing the population by the number of CPs. Consequently, it is assumed that within a project equal numbers of people use each CP. DRWS aim to serve between 80 - 120 people per collection point. No more than 150 persons should be served by one collection point. The following table shows the number of projects with various categories of population per collection point. The table distinguishes between the level of service provided according to the initial project design and the actual level of service at the time of the inspection. This latter figure is dependent upon the number of CPs working.

A relatively large number of categories have been used in order to depict the variations both between the districts and within districts.

Table 8: Population per Collection Point (categories)

No. of People per Collection Point (CP)	QACHA'S NEK		MOKHOTLONG		THABA TSEKA	
	per project Design	per working CP	Design	per working CP	Design	per working CP
< 20	2	2	0	0	1	1
20 - 40	4	3	4	4	4	4
40 - 60	5	6	10	8	2	2
60 - 80	7	6	8	8	1	4
80 - 120	5	5	3	4	6	7
120 - 150	1	1	0	1	3	2
150 - 300	-	1	0	0	3	0
> 300	1	1	1	1	3	3
Total	25	25	26	26	23	23

The 2 systems in Thaba Tseka that were completely not functioning were excluded.

In all districts only a minority of projects are designed in accordance with the DRWS standard. Thaba Tseka has tended to underserve as much as overserve, whereas in Qacha's Nek and MK most projects are designed to serve less than eighty persons per CP. The average number of people per collection point is shown below:

Table 9: Population per CP (mean)

Average population per CP	At time of system design	per working CP
Qacha's Nek	57	60
Mokhotlong	59	66
Thaba Tseka	59	85

The above results are remarkably similar for all districts, and indicate that the level of service objectives are being exceeded. This is beneficial from the villagers viewpoint, and takes into account future population increases. However, from a design viewpoint it indicates misallocation of resources. The reasons for increasing the levels of service were not examined. Perhaps DRWS staff fall under the influence of village pressure to install additional collection points.

The distances to collection points were estimated by the research team members who undertook the inspection. DRWS aim to site collection points within 150 metres of households. The percentage of

The percentage of households within a village having to travel over 150 metres to a collection point was estimated to be:

Table 10: Households travelling > 150 m to a CP

District	% of Households
Qacha's Nek	5
Mokhotlong	16
Thaba Tseka	12

The above results show that Qacha's Nek district has performed well. However, it is not possible to indicate the degree the distance limits have been exceeded. For example, the percentages of households within, say, 50 metres is not known.

It is difficult to obtain reliable figures regarding the quantity of water obtainable. An attempt was made to do this during the nationwide inspection, but the results were heavily dependent on the amount of rainfall in the preceding weeks. Consequently, no figures have been quoted. However, the results from the village questionnaires (section 4) indicate no complaints regarding shortage of water.

Conclusions: The district is exceeding the DRWS level of service standards. This indicates a misallocation of resources. The situation is similar in Mokhotlong and Thaba Tseka districts, and consequently it is recommended that the situation is assessed on a national basis. Research needs to be undertaken to ascertain the levels of service acceptable to the beneficiaries.

3.4 Community Management Indicators

The above results depicting the functioning and the condition of the systems gives an indication of how well the community operates and maintains the systems. In addition, a number of the "software" components of DRWS policy have been analysed.

Villages are required to elect a Village Water Committee (VWC), who are responsible for collecting a maintenance contribution (*seabo*) from households, and depositing the amount in a bank account. The VWC members are responsible for organising village labour during the construction phase. The *seabo* is for future maintenance.

Minor repairs to the system are carried out by water minders, who are selected by the VWC in conjunction with the masons. During the construction period the water minders should be trained to clean silt boxes and tanks and undertake minor repairs. The village should be provided with a basic tool kit. Major repairs are carried out by DRWS, at the request of the village. Upon completion of such repairs the VWC is presented with an invoice which should be paid to the District sub-accountant.

All villages had a Village Water Committee, with the exception of one in Thaba Tseka district. Other indicators are presented in the following table.

Table 11: Community Management Indicators

District	Number of villages (percentages in brackets)				
	Total	With a water minder	Without a water minder	With tool box	With bank account
Qacha's Nek	39	17 (44)	22 (56)	16 (41)	31 (80)
Mokhotlong	33	19 (58)	14 (42)	7 (21)	25 (82)
Thaba Tseka	29	23 (79)	6 (21)	14 (48)	22 (81)

The table shows that in all districts approximately eighty percent of villages have bank accounts. Qacha's Nek has significantly fewer water minders, although nearly all villages where there was one, a tool box had been supplied.

The maintenance tasks undertaken by water minders has not been studied, and on analysing the National Data Base no correlation was found between the existence of a water minder and system functioning. The high percentage of functioning systems compared to the relatively low percentage of villages with water minders for Qacha's Nek district supports this analysis. It appears as if a number of repairs are carried out by other villagers. ·kind of repair ·are district repairs paid for? ·down time before repair

During the inspection villages were asked to show a bank balance. These were available in about half the number of villages. Averages for the three districts are: Qacha's Nek - M 706; Mokhotlong - M 278; and Thaba Tseka - M 302; thus clearly showing far greater amounts deposited in Qacha's Nek.

More details regarding these software components were obtained from the interviews, and relevant recommendations are noted in the following sections.

4.0 VILLAGE PERCEPTIONS

Two semi-structured questionnaires were designed in order to gather the opinions and experiences of the project beneficiaries. Individual interviews were conducted with villagers from 14 villages, in which systems were constructed over the last six years. A more detailed questionnaire was designed for the Village Water Committee (VWC) members. The same villages were used for both sets of questionnaires.

4.1 Perceptions of the Beneficiaries

In total 239 people were interviewed by the research team, which comprised three experienced Sechaba personnel. The results are mainly displayed in percentages. Interviewees were randomly selected, with a maximum of 20 per village.

Characteristics of the Sample

Within village life many societies and groups exist, including the Village Development Committee (VDC) and the Village Water Committee (VWC). It was not the intention to interview people belonging to committees; instead the views of 'ordinary' villagers were sought, and 80% of interviewees were not affiliated with any committee. Nine people were VWC members and eleven VDC members. Other societies include communal gardens, clinic, church and school committees, burial societies, credit unions and poultry groups.

Women are generally more available in villages in Lesotho, and they constituted 81% of interviewees. Being the household managers of domestic water usage this sample bias is appropriate.

Pre-construction

80% were aware that the water project was going to take place before construction commenced, and two thirds attended at least one *pitso* regarding the water project. Over 90% said the VWC was democratically elected.

Maintenance Contributions (*seabo*)

92% said they had paid *seabo* (maintenance contribution), though 64% reported that not all households had contributed. 80% said that all households within the village had to pay. Many of the poorer people paid in instalments. The remaining 20% said that the poorer households, either brewed beer to pay, or were excluded, or they paid a percentage.

92% knew that *seabo* belonged to the village, the others thought it was either for the Government or for the VWC. 95% knew it was for maintenance purposes.

Labour Contributions

88% said they had worked during the construction phase of the project, and of those 63% thought the time worked was the same as others. However, when asked if all villagers had worked only 40% replied affirmatively. It is often said that women contribute the bulk of the village labour. In response to the question "Did many males contribute labour?", 86% said they did. It was also asked if men and women worked equally; and 71% considered they did, and 7% said men worked more than women.

When analysed by gender, not surprisingly, slightly more men considered males worked more, and slightly more women thought females worked more. The time interviewees spent working on the project was analysed, and on average women worked two months longer than men.

Three quarters said that there were no problems organising village labour. The remainder sited a wide variety of cases; the most common relating to insufficient numbers of people turning up for work. A few people said that the trenches filled in after heavy rains and required re-digging. Some commented that a river crossing was washed away by floods and had to be re-done. Some noted the ground was hard, which hampered trench digging activities. This was facilitated by utilising a plough.

Project Completion

With regard to the time taken to complete the system, interviewees responded as follows:

Table 12: Expected Time to Complete Project

Expected time to complete	% of people
Took much longer than expected	42
Took a little longer than expected	5
Took much shorter than expected	19
Took a little shorter than expected	26
About the same as expected	8

When the above results were cross-referenced with the responses from the VWC members referring to labour organisation, there is a strong correlation. In those villages where the VWC had experienced problems organising labour, and where there were times when DRWS requested additional labour, the completion time took longer than expected.

Nearly 60% said that the construction process was no inconvenience. 11% said it was a minor inconvenience, and the rest (30%) thought it was a major inconvenience. The major inconvenience was that people had neglected farming activities (57%). Other inconveniences mentioned were interference with housework, the collection of firewood and potential loss of earnings (8-9% each).

Overall Impressions

Overall 84% thought the construction went well, whilst 7% thought it didn't. Females were generally more positive than males.

Since completion of the project, 86% stated that the system has worked well, whilst the remaining 14% thought it had worked poorly with one individual saying it hadn't worked.

88% are satisfied with the level of service. The vast majority of people enjoyed greater proximity to a water point compared to before the system was built. 19% stated that the queuing time was now shorter. 10% noted less time required to fill containers.

However, 10% complained that the distance to the collection point was too far. And an additional 7% objected to the policy that no private connections are allowed.

Differences to Life

Finally interviewees were asked if the system had made any difference to their lives. 72% replied affirmatively, whilst 28% said it had made no difference. A higher percentage of women responded positively.

Interviewees expressed a wide number of comments in connection with the level of service, the reliability of the system and on how it made a difference to their lives. The two most popular responses were connected with the quantity of water supplied, and the water quality.

On the positive side: About half mentioned improved water quality. One sixth of people noted that there are fewer diseases now. Five percent stated that it was now easier for old people to collect water; and a few people noted that they can now grow vegetables, and they can wash clothes at home.

On the negative side: 5% complained of either an outbreak of diarrhoea or typhoid. Over 5% thought that the water was not clean, and three people complained of worms in the water. A number of people commented that the school was not served (5%);

Summary

The findings from the villagers questionnaire are generally positive. The vast majority of villagers:

- were aware of the project before construction commenced and had attended at least one *pitso* (village meeting);
- stated that the VWC was democratically elected;
- had contributed to *seabo* (fund for future maintenance);
- knew that *seabo* belonged to the village and was for maintenance purposes;
- participated in the construction of the system (both women and men);
- considered that the construction activities went well;
- are satisfied with the level of service provided;
- noted that the system had been reliable; and
- stated that it had improved their lives (less diseases).

The recommendations from this section are noted after the analyses of the VWC questionnaires and the SWPO workshop have been presented.

4.2 Perceptions of the Village Water Committee members

Village Water Committees are regarded by DRWS as providing an important link between the villagers and DRWS staff during the construction process. In addition they are regarded as important for system sustainability. Post construction their primary role is to manage the maintenance fund, and liaise with the water minder and DRWS when repairs are required. The VWC consists of seven members, which may or may not include the Chief. The research team attempted to interview as many members as possible in one sitting. The Chief, if present, was invited to attend.

It was pleasing to note that all villages had a water committee. Inevitably, at the time of the interviews some members of the committee were away from the village for some reason or other. In total 46 people were interviewed from the 14 villages, equating to an average of 3.25 members per village. Nearly three quarters of those interviewed were women, who play a dominant role in village affairs in Lesotho.

Such a small sample of 14 villages cannot be considered to be representative for quantitative analysis, but it does represent 25-30% of villages served by DRWS in Qacha's Nek since 1990.

Most VWC considered that they did not have long to wait before construction started - less than one year; although two villages waited four years and one seven years. The waiting times were less than expected. Considering that coverage of the rural population is approximately 37%, some villages will have to wait several years before DRWS is able to serve them. In addition with the objectives of an area based approach (see section 8.1) no prioritisation can be given to individual villages on the waiting list.

Labour Organisation

The VWC are responsible for ensuring that the community contribute some of their time to assist with the labour tasks the village is required to undertake. These tasks include; excavating the spring, collecting and rough shaping stones, digging and backfilling trenches, crushing stones to make gravel, carrying pipes and cement, mixing cement/concrete, and in places where the pipes cannot be buried covering them with dry stone walling. The VWC has the task of organising the village labour.

11 of the 14 VWCs said that most households contributed labour. When asked what action they took about those not contributing, nine said they charged them extra seabo. Three noted that all contributed, three took court action, and one did nothing. Two of the three taking court action were villages which DRWS reported labour problems.

Only three VWCs said they received training, which for these three was provided by DRWS. Six VWCs had problems organising village labour. Five villages reported that there were times when DRWS requested more labour. Not surprisingly, these same five also had problems organising labour.

Half said that not many men worked. The reasons given were that many males were either in full time work or seeking work, or that there were few available. In two villages the males did not want to work, with one stating "development work was women's work".

Five VWCs said the work took much shorter than they expected, four a bit shorter, and four said it took much longer than expected. Three said the construction work went very well, eight said it went OK, and three said it went badly.

Seabo

DRWS requires that the VWC should collect financial contributions (*seabo*) from all households. The amount should be placed in a bank account, and utilised for repairs to the water system. The amount DRWS recommends is M 10.00 per household. Per ?

8 of 14 VWCs thought the *seabo* contributions were difficult to collect. Half reported that all households had contributed. When asked about the poorer members of the community 10 said no households were considered too poor to contribute. The others exempted widows, widowers, disabled and the mentally ill. One village arranged for collective

contributions. The villagers were divided into groups which brewed and sold beer (stokvels). The poorer households were encouraged to pay in instalments.

All VWCs knew that the money was owned by the community and that it was for water supply maintenance. All VWCs had deposited the contributions in the bank. Many noted the inconvenience and the expense of travelling to the bank. Travelling times varied from half an hour to six hours, and over half reported a travelling cost of M 7 or above. Seabo account balances varied from M 200 to 1500, with an average of nearly M 700.

Only one of the 7 villages, where not all households contributed, stipulated that the non-contributors could not draw water from the system. They used traditional springs. In the other villages there was ill-feeling against those that hadn't contributed. The VWCs received many complaints and were expected to take action. Many are unsure of what action to take.

Five of the 14 villages had used *seabo* funds. These were used on seven occasions. Four of these were for the water system opening ceremony. The other three were for repairs.

Four of the villages had no waterminder. Of the other 10, eight considered that the training given was either inadequate or that none had been received.

Suggested Improvements

The committee members were asked to suggest improvements. The two most common suggestions were that more emphasis should be put on organising labour, and that before construction starts there should be more consultation with all the members of the community. Other suggestions/comments included; the community could be divided into groups with each group headed by a water committee member (as small groups were easier to manage); the advantages of the water supply system should be stressed; less emphasis should be given to money; and, the purpose of *seabo* is not readily understood and should be made clear.

Difference to Life

All the VWCs said that the water system had made a difference to their lives. When asked how; all but one noted proximity; and all but one noted at least one of the following - clean water, improved health, no cholera outbreaks which had occurred before, a reduction in diarrhoea.

Overall Experience

The VWCs were then asked to sum up the overall experience; half thought it was positive, while the other half negative.

Summary

Findings from the interviews conducted with the VWCs were not so positive. Although in all the villages a VWC was in existence and *seabo* contributions had been collected and deposited in a bank account, a number of concerns were expressed.

Approximately half the number of VWCs interviewed:

- experienced problems organising village labour;
- thought that *seabo* was difficult to collect;
- considered that the overall experience was negative.

In addition only three of the 14 VWCs reported that they had received any training, and most of the pump caretakers stated that either no training was provided or considered it inadequate. *Seabo* had not been used by the majority of VWCs; and only three had utilised the fund for maintenance purposes.

5.0 DISTRICT STAFF PERCEPTIONS

An *SWPO* workshop was held with the project staff at the Qacha's Nek district office, in order to assess the situation from the implementors' viewpoint. These are participatory workshops in which the participants dictate the topics which are then reviewed. Refer to Annex 1 for details. The findings are summarised diagramatically on the page 20.

The findings can be broadly categorised into three:

District Realities in Qacha's Nek
Production related issues
Conditions of employment

District Realities

These relate to climatic and tribal influences. The harsh climate results in; difficulty crossing the Senqu river when in flood, increased weathering of structures, and poor village participation in winter months. To lessen the impact, the DE was reorganising the work schedules so that work was concentrated in the lower regions in the coldest months. However, it will take some time before this objective can be fully realised.

A high percentage of villages in Qacha's Nek are inhabited by Xhosa (Bathepu) in addition to Basotho. Staff reported that the two generally do not work well together. Further difficulties arise from the lower education levels of villagers compared to the Lowlands.

A positive aspect was that only gravity systems were required, although the district staff were keen to gain experience with other technologies, and some pumping systems are necessary for full coverage.

Production related issues

Demand?

These dominated the workshop. Much discussion centred around the reasons for poor participation. Apart from the cold climate and the tribal concerns, the following were mentioned; villagers want food for work, they only want to work in the mornings, participation is poor in the afternoons due to drunkenness. In addition there are conflicts between BCP and BNP supporters, who often do not like working together.

If other Gov't programmes such as civil works projects are on-going, villagers prefer to work on them because they will usually receive payment or food. Work can also be disrupted by politicians (and personnel from other projects) holding *lipitso*, and by village feasts. A further reason for poor participation is that some villagers think the level of service is too low and DRWS do not allow private connections. Providing payment for villagers would resolve most of these aspects.

The field staff noted that if the Chief was supportive the project went well. If the Chief was not particularly interested the success of the project was largely dependent on the efforts of the VWC. The VWC members are often not the most suitable for the task. Villagers often select the rich/famous. It was thought that the STO gives too much information to the villagers. The supervisors have little new information to impart to the community. The VLO requires more training and experience in order to effectively undertake his duties. However, it was recognised that one VLO is not sufficient to adequately brief all the villages under preparation and in the initial construction stages.

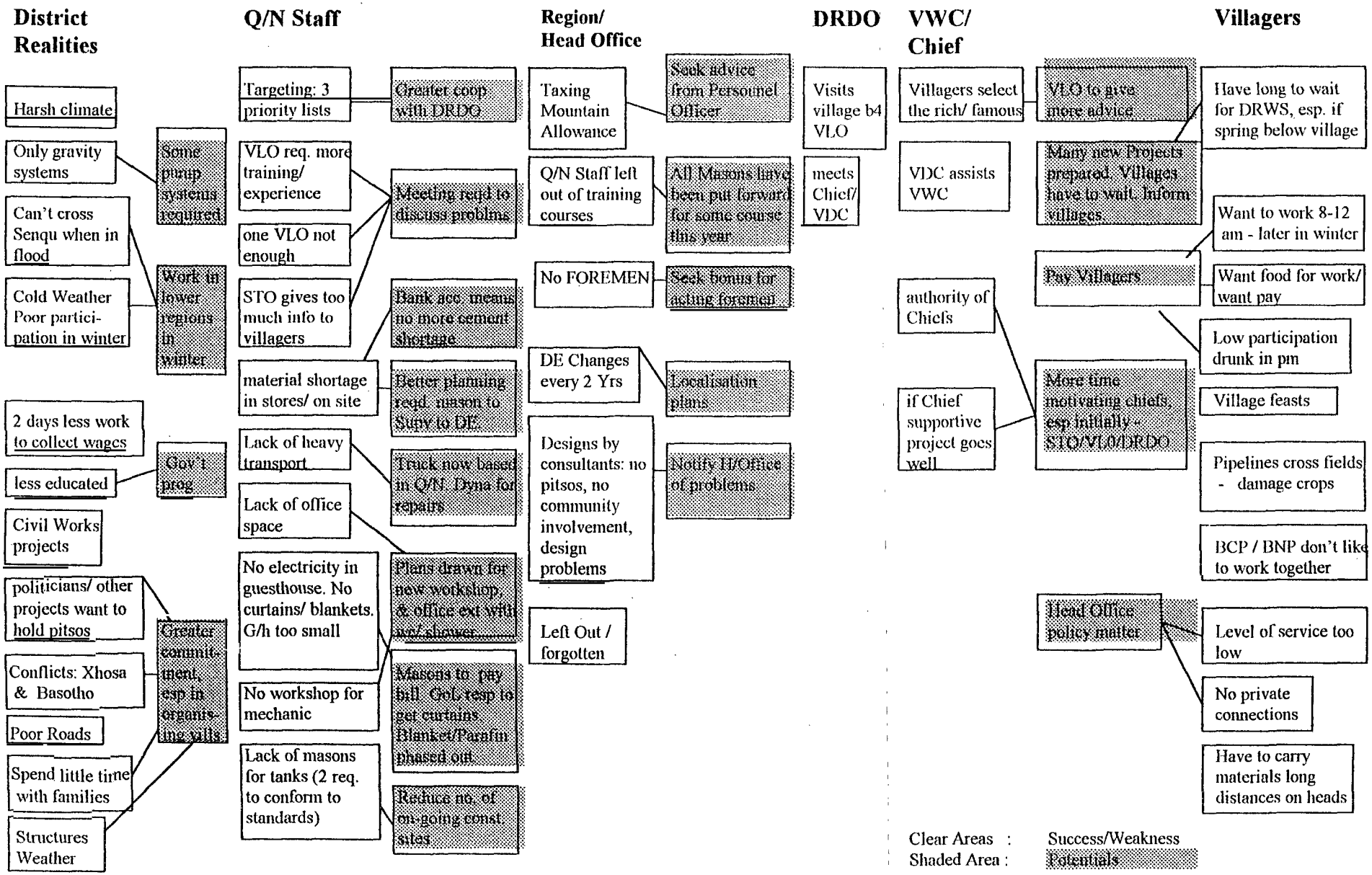
Opportunities:
The supervisors could provide greater assistance when briefing villagers. The STO, who spends more time in the village in the initial phases of project preparation should spend more time motivating the Chiefs. The VLO should emphasise the duties of the VWC members in order that unsuitable candidates are dissuaded from standing. The field staff thought that the VWC were necessary, and that their duties should not be given to the VDC. They noted that the VDC often assists the VWC to solve problems.

It was noted that District Rural Development Office (DRDO) personnel usually visit villages before DRWS personnel. Increased liaising is required in order to coordinate activities, and to ensure that villagers' expectations (especially relating to level of service) are realistic.

On the logistical side, better planning between the mason and the supervisor, and between the supervisor and the DE is required to ensure sufficient stocks of materials on site. The DE noted that with regard to district stocks there will no longer be cement shortages. This is due to the new financial arrangements that have resulted in Irish Aid funds deposited straight into a bank account in Qacha's Nek. Previously they went through Treasury. In addition, heavy transport arrangements have recently been decentralised, and a 4x4 Mercedes truck has been allocated for sole district use. The Dyna will be repaired. Stocks of pipes and fittings, however, are more problematic as they are procured centrally from Maseru. In order to avoid shortages greater coordination will be required.

Employment related conditions

Staff thought they had a generally bad deal compared to their colleagues in the Lowland districts. Grievances included being left out of training courses; no masons had been promoted to Foremen; and they thought that the Mountain Allowance should not be taxed. The DE noted that all masons had been submitted for a training course this year. However, based on past experience, very few believe that they will participate in any courses.


District Realities
Harsh climate
Only gravity systems
Some pump systems required
Can't cross Senqu when in flood
Cold Weather Poor partici-pation in winter
Work in lower regions in winter
2 days less work to collect wages
less educated
Gov't prog
Civil Works projects
politicians/ other projects want to hold pitsos
Conflicts: Xhosa & Basotho
Poor Roads
Spend little time with families
Structures Weather
Greater commit-ment, esp in organis-ing vills
Q/N Staff
Targeting: 3 priority lists
VLO req. more training/ experience
one VLO not enough
STO gives too much info to villagers
material shortage in stores/ on site
Lack of heavy transport
Lack of office space
No electricity in guesthouse. No curtains/ blankets. G/h too small
No workshop for mechanic
Lack of masons for tanks (2 req. to conform to standards)
Greater coop with DRDO
Meeting reqd to discuss problms
Bank acc. means no more cement shortage
Better planning reqd. reason to Supv to DE
Truck now based in Q/N. Dyna for repairs
Plans drawn for new workshop, & office ext with wc/ shower
Masons to pay bill. GoL resp to get curtains. Blanket/Parafin phased out.
Reduce no. of on-going const. sites
Region/ Head Office
Taxing Mountain Allowance
Q/N Staff left out of training courses
No FOREMEN
DE Changes every 2 Yrs
Designs by consultants: no pitsos, no community involvement, design problems
Left Out / forgotten
Seek advice from Personnel Officer
All Masons have been put forward for some course this year.
Seek bonus for acting foremen
Localisation plans
Notify H/Office of problems
DRDO
Visits village b4 VLO
meets Chief/ VDC
VWC/ Chief
Villagers select the rich/ famous
VDC assists VWC
authority of Chiefs
if Chief supportive project goes well
VLO to give more advice
Many new Projects prepared. Villages have to wait. Inform villages.
Pay Villagers
More time motivating chiefs, esp initially - STO/VLO/DRDO
Head Office policy matter
Villagers
Have long to wait for DRWS, esp. if spring below village
Want to work 8-12 am - later in winter
Want food for work/ want pay
Low participation drunk in pm
Village feasts
Pipelines cross fields - damage crops
BCP / BNP don't like to work together
Level of service too low
No private connections
Have to carry materials long distances on heads
Clear Areas : Success/Weakness
Shaded Area : Potentials

The guest house has no electricity, no curtains, too few blankets, and was too small. The office was considered too small, and the mechanic has no workshop. Plans have been drawn up for a new workshop, and an office extension which will be equipped with a toilet and shower. The masons have to devise a system of how they would pay for electricity used. A separate meter could be installed. The Government has recently phased out the provision of blankets and paraffin. Heaters were purchased last year.

6.0 MAINTENANCE

There is not a high demand for repair work in Qacha's Nek, and the Maintenance Supervisor is also responsible for one or two new construction projects.

The office has good records of maintenance activities. The following table provides a summary of the repair requests and repairs completed for the last two years, ending 31 March 1996:

Table 13: Maintenance Activities

Year	Breakdowns reported	Repairs Completed	Backlog
1994/5	11	6	5
1995/6	22[1]	26	0

[1] *One system required a complete rehabilitation*

The other maintenance factors to consider are the time to respond to the breakdown requests and the time to complete the repairs. The average response time from the date the repair was reported to the date it was first inspected is 8.0 days. The average time from the date the repair is reported to the date the repairs are completed is 30.5 days. However, this figure does not account for the complexity of the repairs required, and if two large jobs are excluded, the average time is 15 days. These results are very impressive.

Conclusions: Qacha's Nek has a good record regarding maintenance activities. Requests for DRWS maintenance services are quickly and efficiently attended.

7.0 ISSUES EMANATING FROM PAST REVIEWS

As mentioned, there has been three reviews of the Qacha's Nek Irish Aid programme. It is relevant to note some of the issues that have been referred to in these past reviews. These are categorised under the following headings: Localisation; Targeting; Water Quality; and Sanitation and Health Education.

7.1 Localisation

DRWS has attempted to localise key positions for many years. From the early 1980s promising VWSS personnel went for study overseas. Over the years considerable progress has been made. In 1992, eight of the ten District Engineers were ex-patriates, and two of the three regional engineers. In addition, many key personnel at Head Office were held by non-Basotho. The following table summarises the current situation:

Table 14: Localisation of Key Positions

Position	Number Required	Basotho held	Ex-pat held	Vacant Posts	Notes
District Engineer	10	7	1	2	An APSO DE is being recruited, and a Mosotho will return from UK soon
Regional Engineer	3	2	0	0	These will be phased out
National Construct-ion Engineer	1	1	1	0	Mosotho counterpart
National Operations Engineer	1	1	0	0	Localised in April 1996
Chief Engineer	1	1	0	0	
Planning, M and E Coordinator	1	1	1	0	Mosotho counterpart
Hydrogeologist	1	1	0	0	
Contract Engineer	1	0	1	0	Recently created position

Current plans are to phase out the position of Regional Engineer. The existing two are due to be transferred to Head Office, in order to strengthen capacity. It is planned to establish a procurements unit, and to strengthen the Operations Unit.

In the past there has been an intention to localise the Qacha's Nek DE post but for various reasons this has not happened. Recently, several returning Basotho have either failed their courses or they have not remained in the organisation for long. Qacha's Nek has been a low priority for localisation. This is because DRWS know that they can relatively easily get another APSO engineer. APSO engineers have been of a high quality, and DRWS is very satisfied with their performance. Exam results from UK universities are known in July, and returning students are expected to take up their new posts in August. It only takes one or two to fail to jeopardise the programme.

Only one Mosotho is due to complete studies this year. Next year three are expected to return. It is likely that these will be absorbed into other posts, in accordance with the restructuring of the organisation. Due to the unpredictability of the future situation, it is not recommended that Irish Aid aim for localisation at the end of the current APSO engineer's contract. The situation should be reassessed in two years time.

A consequence of the uncertainty of the localisation process has been that none of the APSO volunteers have had a handing over period. This is considered to be detrimental to the effective performance of an in-coming engineer. It will be noted that the number of people served in the last financial year was relatively low. This was mainly due to shortages of materials; a situation that persisted for over 3 months. This time coincided with the absence of a DE, and is thought unlikely to have occurred if a DE was in post. Furthermore, if actual coverage figures are referred to (see Table 3) it seems that the poorer results coincide with a changeover of DE.

The position of DE is demanding, and it takes time to become acquainted with Government regulations and procedures. It is recommended that early steps are taken by DRWS with APSO to recruit another engineer to take over. Attempts should be made to ensure a minimum of six weeks handover.

With regard to study sponsorship it is recommended that the Irish do not fund students to undertake civil engineering courses in Britain. The courses are not considered to be the most appropriate for senior engineering positions in DRWS. Many Basotho have difficulty completing the course. Several fail to do so, and most return with a third class degree. Civil engineering courses are not specialised enough for DRWS activities. In engineering terms, however, they are too detailed for the technologies DRWS employs. Very little hydrology or management is incorporated. In addition the cost is extremely high. It could be argued that in many ways the degree provides an incentive for graduates to pursue other careers in order to utilise their newly-acquired knowledge more fully. DRWS management are currently considering alternatives. In Botswana there are two/three year higher diploma courses in water supply and sanitation. This would qualify those with good results (and after several years practical experience) to gain entry to a related Masters degree in Europe. Such a change would also be financially advantageous. However, changes have to be negotiated with higher Government authorities, in order that the qualification is acceptable for the DE position. Currently DEs must have a degree in order to qualify for full remuneration.

Conclusions: DRWS has made much progress in the localisation of key positions. Due to the unpredictability of the future situation, it is not recommended that Irish Aid aim for localisation at the end of the current APSO engineer's contract. The situation should be reassessed in two years time. The performance of APSO engineers has been very good. It is recommended that early steps are taken by DRWS with APSO to recruit another engineer to take over. Attempts should be made to ensure a minimum of 6 weeks handover.

Recent DRWS evaluations of the student scholarship programme are favourably regarded. Training in management should be incorporated, perhaps at the Institute of Development Management. It is recommended that Irish Aid keep in touch with developments.

7.2 Targeting

Irish Aid, in the past have expressed concerns that a high percentage of the target projects were classified as rehabilitations. In addition the second review of the project in July 1993, reported that 18 of the 19 of the villages originally targeted were later dropped. Concern was expressed that the most difficult villages should not be left to last. Records indicate that most of the villages planned in the second review were also not served.

Going through the existing district records and as a result of discussions with DRWS staff, the projects classified as rehabilitations were mainly built by an NGO (refer to Section 9 for more details of their activities). In the absence of the then DE, it is not possible to know for certain the exact reasons for the targeted villages not served, but it is thought that the priority lists were compiled by the District Rural Development Office. District records reveal that for some of the villages on the list spring readings had not even been taken. Planning has improved over the last few years. The lists of projects noted in past reviews were analysed in conjunction with the District Staff, and the details provided in Annex 3.

A few villages were excluded because the springs did not have sufficient head. Such villages require a pumping system. From a donor's perspective their remaining unserved has probably been beneficial. DRWS have utilised a range of technologies, including windmills, diesel engines, electric motors, hydraulic rams, and, more recently, solar systems. In the mountain areas for villages not on the main road, only two of the above are suitable. It is presumed that if there are sufficient quantities of water, hydraulic rams would be installed. In the absence of both electricity and the availability of diesel fuel, the other alternative is a solar system. DRWS first installed solar systems in 1991. Their experience has not been wholly successful. Initially this was due to poor quality design and installation, which has been exacerbated by numerous thefts. DRWS has attempted to reduce thefts through various preventive measures. These have only proved to be partially successful. New anti-theft measures have been designed, and they will be implemented in the near future. There are a couple of projects due for solar systems in the coming year. It is recommended that these are funded by the Irish.

Conclusions: In the past, many of the villages targeted for an improved water supply have not been served. DRWS has greatly improved project planning and preparation in recent years, and such a situation is unlikely to re-occur. Some villages were omitted because a pumping system is required. Irish Aid should fund projects utilising hydraulic rams and solar systems.

7.3 Water Quality

One of the objectives noted in past reviews was to establish a water quality monitoring system. It is not clear if this related only to Qacha's Nek district or to all the ten districts. Like most issues, the question of water quality monitoring within DRWS has a long history. A small laboratory was established at the Head Office in Maseru by USAID in the early 1980s. The same unit also dealt with health education. However, after a tragic car accident resulting in the death of the key staff, the unit was disbanded.

In early 1992, a Del Agua water testing kit was procured by Irish Aid. The second review in July 1993 noted that it had not been used. In 1993, the UNV hydrologist attempted to introduce water quality testing capacity in all districts. Water quality testing kits were procured and the hydrologist provided training on usage. The laboratory was cleaned up and still exists, though not used. In most districts the kits have never been used.

There is a testing kit at Qacha's Nek with the capacity to test faecal coliforms. The Del Agua kit was transferred to the Hydrogeology Unit in Maseru, about 18 months ago. Currently, the District Engineer (DE) has no plans to re-instigate water testing capacity.

However, it is possible to report on the quality of water in DRWS systems. A survey by a Swiss student on a practical attachment in September 1994, tested water in five villages in Qacha's Nek district. A total of 52 samples was taken, either from the inlets of silt boxes or at taps. The tests measured turbidity and contamination by faecal coliforms. Turbidity was less than 5 (NTU) in all instances, indicating completely clear water to the naked eye. None of the 52 samples of 100 ml was contaminated by faecal coliforms. This was found despite the fact that the spring catchments were not fenced and, in some instances, livestock were grazing in the vicinity.

These results indicate that DRWS are meeting their objective of providing potable water. The conclusions note that although no contamination was actually found, there are many sources for potential contamination. The survey was conducted during the dry season. Incidence of water related diseases tend to increase after the rains. Due to limited time no samples were taken during transportation nor from household water storage containers. However, the results are encouraging.

The issue must be viewed in relation to the knowledge that many villagers use traditional springs for household purposes even though the water supply system is functioning (see Section 8.4).

The quality of the water has been tested and no faecal coliforms were found. It is recommended that water quality testing capabilities are established at district level. Consequently, the Del Agua kit should be returned to the district, and the DE provide training on how to take water samples and how to use the kit. Any complaints or queries can then be investigated. The present DE is well qualified in water quality testing procedures.

7.4 Sanitation and Health Education

Attempts were made in the second review to substantiate claims made by both villagers and DRWS engineers that the provision of a water system has significant positive impacts on health. It was thought that the records held by Tebellong Hospital would be sufficient. However, in-patient records are not computerised, and a long drawn out procedure would be required. Both past and recent research on the subject has indicated that there is only a

positive health impact if villagers exclusively use improved sources, (see Section 8.4). Health benefits are also related to latrine usage and improved hygiene practices.

Experiences of sector coordination have not been successful in Lesotho. The ODA evaluation of Phase IV noted the cooperation between DRWS and NRSP "has not worked as envisaged. It could be argued that the actual relationship between the two organisations has been a negative one for the achievement of project objectives" (page 36). A recent NRSP evaluation recommended that the relevant Government departments should initiate such activities.

It is not recommended that Irish Aid get involved with sector coordination issues. Progress is underway, albeit at a slow pace. The position of the Village Liaison Officer (VLO), is relatively new, and it is recognised that increased capacity in this area will be necessary. Currently the VLOs are encouraged to liaise with Village Health Workers (VHW). This initiative is encouraging.

8.0 RECENT POLICIES

DRWS periodically reviews the Manual of Standardisation to incorporate the few changes that have been recognised through the experiences gained. An assessment was made to determine the extent recent policies have been adopted. They include, area based approach, design files, spring measurements, and protection of traditional springs.

8.1 Area based Approach

DRWS have attempted to operate on an area based approach. This involves constructing a number of projects in close proximity to each other. This is thought to improve construction progress, mainly by easing logistical arrangements, particularly heavy transport.

The organisation has not yet achieved this goal in the field, but the National Construction Engineer (NCE) noted that future designs were well coordinated. It is a difficult target to achieve, as inevitably political pressures result in the prioritisation of certain villages.

Qacha's Nek district has ten on-going projects, which are mainly concentrated in three areas. This is similar to other districts.

Conclusion: The area based policy has not yet been properly formulated and implemented in any district.

8.2 Spring Measurements

Lesotho experienced drought conditions in 1991 and '92. The National Inspection showed that a number of springs utilised in water supply systems dried up, and many more

experienced reduced yields. In many villages the Village Water Committees introduced water rationing. As a result of the drought prone nature of Lesotho it was decided that springs should be measured over two complete years. Design files from the beginning of this year should contain eight quarterly spring readings.

The National Construction Engineer said that about half of the design files include a complete set of spring readings. Currently, they are not strict with districts to conform to this policy, mainly because they wish to increase the number of design files. Traditionally, the output has been very low (see next section 8.3).

8.3 Design Files

DRWS over the past couple of years has been improving project planning. Future planning within a district was recognised as a factor restricting the productive use of field staff. As mentioned in the Project Cycle section, the Senior Technical Officer (STO) is largely responsible for the technical aspects of new project preparation. Head Office set the objective that each STO should submit two project design files per month.

In August 1995 the target was assessed. Qacha's Nek district fared badly, the third worst of the ten districts. Their performance was particularly bad considering that the district had two STOs. Although the DE reported that a few files had been submitted to the Regional Engineer and not forwarded to the National Construction Engineer (NCE), output of files was still poor. The NCE said that the majority of design files submitted by Qacha's Nek had to be returned. Simple mistakes were not being picked up by the DE or the RE.

One of the STOs was transferred to Mafeteng district in January 1996. A Mosotho DE had recently completed studies in UK, taken up the post of DE in Mafeteng, but only stayed for two months before finding more lucrative employment in South Africa. Since the STO has left, however, the performance has improved, and recently the two per month target has been achieved. In addition to the files completed by the district staff, about ten were completed by a private contractor. The future planning for the district in terms of design files is well organised for the next two to three years. (See Annex 3)

One of the aims of the organisation is to contract out construction activities to the private sector. To achieve this they wish to accumulate a number of projects ready for the privatisation phase to begin. The STO transfer is a temporary arrangement. However, it is not recommended that he is re-employed at Qacha's Nek. The current capacity, coupled with the designs completed by the private contractor, is considered sufficient for both DRWS projects and for constructions to be contracted out to the private sector. The only drawback at the moment is that neither the STO nor the draughtsman hold a driving licence. However, the STO is due to take her test shortly. Consequently, the STO could be better utilised elsewhere.

It was noted earlier that due to the unavailability of final reports, it was not possible to know exactly which projects have been funded by Irish Aid. Final reports have to be approved by Head Office. It appears that, in the past, due to the lack of a functioning

photocopier at Qacha's Nek, no copies were kept. However, it is a possibility that for some projects, no final reports were ever completed. It is recommended that efforts are made to find missing reports and return them to the district. Head Office noted that on project completion final reports were slow to be forwarded by the DE.

The district has not provided the target number of design files. Recent progress in this area should be maintained. The STO who was temporally transferred to Mafeteng district could be better utilised elsewhere.

8.4 Protection of Traditional Springs

One of the findings from the National data base was that in 46% of villages equipped with an improved system, water was drawn from traditional springs for household purposes. For gravity systems the overall percentage was 40%. This is low in comparison with handpump projects where 59% of villages used traditional springs. As a result, DRWS declared that all springs which were previously used (i.e. before intervention by DRWS) should be identified. If they are within 150 metres from households they should be protected.

All systems completed after June 1994 should conform to this policy. On inspecting the design files the NCE returns those which do not indicate the springs which require protecting. However, in the field, it is not known the extent to which this is done. The DE Qacha's Nek said that traditional springs were generally not protected.

As stated existing research suggests that improved health benefits only accrue if users make exclusive use of improved systems. However, it is generally accepted that increases in the quantity of water provide more health benefits compared to improving the water quality at source. In addition, changing insanitary hygiene practices are likely to have a greater impact for improving health. Specific practices relating to water use that undermine increased health benefits include:

- insufficient quantities of water used
- use of traditional springs for household purposes
- contamination of water after collection

Increased coordination with village health workers should be encouraged. Irish Aid could pursue water quality issues. They could, perhaps, fund a study in the wet season, which incorporates testing the supply at source as well as during transportation and within households. DRWS would welcome further research in this field.

There are many traditional springs that require protecting in villages already served. As stated DRWS plan to utilise the services of the private sector. To date DRWS has more or less monopolised the construction of water supply systems. It is not known if the skills exist in Qacha's Nek district, to build systems to the required standards. Irish Aid could consider funding a pilot project protecting traditional springs. A simple design for

protecting springs could be drawn up by Head Office personnel. The cost per spring is expected to be about M600. Qacha's Nek staff would have to supervise the works.

It is recommended that for all new constructions all traditional springs which are used for household purposes are identified and protected. Irish Aid should consider funding water quality testing, and protecting traditional springs in served villages utilising the private sector. \but this has never worked

9.0 NGO ACTIVITY

There has been only one NGO operating in Qacha's Nek, the Southern Mountain Water Project (SMWP). They were funded by the Christian Council of Lesotho. They constructed systems in 50 villages. These are situated in the west of district, with a few in Quthing and Mohale's Hoek districts.

SMWP ceased operations in February 1995, and DRWS agreed to take over the maintenance. Unfortunately the maintenance needs are substantial. This is because many of the systems are old and the quality of SMWP work is poor. A number of deficiencies were highlighted by DRWS staff:

- many systems do not have silt boxes
- storage tanks are usually constructed of corrugated iron (zinc), and most have no foundations
- although some of the spring catchments are of reasonable quality, many require completely re-doing
- most pipelines are laid directly on the ground
- some taps have no supporting structure, and where they exist many are poorly built
- the standard of workmanship is generally poor

A few attempts were made by DRWS at encouraging SMWP to conform to standards. The project manager was given a Manual of Standardisation, and also invited to attend DRWS workshops.

Although the project only ended recently, the bulk of their activities took place in the late 1970s and early 1980s. At this time DRWS did not have particularly high construction standards. Emphasis was on output, in line with the UN Water and Sanitation Decade objectives. DRWS often utilised zinc tanks. Many such systems in the lowland districts have been rehabilitated. Consequently the majority of the SMWP systems will require complete rehabilitation.

Level of service standards adopted by SMWP were different from DRWS. The project provides one tap for ten households, compared to the DRWS standard of one for 16 households. This has resulted in additional problems for DRWS during rehabilitations. To date only two systems have been re-built. Difficulties were experienced in organising

community labour, especially for those householders who now have to walk farther to a collection point. An additional problem arose over the existing components of the system. Initially, the village agreed to hand the old pipes over to DRWS, but afterwards changed their mind, claiming they were village property. The danger of leaving them in the village is that many private connections to the system will be made.

The following recommendations were made during the Workshop:

- DRWS must obtain written agreement that all components of the existing system are handed over.
- The existing system should be dismantled before new construction works commence.
- Wherever possible, components (especially pipes) of the existing system should be re-utilised. All remaining items should be taken to the DRWS yard.
- Particular attention should be given to level of service considerations at the initial pitso.
- More attention should be given to the siting of tapstands.
- Only those systems that are completely non-functioning should be considered for rehabilitation.
- Makeshift repairs should be conducted by the maintenance supervisor. Villages must conform to cost recovery procedures.

Many of the systems constructed by SMWP are old, and the construction standards employed by the organisation are generally poor. Consequently, the majority require rehabilitation. With regard to new projects classified as rehabilitations, the vast majority are old systems built by SMWP.

10. COSTS AND FULL COVERAGE IMPLICATIONS

Calculating the financial inputs for the Qacha's Nek water supply is not a simple procedure. In brief, Irish Aid are responsible for capital costs (including materials, transport and tools and equipment), the maintenance of vehicles, and wages and allowances for field staff. The GoL is responsible for the wages and allowances for office staff, subsistence allowances, fuel, and office overheads. APSO provide the DE. The major problematic areas in obtaining total costs are:

- depreciation of vehicles
- support provided by the regional office
- allocation of Head Office costs
- costs/depreciation of office and other buildings

Three separate methods have been utilised in order to provide varying levels of inclusiveness, with details presented in Annex 4. The following provides a summary of the three methodologies, which take into account the following:

1. Irish Aid expenditures, including APSO estimates for the DE, and GoL costs directly attributable to Qacha's Nek. A contribution for heavy transport from the region has been included. Together these constitute "direct" Qacha's Nek costs.
2. The above, plus an allocation for support services from the Region and from Head Office. This includes one tenth of the GoL recurrent budget. In addition funds spent by the EDF/EU for consultancies (such as project designs), vehicle maintenance and gravity system maintenance.
3. The above, plus an allocation for; infrastructure expenditures, purchases of transport, Helvetas technical support, and training and scholarships.

Village contributions have been excluded. Costs for the above methodologies were obtained for the last financial year (April 1995 to March 1996), and where possible for the previous year. A two year average has been calculated. For calculating per capita costs coverage figures for Qacha's Nek were averaged out over the last five years. This equates to 3,778 persons served per annum.

The following table summarises the costings:

Table 15: Total Costs and Costs per capita (in Maloti)

Methodology	Total Costs for y/e 31/3/96	Costs per capita	Average Costs for 1995 & 1996 Financial years	Costs per capita
1. Directly Attributable to Qacha's Nek	1,388,002	367	1,246,503[1]	329
2. Above, plus allocation for regional and Head Office	1,830,994	485	1,827,748[2]	484
3. Above, plus infrastructure, transport purchases, Helvetas technical support, and Training and scholarships	2,496,384	660	2,424,960	642

[1] *Only Irish Aid amounts available for both years - see Annex 4 for details*
[2] *This includes M267,815 (over the two years) for consultancy payment for design files*

Assuming an average of 3778 people are served per annum, a minimum per capita cost is M329. An all inclusive maximum cost is M660. Utilising methodology one, as representing costs directly attributable to the district, the proportion of costs provided by Irish Aid is 58.1% (two year average). For the 1995/6 financial year alone, the Irish Aid contribution amounts to 62.4%.

Full Coverage Implications:
The most recent estimate of the percentage of the population with an improved water supply system in Qacha's Nek district is 38%. This is based on the situation at the time of the national inspection of water systems, in early 1995. The present time is about the least favourable for discussing full coverage, due to the lack of population data. A census is currently being completed but the results will not be available for several months. Populations used for the National Data base are from the 1986 census, with allowances for population growth.

The present total rural population is estimated at 82,740. Assuming an additional 3,500 people have been served since the inspection, the total remaining number of people to be served is 47,800, which equates to 58% of the population. If 3,800 persons are served per year - it will take twelve and a half years to achieve full coverage. However, this excludes rehabilitations. As indicated there are a number of systems which currently require complete rehabilitation at the moment, and, as systems age, this number will increase.

The financial implications for Irish Aid can be estimated. Based on the above costings it is assumed that the cost per capita for Irish Aid is 60% of M 367 (and thus M 220). With 47,800 persons in need of a safe water supply M10,516,000 is required. As noted, this objective would take about 12½ years to achieve. However, it assumes that no rehabilitations are undertaken, and coverage figures will be able to be maintained at the same rate and cost as DRWS serve the smaller, more remote communities. It represents the amount required so that all villages in Qacha's Nek will have been provided, at some stage, with a water supply system.

Population increases also need to be considered. In the above calculations it was assumed they were incorporated in the level of service standards. Assuming a population growth rate of 2.2% per annum, a collection point serving between 80 -120 people today, will be utilised by 105 - 158 persons in 12½ years time, and by 138 - 207 in 25 years time (the system design life). In addition, definitions of what constitutes a village is required. There are many very small communities consisting of between five and fifteen households scattered around the least accessible regions of the district. More information regarding these issues are noted in the recent SKAT evaluation, which outlines the implications to achieve full coverage by the year 2020.

The above indicates some of the complications involved when defining full coverage. One of the purposes of the national inspection and the compilation of a data base was to obtain background information for the formulating an overall rural water policy and strategy paper. One of the objectives of this paper is to clarify these issues.

11 CONCLUSIONS AND SUMMARY

Sechaba Consultants were commissioned by Irish Aid to carry out an evaluation of the Qacha's Nek Village Water Supply Project. Irish Aid has supported the project since 1990, and does not attempt to be directly involved with DRWS policy. For many other major donors (UNDP, SDC, ODA) influencing policy was stipulated an important objective.

Irish Aid originally supported handpump programmes in the Lowland districts, and in 1988 and 1989 reported their concerns regarding their future maintenance, and decided to support gravity systems in the remote regions of the country. Today handpumps constitute one of the major sustainability concerns for the organisation. Although high coverage figures obtainable under handpump programmes are not possible with gravity systems, history has proved that gravity systems are more sustainable. In addition they provide a higher level of service. When Irish Aid was funding the handpump programmes, handpumps were considered to be the most cost effective technology after a gravity system. Two years ago DRWS re-evaluated the choice of technologies, and handpumps are the last option. Consequently, the decision to fund gravity systems is considered very favourably.

Studies have indicated that the poorer people tend to live in the mountain districts, and the poorest in the more remote parts of these districts. As DRWS serves the remoter areas of the district increasingly poorer people will gain access to an improved system.

Construction Efficiency

Irish Aid have funded Qacha's Nek for over six years. During that time much progress has been achieved. The evaluation has made many comparisons with the other two mountain districts; Mokhotlong and Thaba Tseka. The performance of Qacha's Nek district has been significantly better than these districts. Sixty percent more people have been served compared to Thaba Tseka, and 35% more than in Mokhotlong. Although Qacha's Nek has more field staff, output per field staff is over 20% greater than the other two districts. In addition a higher percentage of collection points are functioning.

In general, construction standards are high, and 95% of CPs are operational. However, it is recommended that the causes of the leaking storage tanks and the reasons for frequent tap changes are investigated. Also, greater attention should be given to protecting exposed pipes.

Levels of Service

With regard to levels of service the district is exceeding the DRWS standards, by providing more collection points than recommended. This indicates a misallocation of resources. It was observed that the situation is similar in Mokhotlong and Thaba Tseka districts, and consequently it is recommended that the situation is assessed on a national basis. Research needs to be undertaken to ascertain the levels of service acceptable to the beneficiaries.

Beneficiary Experiences

The findings from the villagers questionnaire are generally positive. The vast majority of villagers:

- were aware of the project before construction commenced and had attended at least one *pitso* (village meeting);
- stated that the VWC was democratically elected;
- had contributed to *seabo* (fund for future maintenance);
- knew that *seabo* belonged to the village and was for maintenance purposes;
- participated in the construction of the system (both women and men);
- considered that the construction activities went well;
- are satisfied with the level of service provided;
- noted that the system had been reliable; and
- stated that it had improved their lives (less diseases).

Findings from the interviews conducted with the VWCs were not so positive. Although in all the villages a VWC was in existence and *seabo* contributions had been collected and deposited in a bank account, a number of concerns were expressed. Approximately half the number of VWCs interviewed:

- experienced problems organising village labour;
- thought that *seabo* was difficult to collect;
- considered that the overall experience was negative.

In addition only three of the 14 VWCs reported that they had received any training, and most of the pump caretakers stated that either no training was provided or considered it inadequate. *Seabo* had not been used by the majority of VWCs; and only three had utilised the fund for maintenance purposes.

Project Implementation

The results from the interviews, both from individual villagers as well as the VWC members are largely compatible with the perceptions of the district staff. Many of the following recommendations emanate from the workshop discussions with the district staff and from suggestions by VWC members.

It was noted that a key determining factor regarding successful implementation was the level of support provided by the Chief. District personnel recognised that only one VLO per district is not sufficient to undertake the tasks required, and that all staff are involved in "VLO-type" work. However, presently there is no coordinated approach. The STO, who spends much time in the village during the design, should spend more time gaining the support and acceptance of the Chief, rather than informing the villagers of their responsibilities. Perhaps the Chairperson of the VDC (or an active member) should be included. DRWS has reasonably good relations with the DRDO, and consequently, support from the RDAs could be obtained for this.

At the initial *lipitso* more information should be provided regarding the length of time involved and an indication of the amount of labour required for various activities. In addition the tasks of the VWC members should be clarified in order that suitable candidates are selected.

Training should be provided to the VWC members, in particular regarding the organisation of labour. In the past one reason this was not done was because construction activities were not well planned by DRWS staff. DRWS expected villagers to turn up at short notice, without specifying the numbers required, as if villagers had nothing better to do with their time. This aspect has received much attention over the past three years, and with the introduction of construction schedules it should be possible to provide the VWC with detailed labour requirements for at least the following four weeks. The idea of dividing the village into smaller groups could be suggested to those VWC experiencing difficulties.

Less emphasis should be placed on *seabo*. The average amounts collected in Qacha's Nek are high compared to Mokhotlong and Thaba Tseka. The collection of financial contributions cause much friction within a village, and although most villagers realise the purpose of the collections, the funds are not used for maintenance purposes for several years after project completion. The average amount of funds collected is above the maximum amount which is payable if DRWS were requested to undertake major repairs. It is recommended that households are requested to contribute M5.00 initially, and emphasis given to the necessity of regular (yearly) contributions for maintenance purposes.

The use of *seabo* (or any other village funds) for opening ceremonies (often over M500) is questioned. The degree to which they impart an increased sense of ownership needs to be ascertained.

During the construction phase better planning is required in order that materials are on site when required. The new financial procedures and the allocation of a truck should facilitate this requirement.

Training should be given a greater priority. VWC members should be provided with basic book-keeping, managerial and problem solving skills, as well as the tools (i.e. a record book and pen) with which to carry them out. This could be more formalised, and perhaps groups of three or four VWCs can be trained together, utilising a local school classroom.

Although no correlation was found between system functioning and the existence of a water minder, it is clear that preventive maintenance activities need to be completed, as well as skills developed in order to carry out minor repairs. Greater attention should be given to the selection of water minders, and they should be familiar with undertaking their tasks. payment

Recent initiatives to concentrate activities in the more accessible lower areas in the coldest months are encouraged.

Conditions for Field Staff

With regard to the working conditions for the field staff, Irish Aid could consider providing a one-off payment to equip the guest house with curtains and blankets, and a "queen" stove. Perhaps electricity for lighting could be installed, but no power points, and DRWS could cover the small additional electricity charges.

Maintenance

Qacha's Nek has a good record regarding maintenance activities. Requests for DRWS maintenance services are quickly and efficiently attended.

Localisation

DRWS has made much progress in the localisation of key positions. Due to the unpredictability of the future situation, it is not recommended that Irish Aid aim for localisation at the end of the current APSO engineer's contract. The situation should be reassessed in two years time. The performance of APSO engineers has been very good. It is recommended that early steps are taken by DRWS with APSO to recruit another engineer to take over. Attempts should be made to ensure a minimum of 6 weeks handover.

Recent DRWS evaluations of the student scholarship programme are favourably regarded. Training in management should be incorporated, perhaps at the Institute of Development Management. It is recommended that Irish Aid keep in touch with developments.

Pumping Systems

In the past a few villages have been left unserved due to the lack of springs with sufficient head. It is recommended that Irish Aid should fund projects which require hydraulic rams or solar powered pumping systems.

Water Quality

The quality of the water has been tested and no faecal coliforms were found. However, in order that any complaints or queries can be investigated it is recommended that water quality testing capabilities are established at district level. Consequently, the Del Agua kit should be returned to the district, and the DE provide training on how to take water samples and how to use the kit.

Sanitation and Health Education

Experiences of sector coordination have not been successful in Lesotho. The ODA evaluation of Phase IV noted the cooperation between DRWS and NRSP "has not worked as envisaged. It could be argued that the actual relationship between the two organisations has been a negative one for the achievement of project objectives" (page 36). An NRSP evaluation in 1993 recommended that the relevant Government departments should initiate such activities.

It is not recommended that Irish Aid get too involved with sector coordination issues. Progress is underway, albeit at a slow pace. The position of the Village Liaison Officer (VLO) is relatively new, and it is recognised that increased capacity in this area will be

necessary. Currently the VLOs are encouraged to liaise with Village Health Workers (VHW). This initiative is encouraging.

Protection of Traditional Springs

It is recommended that for all new constructions all traditional springs which are used for household purposes are identified and protected. This goes beyond the current policy, which states that all springs within 150 metres of households be protected. Irish Aid should consider funding water quality testing, and protecting traditional springs in served villages utilising the private sector.

NGO Activity

There has been only one NGO active in Qacha's Nek, and they ceased operations in 1995. DRWS agreed to take over the maintenance, which will require much work as many of the systems are old, and the construction standards employed by the organisation were generally poor. Consequently, the majority require rehabilitation. A number of recommendations relating to the rehabilitation of these systems is given on page 31.

Costs

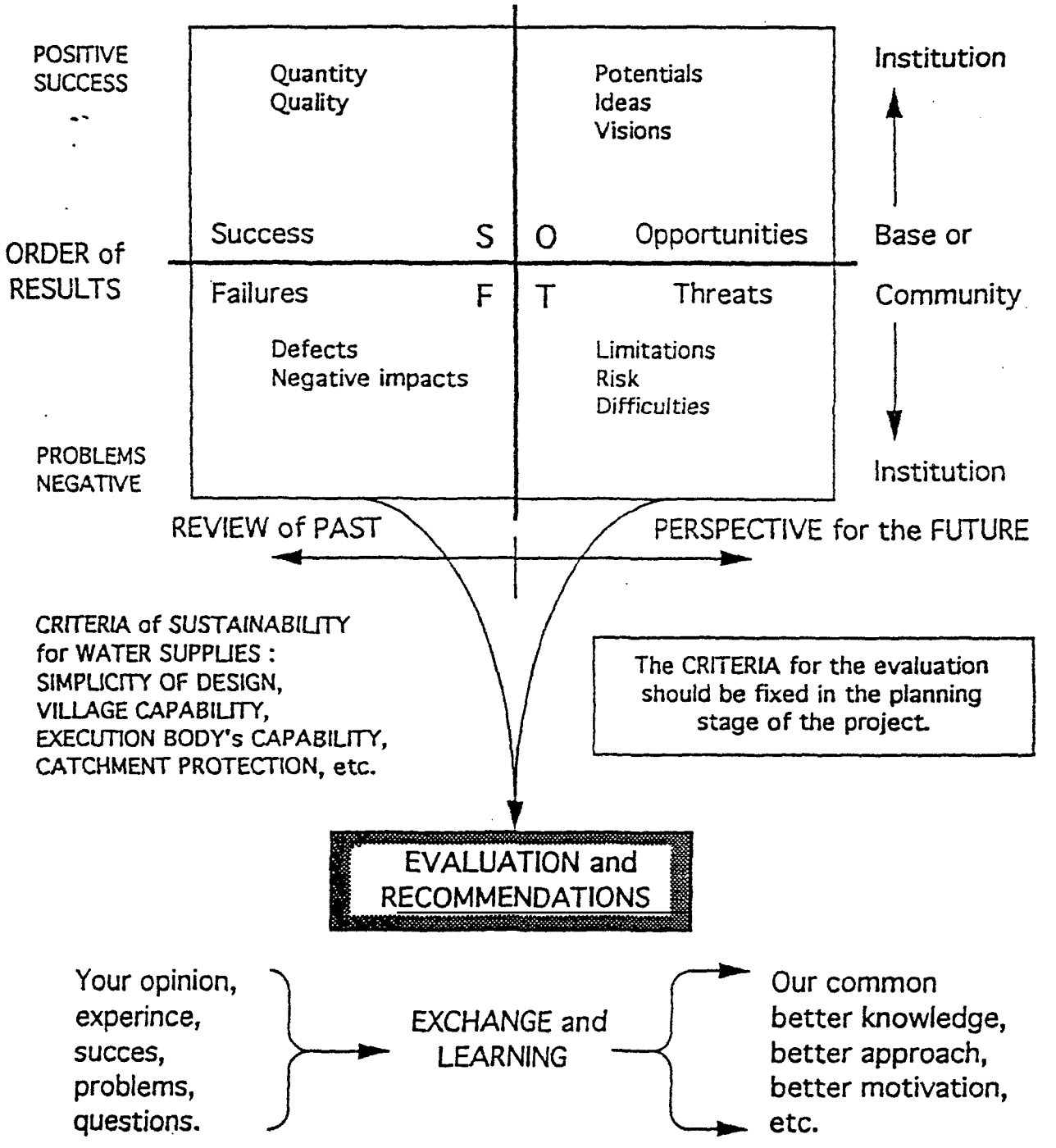
Three costing methodologies were utilised in order that regional and head office costs, as well as allocations for infrastructure, training, technical assistance, etc. are incorporated and differentiated. Where possible the figures were obtained for the last two financial years. The results were then related to costs per capita served.

Assuming an average of 3778 people are served per annum, the per capita costs range from a minimum figure of M329, to an all inclusive maximum of M660. Utilising the minimum figures for the costs directly attributable to the district, the proportion provided by Irish Aid is about 60 % and thus equates to M220 per capita.

user contribution

S O F T a Rapid Evaluation Method

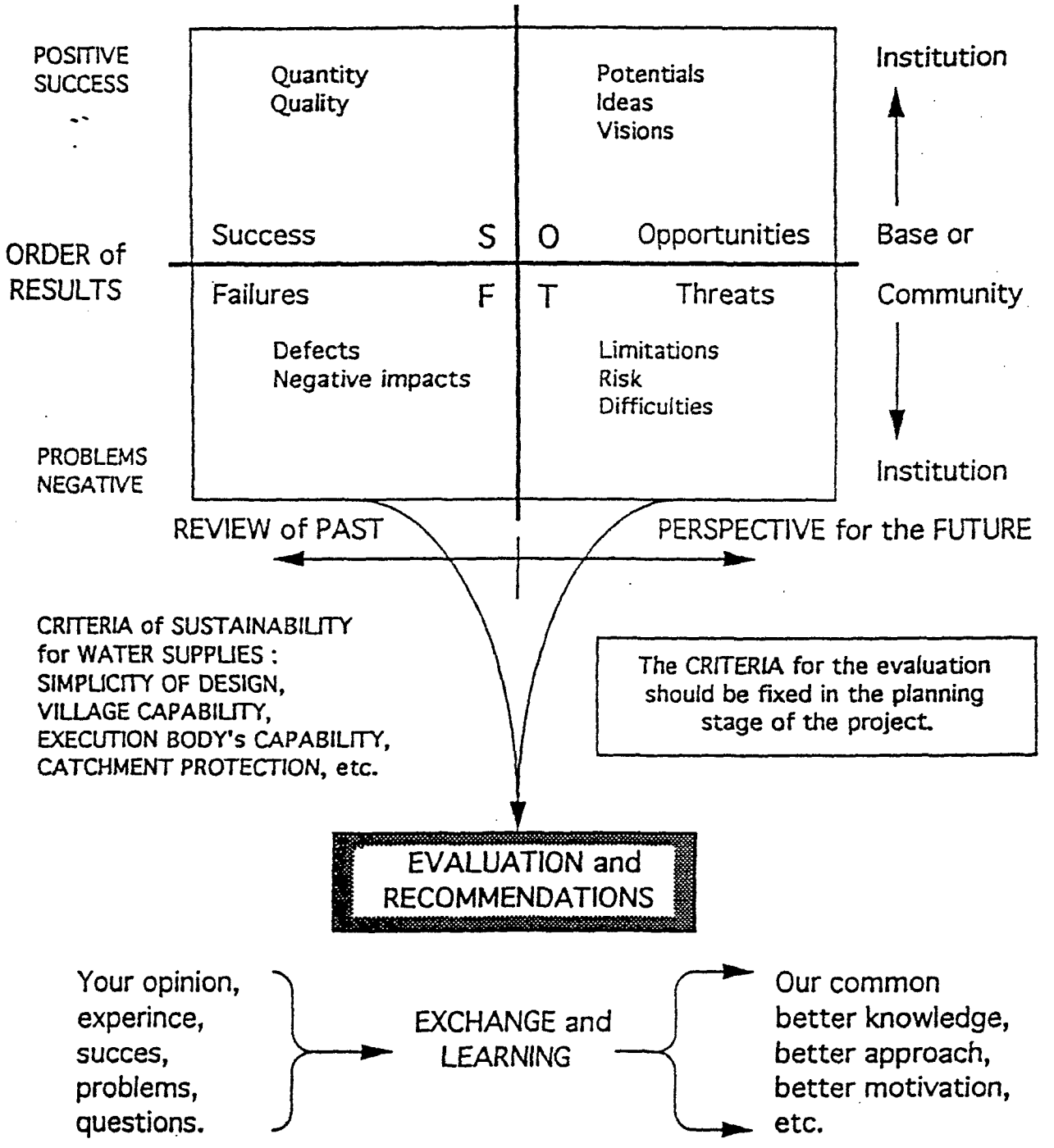
SOFT is a method with a very simple structure to evaluate results, as successes and failures (Review of past activities), opportunities or potentials and threats or problems (Future perspectives). All the activities are set in an hierarchical order fom base to top or from community to institution.



Annex 1 SWPO Method

S O F T a Rapid Evaluation Method

SOFT is a method with a very simple structure to evaluate results, as successes and failures (Review of past activities), opportunities or potentials and threats or problems (Future perspectives). All the activities are set in an hierarchical order fom base to top or from community to institution.



Annex 2 Questionnaires

VILLAGERS QUESTIONS:

SEX: 1. Male 2. Female [ ] **Member of Committees:** [ ]
0. None / 1. VWC / 2. VDC/ 3. Other

Name of Village: **Type of system:** [ ]
1. gravity 2. WP

REF No: **1st system** [ ] **If no, who built first:**

Other Projects: _____

PRE-CONSTRUCTION:

Were you aware w/proj was going to take place? [ ]
1. YES 2. NO

How? 1.Village gossip..... 2. Pitso..... 3. Other

Did you attend pitso on water (1. Yes 2. No) [ ] **How many pitso** [ ]

Was VWC democratically elected ? (1. Yes 2. No) [ ]

Did you pay seabo [ ] **Did all h/hs** [ ] **What about poorer h/hs?**

Who does seabo money belong to..... What is it for.....

CONSTRUCTION:

Did you work (1. Yes 2. No) [ ] **How many days /weeks / months*** [ ]

Was this (1) same as others, (2) more than others (3) less than others [ ]

Comments

How do other villagers regard those who worked most? [ ]
1. More respect / 2. No different/ 3. less respect

Comments

Were you expecting pay? [ ] **If yes, who told you?....**

Did work take A. longer / B. shorter* [ ] **than you expected?** 1. much / 2. little / 3.same [ ]

Did the work inconvenience your life? 1. Not very much / 2. a lot / 3. None [ ]

How? e.g. loss of earnings/ farming neglected / other consequencies?

Did all villagers work ☐ **What did VWC do about non workers**

Did many men contribute labour? (1. Yes 2. No) ☐
Explain:

How did VWC organise labour?

What problems arose

Who's fault: 1. DRDO/ 2. DRWS/ 3. VWC/ 4 Villagers / 5 Other ☐
How were they sorted out ?

Overall, how did it go: ☐ **1. Good / 2 Not good / 3 Neither good nor bad**
Comments:

Prompt on gender: did men/women work equally?

POST CONSTRUCTION: Are you happy with level of service? (1. Yes 2. No) ☐
Prompt: distance; queuing time; filling time
Other Comments

How reliable has the system been? 1. Not worked / 2. Poorly / 3. Well ☐
Explain...

Has it ever broken? (1. Yes 2. No) ☐ **How many times** ☐

If only taps tick ☐

Who fixed it? 1. WM / 2. DRWS/ 3. Villager / 4. Other: ☐ ☐ ☐
1st 2nd 3rd time broken

Has VWC asked for more contributions? (1. Yes 2. No) ☐

Has wss made any difference to your life? (1. Yes 2. No) ☐
How? Comments

WATER COMMITTEES:

People Interviewed	Male	Fem
VWC Members		
WM		
Chief		
VDC members		
Other Societies,		
Total interviewed		

Ref No:

VILLAGE NAME:

PRE - CONSTRUCTION:
How was application made/ 1st contact:

How long to wait before const start:

What training given by:
VWSS:

DRDO:

Do you think you were adequately prepared? (1. Yes 2. No) ☐
Comments

Was it difficult to collect seabo? (1. Yes 2. No) ☐

Where is money kept? ☐ Time to bank ☐ ConvenienceCost

Did some h/h have a reason not to pay? **(1. Yes 2. No)** ☐
Action?

Did all h/h pay seabo? **(1. Yes 2. No)** ☐
How did you decide which h/h too poor to pay?

What did you do about poor h/h?

Who's money is it? What is money for?

CONSTRUCTION

Did most h/h contribute labour? ____ **What action by VWC to those not contributing?**

Were there times when VWS wanted more labour than attended? (1. Yes 2. No) ____
What did you do?

What problems with organising labour?

How did you resolve them?

What Advice/help provided on organising labour ?

How effective was the advice? 1. Very good / 2. not helpful / 3. not good/not bad ____
Comments

Who gave it? 1 DRWS / 2. DRDO / Other ____
if DRWS who? 1. Don't Know / 2. DE / 3 Supervisor / 4 Mason / 5 VLO ____

Did many males work? (1. Yes 2. No) ____ **Comparison with females?**

Why few men/ women?

Did work take A. longer / B. shorter* ____ **than you expected?** 1. much / 2. little / 3.same ____

Did the work inconvenience your life? 1. Not very much / 2. a lot / 3. None ____
How? e.g. loss of earnings/ farming neglected / other consequencies?

Overall how did the work go?

POST CONSTRUCTION

How many WM: ____ **number of Male** ____ **Female** ____

Did you choose WM? (1. Yes 2. No) ☐ **How good is she/he?** ☐ ☐
If no Who did?
1. good / 2. no good / 3 average

Is she/he the original WM ? (1. Yes 2. No) ☐
Was training adequate? **(1. Yes 2. No)** ☐

What regular work carried out by WM: ☐
1. Clean Siltbox / 2 clean tank / 3 clean tapstands/ 4 Other (specify)

What repairs undertaken by WM? ☐
1. Change tap / 2. masonry work 3. repair pipe / 4 other

Who else does repairs?
what done?

What Does VWC do now? What has it done since construction finished?

Do you ever hold meetings ☐ **Frequency** ☐
Purpose:

People who didn't contribute seabo can they draw water? (1. Yes 2. No) ☐
Is there any ill-feeling against those who didn't contribute (1. Yes 2. No) ☐
Comments

People who didn't contribute labour can they draw water? (1. Yes 2. No) ☐
Is there any ill-feeling against those who didn't contribute (1. Yes 2. No) ☐
Comments

Did seabo / labour contributions create arguments within the village?
☐ **(1. Yes 2. No).** Comments

Was friction caused by any other factors? (1. Yes 2. No) ☐
Details

How much is in seabo account ? M ☐ **When was account last used** ☐

What was it used for? 1. Buy materials for WM/ 2. Pay forVWSS repairs/ 3. Other [ ]

How many times before that [ ] **How much in total has been used?** [**M**]

What is more important, to contribute labour/ money -
Comments

What suggestions do you have to improve things (not just seabo) for new villages?

What advice would you give to a new VWC member in a new village?

Has water system made any difference to your life? (1. Yes 2. No) [ ]
What?

Overall Experience for all the village? 1. positive / 2. negative/ 3 Other [ ]
Comments

Are there any activities (similar type work) that villagers have done since?
(1. Yes 2. No)
[ ] Details:

Any projects done before the water system built? (1. Yes 2. No) [ ]
Details:

Trad springs dried up ?

Annex 3 List of Projects

LISTS OF PROJECTS

Project Name	Ref. No	Population	Status	Notes
From the March 1991 Irish Aid review				
Ha Ratsiu[1]	QN 166	**455**	U/Con	Due for completion Sept 1996
Ha Thibathere	QN 097	350	Compl	Completed in 1992
Ha Likonyeleng[1]	QN 098	**303**	U/Con	Due for completion Sept 1996
Ha Khubetsoana[1]	QN 218	750	Done	Completed in May 1996
Ha Thabo	QN 060	770	Sp Meas	Pumping system required
Ha Chabana	QN 032	850	Sp Meas	Pumping system required
Ha Likoeboleng	QN 215	250	Not done	
Ha Sepechale	QN 216	450	Sp Meas	
Ha Mosiuoa	QN 183	900	?	Pumping system required
Ha Moshebi[1]	QN 010	**707**	Designed	Pumping system required
Ha Muvuka[1]	QN 171	**585**	Designed	Rehabilitation - old zinc tanks
Ha Edward[1]	QN 181	**693**	Designed	Rehabilitation - old zinc tanks
Ha Isaac	QN 217	400	?	Village Not known
Whitehill	QN 086	600	Not done	Rehabilitation - ex SMWP
Ha Ntsoane[1]	QN **245**	500	Designed	Rehabilitation - ex SMWP
Ha Ma'tholeng	QN 081	250	Designed	Rehabilitation - ex SMWP
Ha Manyatse	QN 153	950	Sp Meas	Rehabilitation - ex SMWP
Ha Ramapane	QN 096	200	Sp Meas	Rehabilitation - ex SMWP
Ha Raliseme[1]	QN 059	**700**	Sp Meas	Rehabilitation - ex SMWP
From the January 1994 Irish Aid Review				
Ha Tereseng	QN 024	**294**	Done	Completed in 1995
Ha Mphahama	QN 203	**470**	Done	Completed in 1995
Ha Malibona	QN 216		See Ha Sepechale above	
Ha Nqhoaki	QN 205	**390**	Done	Completed Nov 1995
Ha Khohlong	QN 237	**250**	Done	Completed in May 1995
Ha Hlapalimana	QN 066	**400**		extension of Ramoroke
Ha Thabeng	QN 234	**423**	Done	also known as Ha Bloumane - completed in Feb 1996
Ha Ntseketsi				part of Ha Ntsekima QN 219
Ha Ntsie	QN 125	700	Done	also known as Ha Mokhothu / Kopanong (completed 1994)
Ha Masututsoana	QN 091	800	Sp Meas	
Ha Ntsekima	QN 219	**300**	U/Con	due for completion July1996
Ha Stefane	QN 221	**750**	U/Con	Construction started in 1992 - but community problems
Ha Soloja	QN 138	**200**	Done	Completed in January 1996
Ha Motsielo	QN 235	900	Designed	carried out by consultants
Ha Ratsiu	QN 166	**455**	U/Con	due for completion Sept 1996
Ha Malefane	QN 165	**578**	Designed	part of Ha Taung (QN 105) - pumping system required

Project Name	Ref. No	Population	Status	Notes
Other villages				
Ha Hlapalimane	QN 013	626	Designed	planned for this year
Ha Moeeng	QN 053		Designed	
Ha Sehlebathabe	QN 025	445	U/Con	Planned for completion Sept 1996
Ha Makoae	QN 062		Designed	
Drie Hoek	QN 099		Designed	
Ha Letsoha	QN 122	442	Designed	planned for this year
Ha Makhaleng	QN 123		Designed	
Ha Thifu	QN 134		U/Con	on-going
Ha Mapheleng	QN 149	530	Designed	planned for this year
Ha Raene	QN 155	407	U/Con	solar system required
Ha Shakane	QN 223		Designed	
Ha Motsiloa	QN 235		Designed	
Ha Leihloana	QN 241	530	Done	Completed in June 1996
Ha Khamakhamane	QN 244		Designed	
Ha Laphaene	QN 246	176	Designed	planned for this year
Ha Raporoto	QN 247	123	Designed	planned for this year
Molling	QN 250	120	Designed	planned for this year
Maboloka	QN 251	462	Designed	planned for this year
Ha Phahameng	QN 256	200	Designed	planned for this year
Ha Ramahleala	QN 257		Designed	
Kebakile's Hoek	QN 028	120	Designed	planned for this year
Ha Sephelane	QN 259		Designed	
Ha Matholeng	QN 081		Designed	
Ha Liphakoeng	QN 017	350	Designed	planned for this year
Thaba Tseou	QN 076	640	Done	completed in June 1996 - had been on-going for 2 years due to village problems
Ha Mosolo	QN 168	350	U/Con	planned for completion July '96

[1] Projects also listed in the January 1994 Irish Aid review
Population figures in bold indicate a revised figure.

U/Con : Under construction
Sp Meas : Spring measurements

Note: The above table does not constitute either the complete list of projects recently completed or all projects which are due for completion in the coming year.

Annex 4 Cost Assumptions

Cost Assumptions

The following information relates to Section 11 page 24.

1. APSO DE

Cost estimates obtained from APSO Office, Maseru. Costs vary depending on the previous overseas work experience and the marital status (including no. of children) of the volunteer. For a 2 year period, cheapest cost approx Ir. £ 14,000; and expensive cost approx Ir. £ 50,000. This includes wages and allowances, health insurance, flights, etc. Assumed as £10,000 (M 65,000) per annum.

2. Irish Aid

Obtained from Status of Funds Reports - Capital Budgets. Year ending 31/3/96 Funds spent 715-070-00060/00020 total M865,848.88. For y/e 31/3/95 total M582,850. Average for the 2 years M 724,350.

3. Qacha's Nek Direct Costs

These have been estimated for y/e 31/3/96. They include all above costs plus GoL wages, vehicle expenses, and overhead costs. GoL salaries for QN staff under vote 015-070-01013 M 26,191 for 1 month. Assumed to be M314292 for the year. Vehicle fuel expenses obtained from QR 5B (quarter 4), which includes total fuel costs and maintenance costs, M66,598. One quarter of the Regional Vehicle costs has been added (M 20,077). Overheads obtained from the Qacha's Nek Monthly Expenditure Report Form for March 1996, includes various expenditures under vote number 015-070- includes allowances (M1980), casual labour (M840), fares (M5772), accommodation (M4414), overheads - toilet paper/stationary (M2822), and power - mainly coal (M1358). In addition various overhead costs are paid by the region. These are estimated; phone/fax (M30,000), water (M3000), and electricity (6000). The combined total amounts to M457,153.

The above three constitute costs in Methodology 1.

Figures: For 1995/6; 65,000 + 865,849 + 457,153 = 1,388,002.
For year ending 31/3/1995; the same APSO figure is used, and QN direct costs, but with the actual Irish Aid amount. 65,000 + 582,850 + 457,153 = 1,105,003.
2 year average, utilises Irish Aid average amount of 724,350 and the same figures as above: 65,000 + 724,350 + 457,153 = 1,246,503.

4. Region/Head Office costs Obtained from Status of Funds Report - Recurrent Budget. All items have been included. These are all under vote 015-070-. Total of Funds Spent for y/e 31/3/96 amounts to M4,389,745. The total for 1994/95 was M 4,121,701. In addition the EDF/EU funds consultancies (such as project designs), vehicle maintenance and gravity system maintenance. These have been included. Funds Spent in the 1994/95 financial year are respectively M2,678,127, M378,655 and M 16503. This totals M3,073,285. For the 1995/96 year no designs were contracted out and M34245 was spent on vehicle maintenance and M5926 for gravity maintenance. These total M 40171. The totals have been divided by ten (ten districts).

The above four constitute costs in Methodology 2

Figures: 1995/6; (4,389,745 + 40,171) x 1/10 = 442,992 plus 1,388,002 (carried down) = 1,830,994.
For 1994/5; (4,121,701 + 3,073,285) x 1/10 = 719,499 plus 1,105,003 (c/d) = 1,824,502. 2 yr average is thus 1,827,748.

5. Other Costs These include infrastructure, transport purchase costs, scholarships, and the Helvetas budget, which funds training/ workshops/ meetings etc, and the wages of most ex-patriate head office personnel. Infrastructure is provided by EU and SDC. In 1994/5 this amounted to M379,070 and in 1995/6 to M563,895. (Status of Funds Reports). Transport purchases amounted to M2,181,279 in 1994/5, and the committed funds in 1995/6 to M2,860,000. Technical assistance and training amounted to about M2,730,000 in 1994/5 and M3,230,000 in 1995/6. As above, these amounts have been totalled and equally divided between the districts.

Figures: 1995/6: (563,895 + 2,860,000 + 3,230,000) x 1/10 = 665,390 plus 1,830,994 (c/d) = 2,496,384
1994/5: (379,070 + 2,181,279 + 2,730,000) x 1/10 = 529,035 plus 1,824,502 (c/d) = 2,353,537.
The 2 yr average is 2,424,960.

The above five constitute costs in Methodology 3. It is assumed that by including costs of the purchase of vehicles for one year that account is taken for depreciation of the fleet. The Irish Aid funds include in 1994/5 M80,000 for purchasing a Toyota 4x4 pick up, and M9,911 for vehicle maintenance; and M19,226 in 1995/6 for vehicle maintenance. The combined amounts are considered to provide a realistic estimate. It is assumed expenditures on infrastructure allow for the capital and depreciation of buildings. Methodology 2 includes expenditures on maintenance of buildings, which is in the GoL recurrent budget. This method of costing for capital and depreciation may not be acceptable to accountants but provides a fair estimate.