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EVALUATION OF RURAL WATER SUPPLY, ZIMBABWE

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hifab International
PROJECT MANAGERS

Zimconsult
Economic & Planning Consultants

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The views expressed in this report are those of the authors and should not be attributed to the Royal Norwegian Ministry of Development Cooperation.

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EXECUTIVE SUMMARY

OF CONCLUSIONS AND RECOMMENDATIONS

The Evaluation Team was asked to review Norway's support to the rural water supply and sanitation sector in Zimbabwe and to present options for future Norwegian support to the sector. With reference to the Terms of Reference for the Evaluation Study the Ministry of Development Cooperation had requested that emphasis should be placed on the forward looking aspects.

The Norwegian support has covered a wide range of activities and it has played a major role in promoting sector development in Zimbabwe. Inevitably this has led the Team to discuss some of the major sector issues as they are both influencing and being influenced by Norway's support.

Four major programmes were the subject of the present Study, namely:

* ZIB 003 - National Master Plan for Rural Water Supply and Sanitation, for which NOK 20 mill. was provided (1983 - 86)

* ZIB 006 - Borehole Drilling Programme - Mashonaland (the "Crash Programme"), for which NOK 28 mill. was voted and approximately NOK 24 mill. spent (1984 - 85)

* ZIB 006 - Manicaland Integrated Rural Water Supply and Sanitation Programme, for which NOK 24.3 mill. was provided (incl. support to the inception of computer based information management) (1985 - 87)

* ZIB 007 - Water Supply and Sanitation Sector Support Programme, for which NOK 180 mill. has been committed (1987 -)

It is also important to observe that Norway supported rehabilitation, maintenance and new construction of rural water supplies through the ZIB 001 programme (1981 - 87). This programme was evaluated in 1984 and is therefore excluded from the present study.

CONCLUSIONS

The National Master Plan for Rural Water Supply and Sanitation (NMWP) was prepared at a time when Zimbabwe was still in the process of formulating its long term policy after independence and provided inputs to this process. Some important national policy issues had, however, not yet been resolved, for example the status and autonomy of local governments.

The NMWP presented recommendations in respect of policies, strategies, technology selection, implementation methods, manpower development, organisational reforms, and financing of sector development. The Plan covered communal lands and resettlement areas only and was further limited to water for domestic and cattle watering purposes.

Under the auspices of the interministerial National Action Committee (NAC), these recommendations have been extensively discussed and most of them have been adopted for practical implementation. The NMWP document and in particular the process of sector review that the Study initiated, have been valuable contributions to sound sector development.

However, the NMWP has not yet been approved by the Cabinet although several draft recommendations have been prepared by the Ministry of Energy and Water Resources and Development (MEWRD). The fact that NAC has not yet been able to reach concensus in these matters reflects on the conflicts still existing between the water sector ministries. Not least the dispute concerning responsibilities for borehole drilling between MEWRD and District Development Fund (DDF) has been a major cause of this delay.

The ZIB 006 - Crash Programme was initated as a drought relief programme in the three Mashonaland provinces following the severe drought during the early 1980's. As a project it was successfully completed within only 9.5 months, much owing to efficient administration by the MEWRD combined with good performance by consultant and contractor. 320 boreholes were completed with ancillary headworks facilities, potentially serving upto 275,000 people during drought when other sources dry up.

The urgency of the drought relief precluded the level of community participation which the emerging recommendations of the NMWP advocated. The efforts aimed at creating local water committees and training of pump caretakers have not given the expected results; the committees have mostly ceased to exist and the caretakers have received little support. Important lessons were learnt, however, and a general awareness of what community mobilisation for water projects involves, was brought about.

The ZIB 006 - Manicaland Programme was the first attempt to implement rural water supply and sanitation projects in accordance with the integrated approach as recommended by the NMWP. The complexity and time requirements of this programme concept were underestimated and delays occurred. However, at the end of the extended programme period a total of 250 boreholes,

250 deep wells and 850 latrines had been completed, all with a substantial element of community participation.

The programme implementation was organised under MEWRD with a consultant in charge of planning, community mobilisation and construction supervision whereas a non-governmental organisation carried out well sinking. Extension workers of other ministries were utilised in the field, but no funds were specifically allocated for their ministries. Hence, these ministries felt little responsibility for the projects and their continuing support to the local water committees has proved to be a problem. Similarly, the communities are often not aware of who to contact when they need assistance.

In spite of the shortcomings resulting from deficiences in the programme organisation, the overall implementation was still successful. Procedures for community involvement were substantially improved and the programme progress was to a great extent determined by the premises implied by community participation.

The review of programme activities in the two districts, Makoni and Chipinge, also revealed the problem of local priority and need assesment. In Makoni people considered the new facilities as a useful back-up for dry season use whilst they continued using their traditional sources for most of the year. In Chipinge - a rather marginal area with severe water problems - the new installations resulted in immediate time savings for the local population as their traditional water collection journey could often be 5 - 10 kms. This fact further confirms the need to consider each district as a unique project area.

The ZIB 007 - Sector Support Programme addresses most of the problems noted during the past implementation programmes. It is based on coordination and cooperation among the ministries assigned specific roles for sector development according to the NMWP. Each of these ministries are allocated separate funds for their participation within the coordinated planning and implementation under the Ministry of Local Government, Rural and Urban Development (MLGRUD). The NORAD supported National Coordination Unit (NCU) has been instrumental in the promotion and orderly management of the programme.

An important and promising aspect of this strategy is the attempts at decentralisation; planning and implementing responsibilities have been devolved to the District level. Although present Government regulations, for instance with regard to payment procedures, preclude a fully decentralised implementation, the present model may set a valuable example for rural development in other sectors.

This current programme is in principle open to accommodate any sector initiative which lies within its broad objectives and the available finances. Consequently a very wide range of separate projects have been approved, making both management (Zimbabwe) and appraisal (NORAD) of the programme very demanding and complex.

Norwegian support to Zimbabwe's rural water sector constitutes around 50% of the foreign support. Also being untied and available for important management support at the central level, much of the recent sector development has been associated with NORAD. This is an unintended effect which should be counteracted to the benefit of both parties.

With regard to achievement of the overall programme objectives - improved health, economic devlopment and reduced physical burden on women and children - the major emphasis has successfully been put on installation of facilities (primary water supplies and latrines). Whereas these are necessary preconditions and therefore well justified, there is a need to address the issues of commity mobilisation (in particular through health education) and economic development more vigorously within the present and future programme framework. The proposals made in this report are aimed at enhancing the possibilities of meeting long term objectives through gradually broader district programmes developing from the good start which has been made.

The current overall sector development trends in Zimbabwe are positive and encouraging. The important problem areas are being debated and many problems are in the process of being resolved. The dedication and skills observed at all levels during the Study are no less than impressive, placing these programmes high on the list of similar NORAD financed activities in Africa.

The implementation strategy is based on decentralisation and integration of the relevant interventions (and thereby ministries) into unified district programmes. An implementation period of 3 - 5 years is allocated for each district in order to provide for efficient utilisation of resources and fast achievement of target service levels. Both experiences and assessment of the requirements of such district programmes indicate a risk that the planning, supervision and maintenance tasks may become unmanagable for the local staff.It is not acceptable that the ensuing "problems" be solved by providing external resources to the district - paid for by the donor - on a temporary basis. This not withstanding, there is still scope for utilising NGO's and private sector resources providing the management capacity is not exceeded.

Community participation has become a key feature of the sector strategy with local beneficiaries being mobilised through a pre-siting procedure where the programme implementors present the plans and request the communities' decision on important aspects concerning location, contributions and maintenance. Nevertheless, the commitments requested from the communities at present are relatively modest compared to programmes in other African countries. The capacity and capability of the Ministry of Community and Cooperative Development and Women's Affairs (MCCDWA) could become a crucial constraint for the continued expansion of the sector programme. Documentation of procedures, training of staff and routines for continuing support to community level organisations are urgently required.

With regard to gender relations, MCCDWA also has a key role to play in the promotion of women's role in sector development. So far the NORAD supported programmes have contributed little to progress in terms of female influence at the respective programme levels. This relates to the general climate for women to take on responsibilities in Zimbabwe and not to specific shortcomings of the programmes. The few areas where women have been given opportunities, for example as well sinkers and in water committees, may provide avenues for increased influence and access to new opportunities. At the community level women are of course the main beneficiaries to the extent that water fetching labour has been reduced.

No adverse environmental effects have been observed in the course of the Evaluation and neither have such effects been reported as a result of domestic water supply and sanitation elsewhere in Zimbabwe. If the programme is expanded to incorporate more substantial water abstraction for productive purposes, the issue may, however, become more critical.

In terms of manpower development the Water Sector has been able to promote skills and motivation among sector employees. Still it can be foreseen that availability of qualified manpower will soon become a severe constraint for the expanded development. This relates both to allocation of new posts, Government's ability to retain qualified staff and to adequate training opportunities. Without an approved NMWP the Government commitment is not clearly spelt out and it is difficult to obtain priority for the manpower development implied by the ambitious sector programmes. The NAC's recent decision to make more pragmatic use of NGO/private sector personnel will help to alleviate some of the present manpower constraints.

The applied technology is considered appropriate and the installations well suited to a high degree of community maintenance. The drilling equipment employed for borehole construction has, however, in many instances dictated a pace of implementation which is incompatible with the slow process of genuine community participation. It is encouraging that the authorities are continuously searching for cost-effective technologies to be employed in the rural programmes. In this respect Zimbabwe is setting a good example for other African countries. However, a substantial number of new wells have proved not to be perennial and yield characteristics ought to be established through a well monitoring programme. It is also a need to review the choice of building materials used for latrines as the "national standard" has been too rigidly employed in some cases.

Development of the maintenance capacity is an ongoing process where substantial progress has been made by DDF over the last years. Aspects of the recently introduced three-tier maintenance system require to be further considered, however. The Evaluation has clearly demonstrated the need to adapt the maintenance system to the characteristics of each district. There is also a question

whether DDF will be given sufficient resources to service the rapidly increasing stock of installations unless mechanisms for cost sharing with the beneficiaries are introduced. Initiatives towards introduction of cost recovery also for rural areas have been taken recently. This is positive and should be closely observed both because of the possibility to finance recurrent costs and because of the socio-economic aspects.

RECOMMENDATIONS

The Water Sector in Zimbabwe has been growing rapidly during a time when most public sectors have been shrinking. The current pace of expanded development - substantially based on donor contributions - has caused a pressure on the sector management both at central, provincial and district level (where programmes are implemented). An overall objective for NORAD and other donors in consultation with the Government should be to trim the support at any one time to comply with the absorptive capacity of the sector.

In order to reduce its seemingly dominant influence NORAD should request that

- a Zimbabwean national be appointed Head of the National Coordination Unit, replacing the Norwegian Technical Assistance post
- a manpower review be carried out to specify technical assistance requirements and prospects for recruiting Zimbabwean replacements

It is envisaged that substantial resources will be made available for integrated district programmes over the next 10 - 15 years. Considering the identified problems and constraints the Team has recommended that

- the current strategy for implementation should be carefully evaluated on a participatory basis by a team of ministry officials and independant consultants with a view to propose modifications where appropriate

There is a strong desire at the community level for support also to water supply for productive purposes. Considering the importance of enhancing the economic basis for the rural population, the Team has recommended that

- water development for agricultural use such as minor irrigation and garden watering should be given priority within the programme in the future

A number of specific actions addressing constraints and problem areas within the ongoing programme has been listed for consideration by NORAD and the Government of Zimbabwe. These include, inter alia:

- Implementation of pilot project for small scale irrigation
- Introduction of well monitoring and drought forecast
- Training of district teams
- Review of the computer based information management system (CAWIDS)
- Introduction of cable tool drilling equipment in DDF
- Strengthen the support to maintenance development
- Support to applied research as a development or problem solving activity for the programme
- Support to water supply for small rural centres
- Support to further development of the family well concept
- Support to development of appropriate cost recovery mechanisms

Although new programme components have been proposed for consideration, NORAD should adopt as an overall aim to rationalize the programme and therefore concentrate the support on fewer individual projects. The majority of projects financed under the current agreement should be fully completed before its expiry. This will facilitate redirection and concentration of the support towards priority areas for the next period. As a result the new programme should cover selected districts complying with an updated strategy for integrated projects, ref. the above referenced evaluation. Support to national sector development tasks should be limited and gradually phased out in order to achieve a less complex programme.

For a possible future continuation of the sector support it is recommended that the programme should incorporate the following elements:

- Comprehensive district programmes where water for productive purposes becomes a major feature
- Pilot projects providing opportunity for experimental implementation based on new methods
- Sector management support on a limited scale to continue the strengthening of critical areas to ensure appropriate and sustainable Zimbabwean capacity

Stock should again be taken of experiences gained towards the end of the current agreement period. Formulation of a possible continued Sector Support Programme should be firmly based on these experiences.

Another important challenge for the programme management - and indeed for the sector as a whole - is to develop a monitoring and evaluation system. This system should enable the sector managers to review programme performance during the planning/ implementation stage and eventually provide data on the various achievements and impacts of the programme in the longer term.

ACKNOWLEDGEMENTS

The Evaluation Study involved many people in both Zimbabwe and Norway. The Team would like to express its sincere appreciation for the cooperation, assistance and positive contributions received from all these people.

In particular, we were impressed by the enthusiasm and dedication of the water sector personnel in Zimbabwe. We hope that this report will be of use to them.

LIST OF ABBREVIATIONS

CAWIDS	Computer Aided Water Information & Design System
DA	District Administrator
DANIDA	Danish Development Co-operation
DDC	District Development Committee
DDF	District Development Fund
DHI	District Health Inspector
EDP	Electronic Data Processing
EEC	European Economic Community
FO/W	Field Officer/Water (DDF)
GOZ	Government of Zimbabwe
GTZ	German Technical Co-operation
IC	Interconsult A/S
LGPO	Local Government Promotion Officer
LWF	Lutheran World Federation
MCCDWA	Ministry of Community & Co-operative Development & Women's Affairs
MDC	Ministry of Development Co-operation (Norway)
MEWRD	Ministry of Energy & Water Resources & Development
MFEPD	Ministry of Finance, Economic Planning and Development
MLARR	Ministry of Lands, Agriculture and Rural Resettlement
MLGRUD	Ministry of Local Government, Rural and Urban Development
MOH	Ministry of Health
NAC	National Action Committee for Water & Sanitation
NCU	National Co-ordination Unit
NGO	Non-government organisation
NMWP	National Master Plan for Rural Water Supply and Sanitation
NOK	Norwegian Kroner
NORAD	Norwegian Development Co-operation
PA	Provincial Administrator
PDC	Provincial Development Committee
PSC	Public Service Commission
PWO	Provincial Water Officer
PWS	Primary Water Supplies
RWS	Rural Water Supplies
SADCC	Southern Africa Development Co-ordination Conference
SC	Steering Committee
SIDA	Swedish International Development Agency
TOR	Terms of Reference
UNDP	United Nations Development Programme
UNICEF	United Nations Childrens' Fund
UZ	University of Zimbabwe
VCW	Village Community Worker
VIDCO	Village Development Committee
VIP Latrine	Ventilated Improved Pit Latrine
WADCO	Ward Devlopment Committee
WHO	World Health Organisation
WSSC	Water and Sanitation Sub-committee
Z$	Zimbabwe Dollars

CHAPTER 1 INTRODUCTION

1.1 Background

Norway has, through its support from 1981 onwards, become the major donor to the rural water supply sector in Zimbabwe. As an integral part of the Zimbabwe Country Study, the Ministry of Development Cooperation (MDC) decided to undertake an evaluation of support to the sector.

The evaluation study was commissioned to the partnership of HIFAB International (Norway) and Zimconsult (Zimbabwe). Following preparatory activities, the evaluation team worked in Zimbabwe from early November to mid December 1988. The major part of the report writing was undertaken in Norway during January 1989.

1.2 Norway's Support to Zimbabwe's Water Sector

Norway's support was first granted for rehabilitation of rural water supplies in 1981. The programme was based on the principle of Norwegian "solidarity" with the newly independent Zimbabwe. The initial support which was channelled through District Development Fund (DDF) (ZIB 001) was gradually changed to cover continued primary water supply (PWS) development in the communal lands. The programme was not terminated until mid 1987.

The first programme revealed weaknesses within the sector in terms of policy, strategy, planning information and institutional structures. Norway therefore found it justfied to finance the preparation of a National Master Plan for Rural Water Supply and Sanitation (ZIB 003). This Master Plan (NMWP) was also expected to serve as a tool for planning continued Norwegian support to the sector.

Following the severe drought in 1983 - 84, Norway agreed to finance a drought relief programme in the three Mashonaland provinces in 1985 (ZIB 006). Due to the urgency of the situation, the emerging recommendations of the Master Plan were not followed. While still awaiting preparation of a project design based on this Plan, the programme was changed and extended to cover selected districts of the Manicaland Province from late 1985 up to 1987.

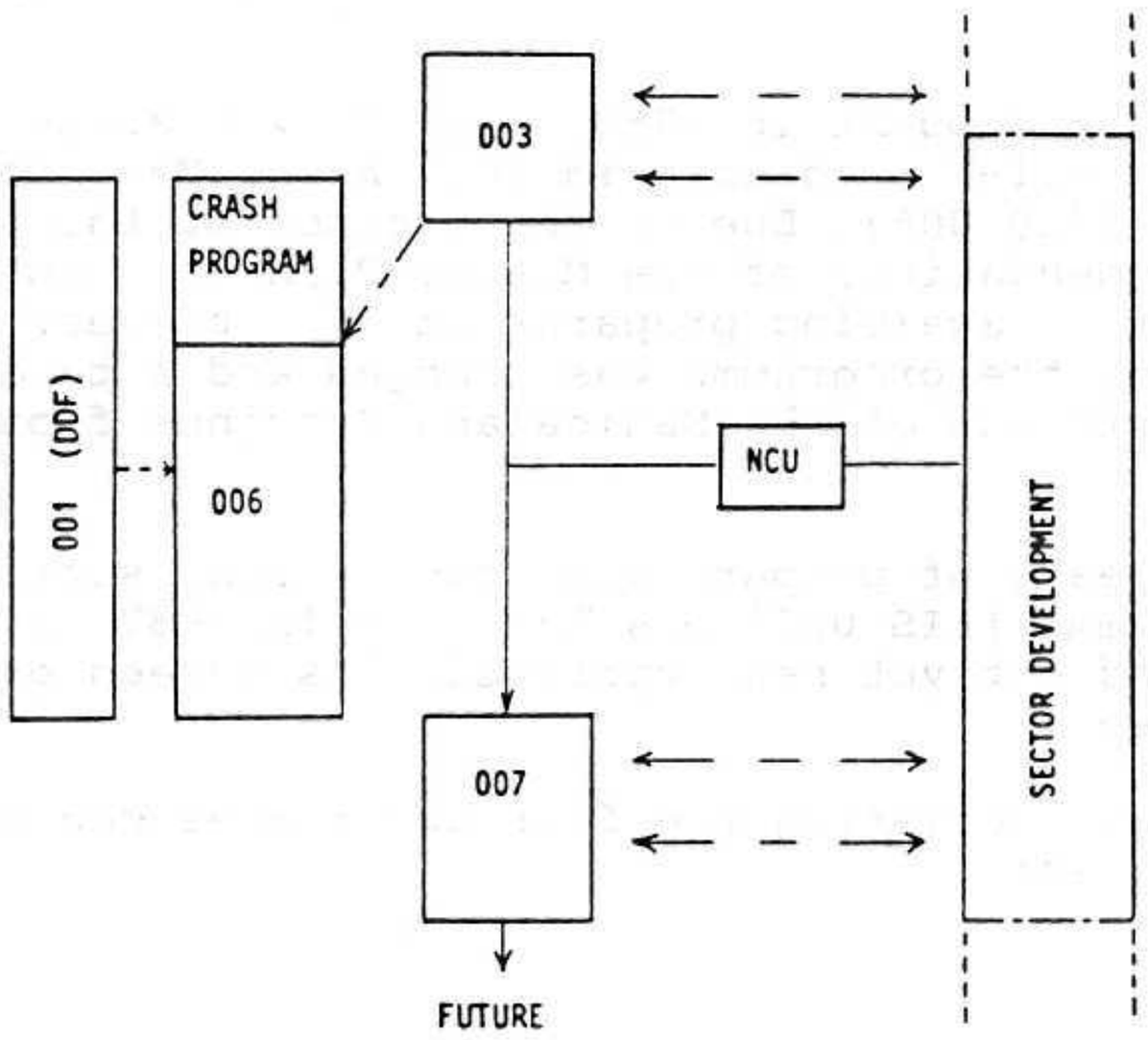
After almost two years of preparation, the current sector development programme (ZIB 007) was launched in 1987. Although the Master Plan had not yet been approved, its agreed principles were to be followed.

The formal agreements covering the four programmes can be summarised as follows:

Programme	Agreement Date/(Period)	Total Allocation
ZIB 001 - Rehabilitation	March 1981 (1981-1987)	NOK 160 m
ZIB 003 - NMWP	July 1983 (1983-1986)	NOK 20 m
ZIB 006 - Mashona/Manicaland	May 1985 (1984-1987)	NOK 49 m
ZIB 007 - Sector Support	December 1987 (1987-1990)	NOK 180 m
Total, including commitments		NOK 409 m

Further information on the respective programmes subject to evaluation is given in Appendix 1.

The linkages between the various initiatives which NORAD has funded in the sector is shown in diagrammatic form below.



It should be observed that the Norwegian support, which started as short term assistance to rehabilitation of PWS installations affected by the war, gradually changed into general support for the sector. Obviously this change has taken place with reference to the overall objective of Norwegian development of social and economic development for the deprived population groups in Zimbabwe, rather than with reference to the objective of supporting regional development as a means to reduce dependance on South Africa.

1.3 Scope and Focus of Evaluation

The original Terms of Reference (TOR) called for a conventional ex-post evaluation of the ZIB 003 and ZIB 006 programmes. For the present programme (ZIB 007), the study is restricted to a review of the planning model and chosen implementation strategy. The first Norwegian supported programme, ZIB 001, was evaluated in 1984 and is not covered. These TOR were modified as a result of discussions with the MDC based on the Inception Report of October 1988. The focus was shifted from the retrospective to the forward looking aspects. The study has therefore been structured so as to document experiences and utilize these in the formulation of options for future Norwegian support to the water supply and sanitation sector.

One important implication of the forward looking emphasis is the policy and process orientation of the Evaluation Study. The cost aspects of the past and ongoing programmes have been given little attention in the Study.

The TOR and the supplementary note explaining agreed modifications to the TOR have been included as Appendix 2.

1.4 Evaluation Methodology

The emphasis on options for the future made it essential to look into all main sector development issues. Interviews and discussions with decision-makers and other key personnel in Zimbabwe were therefore very important. These interviews were supplemented with discussions with NORAD officers and others with particular knowledge of Zimbabwe's water sector. A list of persons met is included as Appendix 3 and the team's itinerary is shown in Appendix 4.

The field investigations were undertaken as case studies and were designed to throw light on the same important issues. Due to the reduced emphasis on retrospective aspects, it was decided not to carry out representative sample surveys. Instead, general conclusions with regard to water supply and sanitation interventions were drawn partly from existing studies covering this subject. An annotated bibliography giving the most important references is included as Appendix 5.
Much emphasis has been put on analyses and conclusions developed through team discussions, and members of the reference group formed for the study have participated in such discussions.

Where necessary, external resource persons have also been called to meetings.

Some of the Team members have also carried out work on the overall Zimbabwe Country Study. This has assisted in establishing a broad perspective in which to review the water sector support, including discussion of issues such as general development and sector policies of Zimbabwe, the social, economic and political framework existing in Zimbabwe, and Norway's development assistance policy.

1.5 Team Members

The Team has been composed of members based partly in Norway and partly in Zimbabwe, all with extensive relevant experience. The team members are:

- Tore Lium, Sanitary Engineer/Team leader, Hifab International, Oslo, Norway

- Frances Chinemana, Sociologist, freelance consultant, Harare, Zimbabwe

- Bjorn Lunoe, Civil Engineer (organisation and management specialist), Hifab International, Oslo, Norway

- Peter Robinson, Development Economist, PhD, Zimconsult, Harare, Zimbabwe.

- Fritjov Ruden, Hydrogeologist, Scantech, Drammen, Norway.

In addition, Sidsel Saugestad, Social Anthropologist, Tromso, Norway, served as a consultative Team member, and contributed in particular to the Makoni case study.

Two research assistants - Ceasar Vundule and Charles Bvunzawabaya - were recruited by Zimconsult to work with the sociologist during the fieldwork period.

CHAPTER 2 RURAL WATER SUPPLY IN NATIONAL DEVELOPMENT CONTEXT

2.1 National Context

It is necessary to put the evaluation of the rural water supply programme into a national context for two related reasons:

i. The programme has to be judged not only on itsown merits, but in terms of its contribution to national goals and strategies;

ii. The overall social, economic and administrative environment gives rise to constraints and opportunities which have to be taken into account in assessing how the programme has been executed.

These perspectives are particularly important in relation to the forward-looking aspect of the evaluation:

- How could the design and execution of the programme be improved to contribute more rapidly and more comprehensively to national development?

2.2 National Objectives

The First Five Year National Development Plan 1986-1990 contains the most comprehensive statement of Government policy available. Of the six main objectives listed in the Plan (Volume I:10), three relate to rural development and thus have a direct bearing on Norwegian assistance to the rural water sector:

- Raising the standards of living of the entire population, in particular the peasant population;

- Land reform and efficient utilisation of land;

- Maintenance of a correct balance between the environment and development.

The emphasis on the communal areas is also made in respect of water development: "The primary objective of Government in the water resources sector is to develop adequate water supplies for agricultural, industrial and domestic purposes, with special emphasis on communal area requirements" (Volume II:32). In the rural water supply programme itself, several specific points are made (Volume II:34):

- The main objective of the rural water supply programme is to provide the rural masses with adequate, safe and accessible water. In assessing the demand, however, close attention will be paid to the potential for livestock watering and small irrigation schemes in order to stimulate food production and raise incomes of rural people;

- Community participation, particularly participation by women, will be crucial in the planning, implementation and maintenance of rural water supply programmes;

- Government has observed in many cases that rural water schemes become non-operational because of inadequate maintenance. There is, therefore, need to give maintenance and operation the highest consideration in planning and implementing rural water supply schemes.

The Evaluation Study investigates further how these objectives are being followed in practice. In addition, in line with the Plan's emphasis on regional and provincial development, investigation of the need to apply a regional approach in order to take account of characteristics of the different areas of Zimbabwe is addressed.

2.3 Demographic and Environmental Determinants

The main focus of the rural water supply programme is towards the communal areas. This is justifiable as approximately 57% of the population were found to be resident in the communal areas in the 1982 census and it is those areas which are most in need of improved water supplies for household consumption. The NWMP has been criticised, however, for not making provision for the commercial farming areas, where a further 21% of the population were resident in 1982 and where acceptable household water is often not readily available.

The Five Year Plan is not specific about its spatial implications, but the emphasis on rural development provides a basic justification for the rural water supply programme. However, a balance has to be struck between investment in wells and boreholes in remote areas and in water supplies and other services in urban centres, particularly the resource based "Growth Points" located in the communal areas themselves.

In the marginal communal areas where the current level of activity is already considered unsustainable, the provision of water could have the negative consequence of permitting even higher human and animal populations, further accelerating environmental degradation. Particularly in such areas, water projects need to be designed so as to minimise such risks.

Investments are, however, not to be so concentrated in the more favourable areas as to negate the Government's strong orientation to equity; a balance is necessary, taking account of long-term sustainability. This raises the question of whether water supply (and sanitation) is regarded as a social service or as an input to the economic development process.

Other more specific environmental aspects to be considered include the effect of borehole drilling on future groundwater availability and the micro effects around individual water sources. Naturally a programme concerned only with domestic water

will be less significant in this context than a programme also providing water for agricultural purpose.

2.4 Provision for Rural Water Supplies

The Five Year Plan makes allowance for an investment expenditure from Government funds of $72 million over the five years, this constituting 1,5% of total public sector investment. This is a very small percentage in relation to the articulated objectives, but the reason is that donor funds are expected to provide the bulk of the investment resources, while it is Government's role to provide most of the recurrent costs. As will be seen in section 3.9, Government has so far made sure that funds have been increased to keep pace with the investment programme, but the persistent government budget deficit of some 9% of GDP implies that constraints may also severely affect the recurrent part of the programme.

Total investment in integrated rural water projects is planned to be increased from around $20 million pa to $30 million pa, or $150 million for the five year period. Provided the political commitment continues, the necessary resources might be made available for maintenance and repair to match this investment, but the context of a highly constrained budget, with other programmes having to be cut to accommodate a rapid expansion in rural water, is not favourable.

One possibility is for communities to contribute directly to maintenance to relieve the pressure on the national budget; this is discussed below in the context of decentralisation and community mobilisation. The question of whether a more gradual pace of investment would be justified to ensure sustainability is also addressed.

2.5 Co-ordination

Due to the number of ministries necessarily involved, rural water and sanitation projects provide rather extreme examples of the need for interministerial coordination and management. At the national level, the National Action Committee for Water and Sanitation (NAC) has been formed with six ministries as members:

- Ministry of Local Government, Rural and Urban Development (MLGRUD);
- Ministry of Finance, Economic Planning and Development (MFEPD);
- Ministry of Energy and Water Resources and Development (MEWRD);
- Ministry of Community and Cooperative Development and Women's Affairs (MCCDWA);
- Ministry of Lands, Agriculture and Rural Resettlement - Agritex (MLARR);

- Ministry of Health (MOH).

The NAC has provided a new machinery for interministerial cooperation. Although it takes time to adjust to a new set of responsibilities, the process of improving the water sector cooperation is now well underway in accordance with the NMWP.

2.6 Decentralisation

The NAC has taken the lead in applying decentralisation principles to planning within the sector, with the unit of planning for the integrated projects being a district and the districts being responsible for preparing planning documents according to guidelines provided by NAC and then implementing the projects as far as possible at the local level.

Given Government's commitment to decentralisation, the success of this approach in the water sector is being closely watched as it could well provide a model for other sectors. The NAC approach has been developed to take advantage of the four tier development committee structure at village (VIDCO), ward (WADCO), district and provincial levels, which was set up to facilitate decentralisation. These structures fall under MLGRUD, which is also the ministry designated as co-ordinator of the water and sanitation sector. In their planning role they are to work with the National Planning Agency, which falls under MFEPD.

In the districts themselves, it is MLGRUD which has the most obvious presence, with the District Administrator (DA) being the key decision maker. With the forthcoming administrative amalgamation of the communal areas with the commercial farming areas through the formation of Rural-District Councils, this situation is likely to change during the course of 1989.

2.7 Community Mobilisation and Participation

The arguments for devolving powers not just to the district level but to the communities themselves are compelling. In the political sphere, empowering people to make decisions that intimately affect their everyday lives is part of the process of building democracy in Zimbabwe and laying the groundwork for the next phase of economic development.

Experience and perceptions of this type of approach are not typical in government ministries. Many of them still operate much as they did in the colonial period and are strongly technically oriented. The water sector is again taking the lead in this respect, seeking to strengthen the MCCDWA so that it can perform its community mobilisation role more effectively.

In the longer term this may facilitate implementation of integrated rural development. This could also have a bearing on future developments in the water sector, such as the broadening of the NWMP focus on household water supplies to encompass the provision of productive water.

2.8 Other National Issues Impinging on the Rural Water Sector

There are a number of other national factors which have an important bearing on the rural water sector and thus on the present evaluation.

Problems with the supply of raw materials and other services needed for execution of the projects have been causing temporary or permanent constraints. The shortages of cement and of transport have probably been the most imortant ones for the water and sanitation sector.

The national foreign exchange constraint impinges on the sector in different indirect ways. The choice of technology, for example, is heavily biased towards handpumps already manufactured in Zimbabwe without looking at how a few critical important components could substantially save on the number of call-outs of the foreign exchange consuming mobile maintenance.

National manpower policies also have an important bearing on the sector. Problems of recruitment and retention of staff in Government are having an adverse effect not only in the water sector but across a number of different ministries. Perhaps again the role of the water sector might be to stimulate Government into introducing more comprehensive manpower planning which would have a positive effect on future national devlopment.

2.9 Donor Influence

As already stated, the bulk of investment funds in the rural water sector are being committed by donors. While NORAD is clearly the lead agency involved, one of the roles of the NAC is to attempt to coordinate the many other large and small donors involved. While the Government seems content to allow such a large donor input to the sector, there is a vigorous debate within the country about the influence of donors. The concerns expressed relate mainly to whether the donors will accept the coordinating role of the NAC, which some see as too Norwegian oriented, or whether they will persist in doing things their own way.

Donor influence is generally associated with negative aspects such as tied aid and other conditionalities. The water sector has already been affected through agreements where commodity imports are restricted to suppliers in the donor country (e.g. drilling rigs, vehicles, etc.). The best assurance against undue donor influence is to maintain realistic and updated sector policies. As will be seen in this report, there are several issues which require attention by Zimbabwe in order to retain the present credibility.

CHAPTER 3 ASSESSMENT OF NORWAY'S SUPPORT TO THE RURAL WATER SECTOR

3.1 Format of Presentation

Rather than reviewing each programme separately, the assessment has been made with reference to important themes characterising features and qualities of the programmes.

These themes include:

- Objectives of Sector Programmes
- Programme Planning
- Programme Organisation and Execution
- Integration of Water, Sanitation and Health Education
- Applied Water Supply and Sanitation Technology
- Community Participation
- Maintenance and Repair

The headings under each theme cover:

a) The stated policy or strategy as recommended in the NMWP;

b) Intentions of the respective programmes (ZIB 006 - the Crash Programme, ZIB 006 - the Manicaland Programme, ZIB 007 - the Integrated Sector Support Programme);

c) Assessment of the supported programmes, with reference to the theme;

d) The overall conclusions on the theme.

Particularly important issues for overall sector development as well as for related rural development in general, have been further discussed in Chapter 5 below.

Aspects which could not reasonably be referred to a specific theme have been covered in a separate section towards the end of the chapter.

The chapter is concluded with the Team's overall view on the achievments of the ZIB 003 and ZIB 006 programmes, and with conclusions with regard to the observed status of planning and strategy for the ZIB 007 programme.

3.2 Evaluation Study Work

The scope of the Evaluation Study is very wide, ranging from the policy oriented NMWP programme to implementation of district based programmes. The Team has covered this through:

- Interviews;
- Document/report reviews;
- Field investigations;
- Interdisciplinary discussions within the team.

The field work was carried out in:

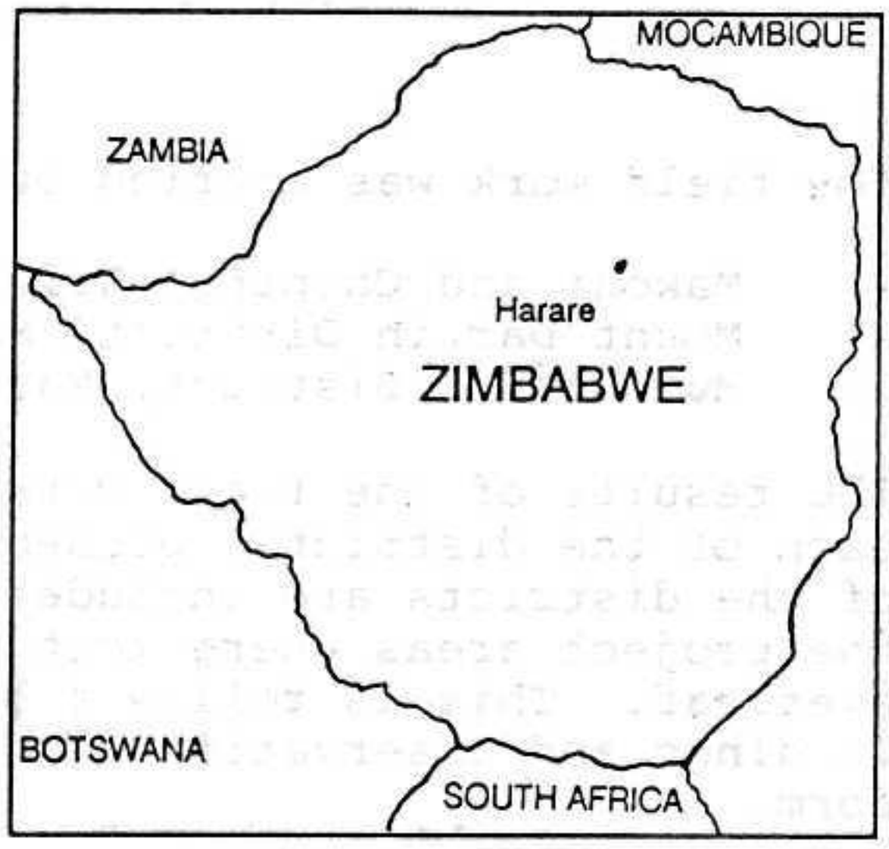
- Makoni and Chipinge Districts, Manicaland Province;
- Mount Darwin District, Mashonaland Central;
- Murewa/UMP District, Mashonaland East.

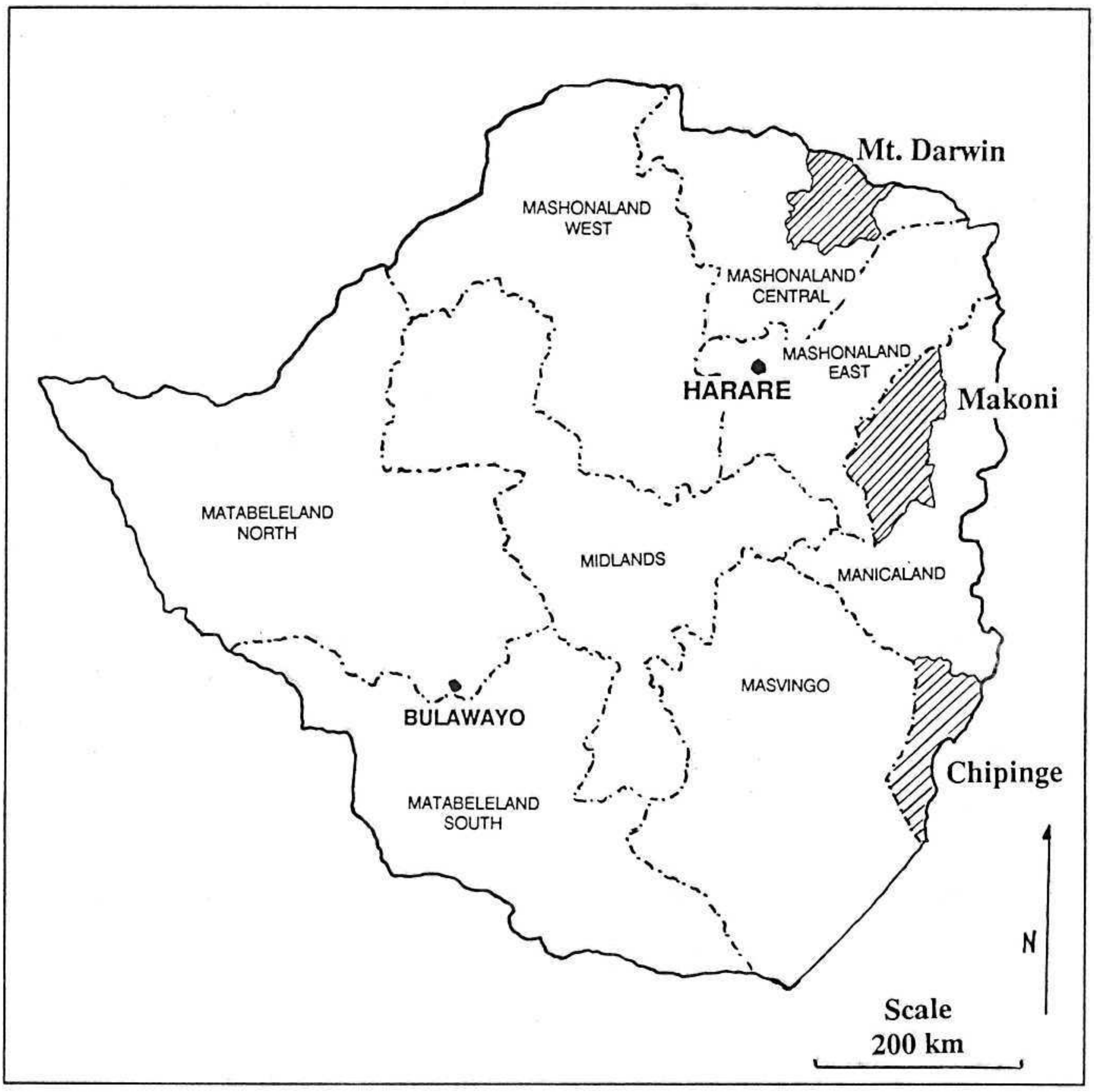
The results of the field work are reported in case studies for each of the districts, presented in Appendices 6 through 9. Maps of the districts are included in each case study, and a map of the project areas where most fieldwork was carried out is given overleaf. This is followed by Box 3.1, which presents the main findings and observations from the case studies in summarised form.

Republic of Zimbabwe

PROJECT AREAS
ZIB 006 & ZIB 007

MAKONI, CHIPINGE & MT. DARWIN DISTRICTS





BOX 3.1 : CHARACTERISTICS OF NORAD-SUPPORTED RWS PROJECTS - FINDINGS FROM 4 DISTRICTS

	MUREWA ZIB 006 - PHASE 1	MAKONI ZIB 006 - PHASE 2	CHIPINGE ZIB 006 - PHASE 2
1. OVERVIEW			
Programme dates:	1985	09/85 - 06/87	09/85 - 06/87
Objectives:	Drought relief programme	Improve health and general living conditions	Improve health and general living condit:
Components:	PWS	PWS, toilets, health educ	PWS, toilets, health (
Organisation:	Through MEWRD, using contractors & consultants	Through MEWRD, using LWF and consultants	Through MEWRD, using consultants
Targets achieved in 1st year:	B/holes 100%	B/holes 108%, wells 99%, latrines 20%	B/holes 86%, latrines
2. ASSESSMENT			
Implementation process:	Determined by physical targets of drilling programme	Unsystematic movement of drilling teams within the district;assisted by consultants' access to resources; limited transfer of skills to Ministry staff	Hampered by geographi conditions; assisted consultants' access t resources; limited tr of skills to Ministry
Technical aspects:	B/hole drilling only, high success rates	B/holes & wells, wide coverage; limited usage in presence of family wells	B/holes, high success too few installations satisfy demand
Community participation:	Limited: for maintenance only	Limited: mostly leaders; labour, pre-siting and maintenance	Limited: mostly leaders labour, pre-siting and maintenance
Integration:	Not part of programme strategy	Precluded by consultants' role; health education unsystematic; sanitation & PWS seen as separate	Precluded by consultant role; health education unsystematic; problems with latrines reduced linkage with PWS
Problems and constraints:	Conflict between the contractors and the communities	Transport, input supplies; low usage of PWS	Transport, input suppli hydrogeological conditi above-average costs

3.3 Objectives of Sector Programmes

a) Recommendations of the NMWP

The NMWP is aimed at proposing "a cost efficient plan of investment in rural water supply and sanitation facilities, with the goal of providing the entire communal and resettlement area population with access to safe and adequate facilities by the year 2005."

The improved facilities are needed for:

i) Reducing the burden and time devoted to carrying water by rural women and children, and

ii) Limiting water and excreta related diseases.

b) Programme Intentions

The objective of the NMWP programme (ZIB 003) was stated in the bilateral agreement:

> "to provide the Government of Zimbabwe with firm recommendations for the immediate and long term development of water supply and sanitation for villages, rural service centres and urban growth points".

The intentions of the subsequent Norwegian supported programmes are reflected in their stated objectives:

ZIB 006 - Crash Programme: Within the overall drought relief objective to:

- construct 400 boreholes with handpumps
- encourage community participation.

ZIB 006 - Manicaland Integrated Programme: Within the general objectives recommended by the NMWP to:

- gain experience with interministerial coordination;
- achieve defined operational targets for water supply, sanitation and community training (specified when programme was extended after one year).

ZIB 007 - Sector Programme: Within the general objectives recommended by the NMWP to:

- improve economic conditions of the beneficiaries;
- achieve objectives to be specified for each individual project;

The ZIB 007 Programme is composed of a series of "projects", each with specified objectives. For district implementation programmes

the physical targets are still predominant. In this context it should also be noted that both the bilateral agreement and NORAD's project documents make specific references to water for productive purposes. Not only promotion of general economic development is mentioned as the justification; without such support to income generating activities the domestic water supply and sanitation interventions may not be sustainable.

c) Assesment

Notably, the NMWP covers water supply mainly for <u>domestic</u> purposes and only within the communal and resettlement areas. These limitations have been debated since the issue of the NMWP Draft Reports, although they are in accordance with the consultants' terms of reference. NORAD's sector support has always been subject to the same limitations and the presentation of the objectives contained in the NMWP presented no reason for a major change in the scope of the Norwegian support.

The physical targets of ZIB 006 - Crash Programme were met at a lower cost than originally estimated. Although the operations were successful as a drought relief programme, the field observations show that the expected results of the community mobilisation aspects have not been achieved, as is discussed in section 3.8 below.

With the exception of latrine construction, other physical targets of the ZIB 006 - Manicaland Programme were achieved, although with a delay of about one year. The organisation of programme implementation was designed without financial provisions for ministries other than the MEWRD. This severely limited the achievement of non-physical objectives, i.e. community participation, health education and interministerial actions.

The shortcomings of the ZIB 006 programmes were addressed when the ZIB 007 Sector Support Programme was designed. To ensure possibility of comprehensive assistance, three main areas of support were identified, namely:

- development of key sector institutions;
- promotion of sector policies in accordance with the NMWP;
- implementation of integrated projects on district basis.

It is a demanding task both to develop such a wide ranging programme (GOZ) and to appraise the proposals (NORAD).

The Norwegian support is the main source of foreign funds for general institutional support at the national level and there has been a bias towards this kind of assistance. The support is certainly required to build up sufficient management capacity at central level, if the ambitious implementation objectives are to be complied with. On the other hand, it is also a question whether the strategy of, and local capacity for, implementation of integrated, district based programmes have been sufficiently developed to ensure absorptive capacity.

Attempts are being made through district programmes under ZIB 007 to address the objective of "economic development" through inclusion of village irrigation projects. The need for water development of this nature was clearly identified as a community priority during the field work. Moreover, development of water for productive purposes - in the form of minor surface water based schemes and specially drilled boreholes - is also required if the health objective is to be more fully met. Both generally improved economic status as well as improved nutrition are essential prerequisites for better public health.

Despite the relatively large number of improved water supplies installed in any given district under the ZIB 007 programme, no districts have as yet met saturation point, where the proximity of improved source excludes the use of unimproved sources. In areas like Ndowoyo, for example, settlement patterns mean that for many households boreholes and unimproved sources are still equi-distant. In such a situation, particularly where health education fails to stimulate increased usage of improved water, distances travelled to collect water are not reduced, and as the impact on improving health is limited, so too are the potential benefits to women of spending less time in ill-health themselves, or in caring for sick family members. The objective of reducing women's labour time in respect of water collection has thus only been partially fulfilled, and may only be achieved in the longterm, under phase 2 of the NCU's strategy.

The programme's impact on communities' health status may similarly be determined only in the long term. It is the assumption of the MOH, which is validated on both theoretical and empirical grounds from water and sanitation programmes internationally, that such interventions are necessary but not by themselves sufficient for improved health. Evaluation of any direct health impact has to be preceeded by monitoring of the functioning and utilisation of the facilities themselves, which is being undertaken by the MOH through a series of ad hoc surveys and through the on-going monitoring work of the public health inspectors. In the majority of districts, the basic issue is still the <u>installation</u> of improved water points for survival - optimum utilisation and any linked improvement in health can only be achieved, and measured, where adequate numbers of water points are in such proximity to households as to substantially increase the amounts of improved water used.

The NAC has adopted the integrated district projects as the main strategy for achieving the objectives and targets of the NMWP. NORAD has agreed to finance six, or about half, of the current district programmes. NCU expects that close to 20 districts will be implementing integrated programmes in the course of the next financial year.

The effectiveness of this strategy will depend on how it is adapted to actual conditions. For example, the MOH expressed valid reservations with regard to linkages between implementing ministries, the time frame for activities and so on.

d) Conclusions

Important steps have been taken towards operationalizing the general sector objectives stated in the NMWP. The role of water as an input to economic development needs to be better defined and taken account of in sector plans for communal and resettlement areas.

Within the widely accepted overall objectives there is still a need to consider further the procedures for developing detailed operational objectives with associated targets and indicators. This is partly a national task but also a task to be addressed by the respective planners of district programmes as a means of creating a firm basis for monitoring and evaluation.

Through intensive installation of water supply and sanitation facilities in selected programme districts, the basis for achieving objectives is about to be established in these areas. Likewise the support to central ministries for development of general sector management contributes towards better capacity for integrated implementation. Tangible achievement of the stated objectives can, however, only be expected in the long term, and will be largely dependant on economic development and better nutrition. Water for productive purposes would address both these two constraints, and should therefore be given priority.

Neither the present programme reporting nor the national monitoring system give sufficient information to measure the achievement of objectives. There is an urgent need to initiate a monitoring and evaluation system (MES) - initially it could be relatively simple -which would document programme achievements and experiences in qualitative as well as quantitative terms. As the quality of planning is being improved, the basis for MES will emerge and be well understood at district level where the responsibility for data collection should be placed.

3.4 Programme Planning

a) Recommendations of the NMWP

The NMWP gives overall guidelines for the development of water supply and sanitation programmes. The NMWP document has also identified the general steps required to convert the plan into a long term action programme. With regard to water supply the emphasis is placed on development of PWS -

"so that a greater number of rural people have access to potable water as soon as possible."

Important steps in this process were identified as:

- conversion of the NMWP into an acceptable workplan for future sector development;

- preparation of detailed integrated water and sanitation plans at local, district, provincial and national levels;

- establishment ofa Master Plan Office within the MEWRD to support planning and implementation activities (utilising the computerized data base).

b) Programme Intentions

The ZIB 006 - Crash Programme was prepared in response to a dramatic drought situation before the NMWP planning framework were drafted. The location and prioritisation of borehole sites were done by the local authorities in the target districts of Mashonaland within the time limitations.

Planning of the ZIB 006 - Manicaland Programme (supposed to be the first implementation of the NMWP integrated approach) was initially based on inventories collected for the NMWP. In order to apply the integrated approach, the programme was required to develop operational procedures for, amongst others:

- consultation with communities;
- coordination of the different implementors;
- liason with the district authorities.

The ZIB 007 - Sector Support Programme has provisions for both institutional support and implementation activities. These are expected to be related; institutional development will make it possible to implement the integrated district programmes. The detailed planning of the programme was, however, deferred till the time of preparing the individual projects. The project proposals are required to specify:

- project objectives (compared to programme objectives);
- resources requirements (local/external);
- implementation responsibilities and linkages;
- future operation and maintenance requirements;
- project justification (priorities, economic/social/financial aspects).

c) Assessment

The NMWP proposes a gradual stepping up of PWS implementation activities. Although the need for efficiency in terms of a rational geographical concentration is referred to, it is not recommended to apply a district by district "blanketing" strategy. The proposals for sanitation development are based on a rapid capacity increase to reach and sustain a high level from 1990 onwards. It is recommended to build up the implementing capacity to required levels throughout the country and not on a district-to-district (or province-) basis.

For the ZIB 006 Crash Programme, the urgency caused by the drought prevented proper planning. Some boreholes were appropriately located at schools, whilst others were sited in places where few people would use them, in particular during

times when alternative (although unimproved) sources were available. The employed drilling contractor made rapid progress and gave the planners short time for the siting activity. The consultants, Interconsult, had no choice but to keep a corresponding pace. The consequences of implementing under these constraints will be discussed in subsequent sections.

With the more comprehensive objectives of the ZIB 006 - Manicaland Programme, the importance of thorough planning was obvious. MEWRD, the client ministry, had allocated drill rigs and expected to start construction immediately the funds were available. The fact that inventories of existing water supply facilities (collected for the NMWP) proved to be very inaccurate and that the operational procedures of the Crash Programme were not applicable, forced the programme management to revise the unrealistic time schedule. The entire project area had to be reviewed.

With the pressure exercised to get started, there were still several "false starts" in implementation, and compromises had to be made, all to the detriment of the very objective of the programme. Improved procedures were gradually developed and established by Interconsult. The programme suffered, however, from the inadequate initial planning throughout the programme period. It should be noted that Interconsult was under obligation to ensure that the economic aspects prevailed in the trade off between progress of community participation and technical works (Terms of Reference for Consulting Services, p. 9).

The unfortunate consequences of inadequate planning, combined with a target oriented approach, were clearly demonstrated during the ZIB 006 programme. These weaknesses were well known and the intention was to overcome them through the new and more flexible method of project formulation adopted for the ZIB 007 programme.

Comprehensive planning requirements have been introduced by the NCU through the issuing of "draft guidelines". These describe planning procedures, typical plan contents and various planning parameters. The guidelines constitute an important step towards uniform decentralised planning. Many district plans have as a result reached a high standard in terms of comprehensive and relevant information.

A notable addition to previous planning procedures for the water sector is the involvement of Agritex for the land use planning component. Although the effects of these plans on the location of water points and latrines are not clear, and will certainly vary from district to district, an important link with land utilisation has now been established.

Investigations at district level revealed some problems in the application of the guidelines, which included the following:

- Planning was carried out without access to reliable inventories;
- Physical targets were set too early in the planning process and not as a final result of analyses;
- Typical cost figures (as per the guidelines) were not always adjusted to reflect local cost levels;
- Estimates of personnel and transport requirements were often too low.

Although the NCU has put much effort into the introduction of the guidelines, the district based personnel are still lacking the experience (and in some cases also the skills) required to carry out the planning.

In Mount Darwin District, the original intention was to carry out a pilot project in order to gain experience with integrated projects under MLGRUD's coordinated management. The pilot concept is, however, not mentioned in the implementation plan of May 1988. Review of the first year's Annual Report, as well as field investigations, confirm that this plan was too optimistic and that severe organisational problems were experienced. It would be most useful if these problems could be documented together with a review of how they were resolved (or continued to pose problems). The present study could only address these problems superficially, and a far more thorough review than permitted within the scope of this evaluation is required.

At the national level, a key element of the information management system recommended in the NMWP document, was the establishment of a central data base to be managed by the Master Plan Office of MEWRD. NORAD has supported Electronic Data Processing (EDP) projects both under ZIB 006 and ZIB 007.The output of these projects, and thereby the intended support to the planning process, has not been as expected. Reference is made to section 3.10 where a review of the EDP project is discussed.

d) Conclusions

The system and format of sector planning has been substantially improved, in particular through the integration of all sector ministries at both national, provincial and district levels. The NORAD supported NCU has been instrumental in this process.

The quality of the planning, however, suffers from lack of adequate baseline information - for example, district inventories and retrieval from the central data bases. Priority allocation, site/area selection and other important decisions may therefore have to be taken on an uninformed basis without access to essential background data. Better procedures for monitoring and evaluation based on sector/programme objectives and specific plans will help to address this shortcoming.

Experiences of past programmes have highlighted the shortcomings of projects which have not been properly planned. A task for the central programme management would be to follow up on the adherance to objectives and other intentions. It will be just as

important to identify the appropriate pace of project implementation as it will be to build up the decentralised organisations' capacity to reach targets.

New district programmes should have a defined planning stage, in order to arrive at a realistic local development plan as recommended in the NMWP. The level of detail and comprehensiveness of this planning exercise would depend on the actual district's characteristics.

3.5 Programme Organisation and Execution

a) Recommendations of the NMWP

The NMWP recommends that MLGRUD shall have the overall responsibility for the rural water supply and sanitation sector. MLGRUD shall serve as the coordinating ministry, whereas other ministries/agencies shall execute specific tasks according to their respective portfolios.

Other recommendations of particular relevance to programme organisation and execution include:

- establishment of the National Coordination Unit (NCU) under the MLGRUD as the secretariat for the National Action Committee (NAC);

- preparation of sector development plans at district, provincial and national levels, towhich the respective ministries shall be committed;

b) Programme Intentions

The ZIB 006 - Crash Programme had the MEWRD as the client ministry with

- consultants (Interconsult) contracted to plan and supervise the implementation, and

- a contractor hired to construct the boreholes complete with handpumps and headworks.

Government extension workers were expected to be involved by the consultants in the community mobilisation process.
MEWRD continued the ZIB 006 - Manicaland Programme with basically the same organisational structure:

- consultants organised community mobilisation and supervised implementation;

- MEWRD carried out borehole construction;

- an NGO (Lutheran World Federation - LWF) was contracted for well-digging.

However, in response to the broader objectives, more emphasis was put on involving Government officers, both extension workers and district based supervisory staff.

In the ZIB 007 Sector Support Programme high priority is assigned to institutional development with reference to the task distribution as set out in the NMWP. The participating ministries include:

- MLGRUD, with NAC, NCU and DDF;
- MEWRD;
- MOH;
- MCCDWA;

MLARR, through Agritex, is linked to the district programmes in respect of land use planning.

c) Assessment

The NMWP project (ZIB 003), commissioned by the MEWRD, had a Coordinator seconded by NORAD to supervise the consultants on behalf of the Ministry. An interministerial Steering Committee (SC) was formed to provide policy guidance to the MEWRD and thereby to the consultants. It is reported that the other sector ministries took little interest in the SC work until the importance and implications of the NMWP started to emerge towards the end of the Study.

Some of the Plan's recommendations which implied a rescheduling of sector responsibilities no doubt resulted in a lack of concensus in the NAC, and delayed submission of the Plan to Cabinet for approval. Notably, the NMWP has, as a compromise, recommended that both the MEWRD and DDF shall be responsible for borehole drilling (i.e. technical planning/design, construction and supervision). This issue was extensively discussed in the ZIB 001 Evaluation Study (1984) and is an example of unintended donor influence, resulting from NORAD's investment in drilling equipment for DDF without proper appraisal of the implications.

The ZIB 006 - Crash Programme was successful in respect of its primary objective; the 400 boreholes were completed with a minor delay (1.5 months) at a low total completion cost, well within the estimate.

The costs of construction and consulting services were distributed with approximately 50% each on the total. Approximately 35% of the costs of consulting services can be referred to the community mobilisation activities. In retrospect, the direct impact of these efforts was rather limited.

In response to the broader objectives of the ZIB 006 - Manicaland Programme, more emphasis was put on involving Government officers. Consulting services amounted to approximately 35% of

the programme costs. For all ZIB 006 activities, the funds were held by the MEWRD and not allocated to other ministries. Consequently, they gave little priority to the tasks assigned to them. Surprisingly, the possibility of interministerial contracting was not utilised. By utilising "Z-forms", one Government agency may procure services or goods from another agency, in accordance with well developed procedures. This could have helped to create accepted responsibility among the ministries.

MEWRD and Interconsult started to organise monthly site and coordination meetings from the beginning of the Manicaland Programme. Although well attended at times, the meetings had only the implementors (MEWRD, LWF, Interconsult) as regular participants. There was, however, a considerable involvement of Government extension staff in the field, mainly for community mobilisation and training tasks. These were trained in project execution according to the procedures developed by Interconsult. A corresponding transfer of management and supervision skills to the district based staff took place to a very limited extent.

The organisation of programme implementation as adopted for the ZIB 007 Sector Support Programme offers much better opportunities to assist in the institutional development for the sector as a whole. The role of the NCU (part of the MLGRUD) illustrates the potential problem of the NMWP recommendation on sector organisation. The adopted structure gives the Coordinator very little power to enforce sector policies and strategies vis-a-vis other ministries. The same problem was observed at the district level, where the DA is the main decision-maker and the representative of the MLGRUD. He has, however, no formal authority over the MOH and MCCDWA district staff. They have direct reporting links through their provincial heads to their respective ministerial headquarters.

Technical assistance in the form of both consultants and NORAD recruited secondees has become a major feature of the ZIB 007 Programme. Fifteen positions (of which seven are to be recruited locally) have been approved for posting of individuals. Consulting services are financed for all participating agencies. In contrast to the position of the earlier Programme Coordinators, the role of technical assistance personnel is now well defined in relation to regular duties of the ministries. However, it is difficult to find out what the prospects are for replacing technical assistance personnel with permanent national staff in the future.

Shortages of transport capacity, spares and materials (in particular cement) have affected the progress of all the programmes. Interconsult pointed out the problems (with special reference to cement) repeatedly during the ZIB 006 Manicaland Programme, and recommended various actions to resolve them. The problems persisted for the most part, although Interconsult's position as a private company was utilised from time to time. The transport problem has to a considerable extent been resolved through procurement of vehicles for NORAD funds. This should be

combined with better transport management. Two supply problems remain as serious obstacles with reference both to communities' confidence in the programme and to the physical progress:

- Cement; caused partly by a national shortage and partly by the Government's inability to procure;
- Handpumps; delaying the completion of drilled boreholes where communities' contributions have been made.

The field investigations gave reasons to doubt that the district programmes (ZIB 007) have really been designed to conform with available implementing capacity. The first year's Annual Report of the Mount Darwin Programme described many of the built-in problems of the "intensive, high output exercise":

- Coordination and community mobilisation procedures to be developed;
- Staff to be recruited (although the plan said no new staff required);
- Some of the targets were unrealistic;
- Lack of transport capacity;
- Uncertainty with regard to details of groundwater availability;
- Agritex land use planning lagging behind;
- Management skills recessary for integrated projects to be developed, including day-to-day management procedures;
- Reporting procedures to be developed;
- Early release of funds from central Government;
- Predictable and unpredictable commodity shortages;
- Lack of planning information;
- Project programme monitoring and detailed work planning procedures.

This list is not intended to be exhaustive, but illustrates the complexity of setting up and running an integrated project. Although well documented experiences can be of assistance to new districts, there will always be a learning and adaptation process initially and thereafter a need for regular modifications.

The NAC has recently taken up the discussion on possible ways of augmenting the sector implementation capacity through a more pragmatic use of both consultants and NGOs. This is commendable, as the civil service cannot (and should not) be built up to have capacity to deal with all the tasks of an intensive programme, in particular within the respective districts.

The use of foreign consultants has been debated in Zimbabwe lately with particular reference to the role of Interconsult. After being well established through the NMWP study, Interconsult was retained for the Crash Programme, the Manicaland Programme and for the first part of continuing district programmes in Manicaland under ZIB 007. It was the general opinion among most of the ministries that far more of this work could have been carried out by the ministries themselves or assigned to local consultants.

Review of local consulting firms indicates that none of them have the integrated expertise required for this type of rural development. The companies are either small and specialised or - in the case of some of the traditional technical consultants - geared towards traditional engineering tasks. No doubt the local firms could, however, have formed groups with adequate capacity and capability. The team is not aware of any such steps having been taken.

Interconsult, being aware of the demand to build local expertise, chose a logical company strategy; the number of expatriate staff was minimized and Zimbabweans were recruited wherever possible. As of November 1988, eight expatriates and 30 Zimbabweans were employed by Interconsult in Harare.

A good opportunity to encourage development of local consulting expertise has been lost. In particular, during the Manicaland stage of the ZIB 006 Programme, there would have been time to invite proposals from local groups for parts of the work. The issue was apparently never discussed between MEWRD and NORAD.

As a technical consultant, Interconsult has performed well within the given Terms of Reference. This is also largely the case for the company's involvement in community mobilisation and training activities, considering the given constraints. The tasks given to Interconsult were, however, not appropriate for a consulting firm when policy guidance and supervision were weak.

d) Conclusions

The NMWP recommendations on organisation and division of sector responsibilities have had a positive impact, although some issues remain to be resolved; the implementation strategy adopted for district programmes under the ZIB 007 ensures better involvement of all relevant agencies and the prospects for achieving integrated implementation are promising. It is, however, important to review experiences and problems carefully with a view to improving procedures for planning, project implementation and all aspects of management.

The capacity, and to some extent capability, of the various ministries have been improved through Norwegian technical assistance. In too many cases, however, the external personnel are just filling vacancies or other line function gaps without having permanently employed local personnel to work with. This fact is threatening the very sustainability of the current sector development and puts a question mark over the replicability of the high output district programmes.

The recent initiative to apply a pragmatic approach to the role of private companies and NGOs will help the sector to achieve a better capacity to spend properly the funds which are likely to be made available. The Government should in this situation concentrate on laying down the premises for sector development and provide the necessary policy guidance and supervision. A

condition for the Team's support to this approach is that the Government is able to take full charge of the planning and prepares adequately for the subsequent maintenance.

The supply problems are causing unacceptable conditions for a sound community participation concept. Potential shortages should be treated both as a planning constraint and a challenge to improve the Goverment procurement procedures. The possibility of establishing routines for revolving stocks and early procurement based on a procurement sub-plan should be looked into.

3.6 Integration of Water, Sanitation and Health Education

a) Recommendations of the NMWP

The integration of water, sanitation and health education as mutually-reinforcing components of rural water supply programmes is a central objective of the strategy proposed within the NMWP. A review of the health profile in Zimbabwe (Vol 4.1) highlighted the significant extent to which water and excreta-related diseases contribute to mortality and morbidity rates, particularly amongst children. Protected water supplies and sanitation facilities are regarded as essential for limiting the transmission of disease, but provision of them must be accompanied by health and hygiene education in order to ensure correct and hygienic usage.

In a complementary review of existing health education activities for rural water supply and sanitation programmes (Vol 4.3 - draft), recommendations were made for improving the capacity of the MOH, co-ordination and the identification of participants' information needs. The type and content of educational media are discussed in relation to 'key support activities' and the type of health education required at each phase of the project cycle.

The practicalities of the integrated approach are spelt out only in the volume on Sanitation Technology (Vol 4.4), however, where it is recommended that the existing approach of the MOH be adopted and strengthened. This approach is limited to the promotion of latrine construction amongst small user-groups who simultaneously construct a shallow well, and its application in areas where deep wells and boreholes are installed for use by large numbers of households is not discussed.

b) Programme Intentions

ZIB 006 - Crash Programme:

- no specific health education or sanitation components.

ZIB 006 - Manicaland Programme:

- latrine construction was incorporated, as a joint responsibility of the consultants and MOH;

- on-going MOH health education programmes were to be incorporated in the community participation exercise at all stages.

ZIB 007 - Integrated District Porgrammes (notably in Mt. Darwin):

- full responsibility for incorporating the health education and sanitation components passed to the MOH.

c) Assessment

Whilst it was hoped that the limited use of community participation made by the Crash Programme would increase 'long-term ... health benefits', the consultants recommended in their final report that future programmes should integrate the three components more fully.

Efforts were made by the consultants, in collaboration with the MOH, in both Makoni and Chipinge District to integrate water supplies with latrine construction and health education. The fact that training of community members in health and hygiene issues was an on-going function of the Village Health Workers (now VCWs), and that the MOH programme of latrine construction was already operational at the start of the programme, created a number of problems, however. The MOH was reluctant to adapt its existing approach and timeframe, although overall co-operation was good.

The high costs of latrine construction in Chipinge and the shortage of cement supplies in both districts had a 'dis-integration' effect; participants were demotivated in respect of the whole programme because of frustrations relating to one of the components. In most areas, water and sanitation activities were carried out at different times by different implementors, and as a result were regarded by the community as essentially separate. The observed continuation in the usage of traditional and unprotected sources would seem to imply that the impact of health education was limited, although individuals perceived that the incidence of water-related disease, particularly diarrhoea, had decreased since the water points were installed.

The problems faced in Makoni and Chipinge in respect of drawing-in an on-going programme into an integrated project were highlighted in Mt Darwin. In the field, extension workers of the participating ministries were met with severe timing and logistical problems, where relatively rapid water point installation failed to coincide with the long-term promotion and implementation of latrine construction. The full implications of this situation for the planning and timing of interventions within the project as a whole were only beginning to be addressed by the inter-ministerial committee.

In comparison to the situation in the Manicaland districts, however, community members appeared to have a more developed understanding of the integrated 'message' and placed a high priority on the use of improved water sources for domestic

purposes. This would imply an effective health education component within the programme.

Evidence from both district and central levels indicated that whilst the MOH subscribes to the concept of co-ordinated programme manangement as a whole, there are continuing reservations about the feasibility of integrating the implementation of household-orientated latrine construction with community-orientated water supply installation. Difficulties may be compounded with the introduction of the experimental shallow wells programme. These should be carefully monitored, and problems and solutions openly discussed between the participating ministries and the NAC.

d) Conclusions

Despite strong recommendations in the NMWP, the Health Education Unit in the MOH has not been developed to a position were it is producing regular and comprehensive educational media for the integrated water and sanitation projects. (Assessments of progress in the Family Health Project (ZIB 015) have also highlighted the weakness of the Unit). The re-structuring of the MCCDWA's extension cadres make it particularly important that effective training and education materials are produced for those who have not previously received a full VHW training. Additional support to the Training and Education Sub-committee of the NAC might speed up this process.

Whilst the efforts of the NCU in securing funding from a number of donor agencies to sponsor individual components of the integrated programme are to be commended, the situation in Manicaland should be noted. Although now part of an inter-ministerial programme, the SIDA funded latrine construction project is still viewed as a separate component simply because it is channelled through one Ministry and is directly associated with the donor agency itself. Whether this kind of donor-identification is perpetuated by the agency itself or the government actors involved, it will limit the extent to which programmes are truly 'integrated'.

Integrating the three components into a single programme framework and timetable may be one of the most difficult tasks districts face in respect of implementation in future stages of the project. The concept of integration should not, however, only be limited to description of management or implementation procedures, for it also describes the intended outcome of such procedures - the community's understanding of the important links between the use of clean water, appropriate sanitation and good hygiene practices. To achieve this outcome, a primary requirement is to enhance the administration's understanding and acceptance of the importance of the integrated 'message' as a major programme objective. This will need to be supported by the production and dissemination of appropriate training materials for both Ministry personnel and community members.

A jointly prepared plan with firm allocation of responsibilities - regularly reviewed and updated - will help to achieve integration of the different ministries' activities. Such a plan may enable them to proceed with their individual workplans without loss of the intended integration. Development of planning skills and realistic programme timetables should also be accompanied by a review of the procedures for the procurement and storing of input supplies. The frequently experienced supply bottlenecks could thus be minimized and not be a cause of negative effects on the community motivation.

3.7 Applied Water Supply and Sanitation Technology

a) Recommendations of the NMWP

The NMWP recommends that hand dug wells should, where appropriate, be the technology of preference for reasons of cost, proximity and ease of maintenance. Depending on actual conditions, the local level plans will, however, contain a technology mix of hand dug wells and drilled boreholes. Piped water supplies are considered to be appropriate only in exceptional cases in rural Zimbabwe.

For sanitation, the Ventilated Improved Pit (VIP) Latrine (Blair Latrine) has been recommended. High priority has been given to the permanency of the latrines, thus resulting in the need for construction materials (particularly cement) which are not readily available for rural households.

b) Programme Intentions

The ZIB 006 - Crash Programme had only one technology option: - drilled boreholes with handpumps.

During the ZIB 006 - Manicaland Programme there was a choice of technologies for PWS:

- hand dug deep wells (LWF);
- drilled boreholes (MEWRD);
- hand dug shallow wells (MOH).

In addition the standard type VIP Blair latrines were constructed under the sanitation programme.

The same technological options are eligible for financing under the ZIB 007 Sector Support Programme. Attention may also be paid to the possibility of minor irrigation and piped water supplies for small centres within the district programmes, where compliance with the programme objectives can be ensured.

c) Assessment

The NMWP recommendations on technology selection, giving emphasis to low-cost options, have in principle been adopted. As a result, Zimbabwe stands a good chance of establishing a sustainable rural water supply and sanitation programme. Contrary to many other African countries, there is a continuous search in Zimbabwe for simpler, cheaper and more reliable technologies.

For the ZIB 006 - Crash Programme there is a risk that limitations on technology options may have resulted in boreholes being constructed in places where hand dug wells costing only 20-40% would have served the purpose. However, having been installed, the boreholes will now serve as a permanent drought relief back-up in the future.

Separate budgets for the two technologies applied in the ZIB 006 Manicaland Programme were prepared initially with a limited knowledge of the existing availability of water resources, thus there is a risk that budget allocations rather than careful hydrogeological investigations determined the technology selection.

The procedures drawn up by the NCU for planning of integrated district programmes give equal opportunity for all PWS technologies. Due to scarce planning information (e.g. detailed water resources inventory) biased choices may, however, result from prematurely set targets for which corresponding funds are then allocated.

Field work findings at district level indicate that the "national average" distribution between boreholes and wells has been adopted for areas where a different ratio would have been more cost effective. One approach to this problem would be to make a strategic choice as to the density of "drought proof" water sources (usually boreholes) to be established. The district planners could then primarily work with the minimum number as the immediate target and allocate additional installations where required by available water resources.

Technically, the ZIB 006 programmes were successfully executed with a hydrogeological siting, drilling supervision and borehole design which gave a high success rates. The target rate of 80% for the Crash Programme was achieved. However, with this kind of target, there is always the risk that the siting team will tend to be very conservative. Four hundred sites were to be selected from a total of 888 proposed and surveyed; the team had no reason to select the "risky" ones even if they were at locations with particularly high priority for improved water supply.

The borehole success rate continued to be high also in Manicaland; 95% and 83% in Makoni and Chipinge respectively (reviewed up to mid 1987).

The 50% success rate of boreholes reported in Mount Darwin District is too low by any standard. A drilling programme should

not be launched with such limited prospects for success. The hydrogeological assessment undertaken as part of the initial "scanning excercise" preceeding implementation had indicated a limited potential. Nevertheless, the reasons for poor performance in Mount Darwin should be evaluated before continuing the drilling programme.

For the hand dug wells (Makoni District during ZIB 006, all districts during ZIB 007), no specific figures have been reported concerning sustained yield and success rate. It is however known (as noted in the Makoni case study and which may be quantified in S. Saugestad's study), that many of the wells dry up during the dry season. The same problem was noted in Mount Darwin District and emphasises what is a general experience of "shallow" well programmes; it is important that a well monitoring programme is included as part of the maintenance procedures in order to establish the yield characteristics of the individual wells.

Zimbabwe's locally manufactured handpumps, which have been used in all the programmes, have a long tradition of use in the country. The field investigations showed that there is a need to ensure consistent manufacturing quality. The Team took note of ongoing research with discussions currently taking place concerning minor modifications - with reference to leather cups, for example - which could make the pumps more reliable and thus reduce the costly mobile maintenance call-outs. In exchange for this improvement there might be a need to import a few critical parts (or raw material for such).

The "family well" concept presently being tested by the MOH appears to be promising. This will offer an option for a privately owned well, initially subsidised by the Government and later taken care of entirely by the family or a small group of families agreeing to do so. In areas like Chiduku Commual Lands in Makoni District, a family well strategy could well have proved to be more appropriate and efficient considering the fact that local wells are already found in great numbers and that the new wells are generally considered a back-up to the existing wells.

The Manicaland Programme has adopted a twin-pit version of the VIP Blair Latrine. Although this has been explained as the choice made by the community, it appears to be a doubtful decission; should latrines elsewhere in Zimbabwe also be of the twin-pit type, or has an unnecessary costly option been selected for Manicaland? The MOH HQs supports the single pit version contrary to the decision taken by the provincial MOH office.

The latrine construction in Ndowoyo, Chipinge District, has been particularly expensive, due partly to remoteness and partly to lack of suitable local construction materials. Costly transport has been incurred to get on with the construction of a few latrines having a remarkably high standard compared to residential houses in this poor area.

The past sanitation programmes in Zimbabwe are recognized as very sucessfull. Nevertheless, it is surprising that the applied

technology, and in particular the corresponding subsidy cost, is not more frequently debated. There is scope for adopting more flexible approaches to the use of the standard designs of the VIP Blair Latrines. The Ndowoyo case mentioned above is probably an extreme example, but serves to illustrate the need to adapt the choice of building materials to local conditions.

d) Conclusions

The NORAD supported programmes have employed technologies which are accepted and which stand a good chance of being maintained at reasonable cost. For the water supply installations, in particular the wells, a good potential exists for involving the communities more extensively in maintenance in the future.

As more experience is gained with the integrated planning, the selection of appropriate technologies will be further ensured. To achieve optimum solutions at any given time it is important that the planning process counteracts the various ministries preferences and biases. The possibility of relieving the Government of a substantial maintenance commitment through support to implementation of simple wells for families and smaller groups should be looked into.

To achieve further improvements technology development efforts must be continued at the national level, and planning skills, including the competence to select appropriate technologies, be further developed among the district staff. In this process, it is important that a flexible approach to the modification of standards and guidelines based on "national average" conditions is adopted.

There is a need to review the latrine design procedures to ensure that full account is taken of the local conditions such as soil conditions, available building materials, ground water level and so forth.

3.8 Community Participation

a) Recommendations of the NMWP

The NMWP (Vol 4.2:123) recommends that, in line with existing rural development policy, "community participation be the implementation strategy of choice in rural water and sanitation programmes". It is envisaged that the focal point for community participation at the village level will be water or sanitation user associations or sub-committees, established as sub-committees of VIDCOs. The specific functions of these sub-committees are not spelt out, although it is suggested that they will have an important role in "community management of water and sanitation projects".

Within the six-phase "model project cycle" which is developed, including pre-project feasibility, planning and design, pre-construction, construction, operation and maintenance and

monitoring and evaluation, it is implied that communities should participate in a variety of ways in each phase. Noting that community participation - in construction - has been sucessfully utilised in well-sinking and latrine construction programmes, it is recommended that community participation in future be utilised for all technologies, and be extended beyond labour inputs to include planning, consultation in siting and maintenance. The creation of a community-based maintenance structure is suggested, as part of the 3-tier system, through the establishment of Water Committees at each installation, each having a trained volunteer pump caretaker.

The resulting need for major re-orientation within policy formulation and programme implementation is recognised. The (then) MCDWA is called upon to brief technical ministries on community participation, publicise the work of rural administrative structures and provide appropriate training for extension cadres, VIDCOs and the sub-committees. The establishment of permanent interministerial provincial water and sanitation training teams is recommended, as well as strengthening of the training and manpower capacity of the MCDWA.

b) Programme Intentions

For the ZIB 006 - Crash Programme:

- community participation only emphasised after installation, in order to establish Water Committees and train pump caretakers for maintenance role

For the ZIB 006 - Manicaland Programme which represented the first attempt to incorporate community participation as part of the programme strategy;

- responsibility for community participation was given to MERWD's consultants, who were required to work with and train MCDWA extension workers;
- activities involving the community were to include pre-siting, provision of labour and inputs for construction, training of Water Committees and caretakers for role in 3-tier maintenance system.

For the ZIB 007 - Integrated District Programme:

- responsibility for community participation was passed to the MCCDWA;
- activities involving the community were the same as those for the Manicaland Programme.

c) Assessment

The very nature of the ZIB 006 - Crash Programme in Mashonaland precluded any substantial community participation in pre-feasibility, planning or pre-siting exercises. Field observations indicated that the functioning of the boreholes was largely unsatisfactory as far as the users were concerned;

communication with the DDF in the event of breakdowns was difficult and pump caretakers and Water Committee members were unclear about their roles and tasks. The installations were regarded as an improvement, bringing water where it was extremely necessary, but were not perceived as belonging to the community.

It became obvious in the course of the Crash Programme itself, that community participation was an essential requirement, and efforts were made in Phase 2 of the programme, in Manicaland, to emphasis community involvement from the pre-siting phase onwards. It received similar emphasis in the design of the ZIB 007 project.

In both the Manicaland districts and Mt Darwin (ZIB 007), however, field observations suggested that in practice the community participation exercise has been limited. Firstly, it appears to have concentrated on the local leadership; the need to meet physical targets and the technical requirements of the drilling programme restricted the time available for full involvement. Secondly, neither the leaders nor community members have played a role in planning - the mode and pace of the programmes are still determined externally to the village, and choices about usage priorities and technologies are not routinuely solicited from water point users. Neither is it clear what long term commitment the communities have in respect of maintaining and eventually replacing the installations.

Water committees and pump caretakers were established in all districts, but in Manicaland, co-ordination in the provision of training, technical knowledge and tools for them was lacking, resulting in confusion about their roles and functions, and inadequate understanding of the 3-tier maintenance system. Inter-ministerial co-ordination in Mt Darwin has enabled the MCCDWA and DDF to work together closely and the committees and pumpcaretakers have a stronger role in a well-developed 3-tier system. Confusion still surrounds the question of ownership, but seems to have been more clearly understood in the Mt Darwin communities, perhaps because of the identification of the programme as a government programme, in the absence of third parties such as NGOs and consultants.

In the Manicaland programme, the Consultants worked closely with the MCCDWA extension staff at village level, but personnel at district level and above had limited involvement. The fact that resources and inputs were readily available to the Consultants enabled them to overcome many of the logistical and timing problems inherent in any community mobilisation process. Whilst the first issue has had an effect on the extent to which MCCDWA has been able to take up their responsibilities effectively during the rapid change-over period in Makoni and Chipinge, the additional timing and logistical problems are likely to be experienced in all districts which enter into the ZIB 007 programme.

Whilst considerable strain is being placed on the district administration as a whole in the execution of the Mt Darwin project, it is particularly great for the MCCDWA. The extension cadres presently undergoing re-training, are now required to service all ministries in respect of community mobilisation for development projects and have a critical role in the integrated water and sanitation programme at nearly every phase. The deployment of Community Participation Officers at district level should be of assistance to, and develop the skills of, MCCDWA staff within the districts, but there is need to clarify their level of authority within the overall structure, and their reporting procedures.

d) Conclusions

The programmes undertaken within the water and sanitation sector currently provide some of the most impressive examples of an approach to development based on community participation. As indicated, the impact of the strategy has been limited by a number of constraints and has not always received the level of acknowledgement or resources required. The problems which have been experienced can themselves serve as useful indicators of areas of the strategy where review or a change of emphasis is required. This would not only improve the community participation component within the sectoral programme itself, but increase the liklihood of its becoming a model which can be effectively utilised by other programmes and sectors.

The capacity of the MCCDWA at all levels to fulfill its role within the programme is questionnable. The recent recruitment of local consultants to form a Community Mobilisation advisory team could assist in institution building, but additional support and resources may be required for manpower development and training; the Consultants can only be really useful if the Ministry's own ranks are filled.

Practical experience in the field over a three year period has enabled the actors involved in the integrated programmes not only to flesh out the somewhat vague recommendations of the NWMP, but also to see the real advantages of the community participation approach. It could still be developed further, however, and the ability of the MCCDWA to promote and extend the concept will be a critical factor.

At the same time, clarification of the concept and how to operationalise it is required, particularly if a greater role in planning and feasibility exercises is to be played by the community. It is important that 'decentralisation' of skills and responsibility for these functions does not just stop at the district level; they must also be passed on to actors and beneficiaries in the community as well.

3.9 Development of Capacity for Maintenance and Repair

a) Recommendations of the NMWP

DDF is assigned the overall responsibility for maintenance of primary water supplies. With the rapidly growing number of water supply installations, a major expansion of DDF's capacity is proposed.

To cater for this expansion the three-tier strategy is proposed as follows:

- Village level: VIDCO sub-committee responsible for preventive maintenance with one of the members being trained as handpump caretaker;

- Ward level: Pumpminder appointed through DDF to undertake routine maintenance and repairs for up to 50 installations, and to supervise the work of the caretakers;

- District level: DDF District Maintenance Units will oversee and provide third-tier back-up to all PWS maintenance.

The responsibility for maintenance and eventual replacement of improved latrines is vested with the individual households. The NMWP recommends that maintenance requirements should be reduced through promotion of permanent latrines with a high standard of construction.

b) Programme Intentions

Although outside the main scope of the Evaluation Study, it should be observed that NORAD has supported DDF since 1981 through the ZIB 001 programme. This support, which covered various aspects of DDF's activities, also contributed to the general development of capacity for execution of the maintenance duties.

The ZIB 006 - Crash Programme addressed the maintenace aspects through mobilisation of local communities and training of caretakers.

In the ZIB 006 - Manicaland Programme maintenance capacity development was supported through:

- minor budget allocations (approximately 4,5%), to be combined with DDF's own resources;

- community mobilisation, including training of first tier caretakers.

The ZIB 007 - Sector Support Programme has adopted assistance to maintenance as a priority area. Support is provided through specific projects covering:

- general support to DDF at the national level;

- integrated district programmes' maintenance component;

- development of the community participation aspect (first tier).

c) Assessment

The NMWP proposal to establish the three tier structure will require:

- considerable training at all levels;

- the development of effective reporting systems;

- systems for the provision of spares;

- greater standardisation of handpumps.

The implementation of this system has started, partly with the support of NORAD through the ZIB 007 programme. Twenty seven out of the 53 districts have so far been covered, among them Makoni, Chipinge and Mount Darwin districts. Plans are in hand to introduce the system in the remaining districts over the next three years.

As an initial contribution to Government efforts to introduce the three tier system, Interconsult provided training for local water committees, including the Caretakers, as part of the ZIB 006 programmes.

The field studies in Murewa/UMP District showed that the district based Maintenance Unit is able to cope reasonably well with the repairs and even some preventive maintenance. The committees had often ceased to exist in the Crash Programme area and local maintenance was very limited. The water points visited were, however, kept generally clean and tidy, thus indicating appreciation and pride on the part of the community.

DDF has started to upgrade the maintenance organisation in the Makoni, Chipinge and Mount Darwin Districts. The DDF offices in the three districts are about to establish a good record keeping and reporting system. Essential spares are kept in stock and the District Maintenance Units are normally able to respond to call-outs within a week or so. During the field visits, however, cases were also found where the water supply installations had been out of operation for several weeks.

In all districts, the pumpminders have two or three wards to cover. Their relationship and cooperation with the local caretakers were found to be unclear and affected the overall maintenance performance negatively. In Ndowoyo Communal Lands (Chipinge District) with vast distances, a harsh climate and only boreholes, there was actually few maintenance tasks the pumpminder could do, except request DDF for a call-out of the mobile maintenance team.

Review of maintenance records showed that borehole pumps in Chipinge broke down some 20 times more frequently than those in Makoni. Even allowing for a certain degree of incorrect reporting, this indicates that the maintenance organisation needs to be designed on the basis of district specific characteristics.

The communities are not yet introduced to the concept that they may have to accept a larger share of the responsibility for maintenance in the future. Although the policy in this respect has not yet been finalised by Government, such options ought to be discussed with the communities while presenting the project possibility to them in the first place.

At the national level it is encouraging to note that:

- allocations for PWS maintenance were increased from 1987/88 to 1988/89, in a shrinking recurrent budget;

- the need to give maintenance highest priority is widely recognized (although not always followed in practice);

- the organisation and structure of the maintenance system is discussed and studied in a professional manner;

- the problem of financing maintenance services for PWS, including various cost recovery options, is addressed by the MLGRUD.

The many problem areas which have been identified as existing and possible future constraints by DDF seem to coincide well with the findings of the present Evaluation Study.

The emphasis on construction of latrines with a high degree of permanency will lessen considerably the maintenance requirements. Responsibility will remain with the household, supported by a larger corps of better trained Health Assistants and Village Community Workers.

With regard to sanitation, a major question is whether the households will be prepared to replace their latrines in the future. This issue is currently being investigated as part of a research project commissioned by MOH (latrines as part of health education message). Depending on the outcome of this study, more emphasis may have to be placed on the educational aspects of sanitation.

f) Conclusions

DDF's maintenance organisation has been considerably improved over the last years. Although capacity is often stretched, and varies from district to district, DDF is in most places able to keep the installations in service more than 90% of the time. Intensive implementation programmes must incorporate a corresponding concentrated effort to set up the required maintenance structure. Although the NCU planning guidelines have

emphasized this point strongly, it appears to be difficult in practice to tailor the implementation rate to maintenance capacity.

It is important to consider the technical aspects of maintenance and repair services in the wider context of sustainability. Sustainability cannot be achieved for community water supply and sanitation unless a whole range of factors are taken care of, involving both technical, social and financial issues. Some of the main problem areas to be addressed include:

- the cost to Government and to the consumers of future maintenance;

- division of responsibility between the three levels of the three-tier maintenance system, in particular the role of the pumpminder;

- appropriate transport for mobile maintenance teams;

- procurement, supply, stocking and distribution of materials and spares;

- communities' future role and ability in respect of assuming the prime responsibility for maintenance.

3.10 Other Aspects of the NORAD Supported Programmes

The CAWIDS Project

The objectives of the CAWIDS (Computer Aided Water Information and Design System) are stated in Interconsult's "Feasibility Study" of October 1986:

- to provide the MEWRD with a tool to efficiently plan, construct, operate, maintain, keep records of and monitor the water supply sector of Zimbabwe;
- to smooth the Ministry's operations and in particular to improve on communications between head office and the provincial offices;

These objectives were later expanded to include what came to be a major objective, namely to introduce Electronic Data Processing (EDP) in the Water Sector as a means to:

- give the people in the rural areas improved service through better planning, design, implementation and maintenance of water supplies.

Furthermore, the CAWIDS project has also been expanded to cover sanitation, and naturally, it became an intention to give all major sector authorities access to the data bases for planning and monotoring purposes. The approval of the project was delayed and did not formally start until October 1987 although some initial work by the consultants, Interconsult, had been in

progress since mid 1986. In fact, computerized data processing was a component of both ZIB 003 (NMWP) and ZIB 006 before it was included also as a project within ZIB 007.

The Evaluation Study has looked into the content and progress of the CAWIDS project with reference to its expected important role as a tool for planning within the sector. A general frustration was noted among some of the potential users due to the lack of output of planning information from this system. Several aspects of the EDP system was reviewed, including

- scope and complexity of project;
- chosen strategy for introduction of EDP applications,
- selection of hardware;
- selection of software;
- progress of system development and implementation;
- future external support needs for updating and maintenance of system.

The scope of the review was restricted by the time available. However, some important conclusions could be drawn:

- The CAWIDS project represents much valuable work but is characterised by optimistic and unrealistic planning. The original scope of the project, as outlined by IC, is very wide and consequently exceedingly complex.

- The CAWIDS, at present, has boiled down to a simple relational data base system that in principle could have been set up and used on an ordinary PC. Separate data base software systems on the Mini and on the PC's have complicated the whole package and will also complicate training of systems operators.

- The system is not yet operational. No GOZ staff has yet been trained in use nor programming of the PACE software on the Mini and the interface towards PC's. The system is presently 100% consultant-dependent. A solution to this problem is presently not in sight.

- The Consultant has not succeeded in assisiting MEWRD in defining their own needs and problems in the CAWIDS context. This has caused delays in software development. Commercially available and inexpensive packages on routines such as borehole records, generation of well design graphics, test pumping & geophysics etc. have not been sufficiently included.

- Graphics output such as borehole location plotting of selected areas is presently not included. Presently, graphic generation of report quality maps, geophysics, well design,

lithology etc is not feasible. The "design" properties of CAWIDS as indicated in the CAWIDS-designation itself is unclear.

- Data communication with the districts has not been implemented, nor are there detailed plans as to what approach to use in this respect. Obviously, the PC concept will have to be used; direct lines to a central computer is not a realistic solution because of communication quality problems. This implies that the decentralised use of computerised methods will rely solely on PC's. Standardising on the same programs in districts as well as in MEWRD and DDP seems to be a natural solution. A modern PC is flexible and powerful enough to tackle the whole range of these problems.

On this basis it can be concluded that there are two extreme alternatives for continued activities within the CAWIDS project:

Alternative A: Continuation along original lines, implying:

- adjustments of project completion dates,
- adjustments of budgets,
- acceptance of continued consultant dependency,

or:

Alternative B: Revision of Project, implying:

- Scrap the Mini computer concept,
- Standardise hardware and software on ALL workstations,
- Standardise on PC (80286/80386)-technology,
- Start with basic PC technology training for ALL personnel, including basic concepts such as operative system, word processing, spread sheet and data base,
- Standardise and simplify data base software,
- Purchase user-friendly, standard and advanced ready-made packages based on GIS, including capabilities such as map generation, graphical output of logs, geophysical interpretation & reporting, test pumping analysis, etc.
- Set up the individual data bases from scratch WITH and not FOR the present users, on their own PC's,
- Render the various data bases relational only when personnel has become sufficiently familiar with their own personal computers.
- Use inexpensive optical disk for storage of large amounts of information, when needed (100-1.000 Mbyte).

Costwise,the two alternatives will not differ radically. Discarding the present CAWIDS-concept and replacing it with Alternative B could be done with money still left from the original budget. However, both alternatives A and B are extremes and would require careful consideration before any of them can be adopted. Presently, this is difficult due to the rather unclear project profile.

The CAWIDS project may be kept within intended time schedules and budgets, but the result will remain uncertain. The structure and concept of the project is not sufficiently defined to enable an evaluation of the present status and the chances of future success.

It is recommended that the CAWIDS project should be scrutinised in detail by a group familiar with or representing all facets of the project. The objective would be to draw up a precise and well defined TOR for the project and to propose the main targets, milestones and budget requirements. This may be the only way to recover the valuable work already laid down in the project, and it should be done soonest.

3.11 Conclusions

Overview

Many positive steps have been taken to achieve the objectives of the water supply and sanitation programmes over the years, in line with the NMWP recommendations. Within the limits of its terms of reference, the Plan itself has continued to provide a useful planning and reference tool. Both phases of the ZIB 006 programme - the Crash Programme and the integrated Manicaland programmes - have demonstrated a high level of success, particularly in terms of physical target achievements. The ZIB 007 strategy is building on the experiences of the past iniatives, and shows many signs of positive development. The fact that the current programme has placed the integrated concept within a framework of decentralisation and has managed to take off so quickly within the limited timeframe, with so much committment from district officers, is commendable.

Overall, then, the Team's assessment of the current sector programme is positive. The problems which have been discussed should be seen as weaknesses and areas which require further attention and review. They may in the longer term undermine the success of the programme and could certainly reduce its effectiveness. Given the many positive aspects of the strategy, it is thus important to try and rectify such weak links.

Co-ordination

At the central level, the NCU and the work of the NAC has clearly helped the sector to improve its performance in many respects. It is important that continuing dialogue and open channels of

communication between participating districts and the NCU, and between the district officers and their ministry head quarters, are maintained.

The Team did not have much opportunity to review the role of the province in the integrated programmes, but there is clearly a need for provincial staff to have a better understanding of the work of the districts, and of the ways in which they can support it. Provincal staff could assist, for example, in providing skills, manpower and information for project reviews, assessments and monitoring procedures.

Planning

Inter-ministerial co-ordination in respect of both planning and implementation has improved over time. In respect of planning, whether it is through further in-post training or through technical assistance, districts still require support to carry out effective planning exercises. Community members should be included in the process from an early stage.

More baseline data, from scanning exercises and water point inventories, would also improve planning. The availability of such information on a district-by-district basis would also increase the capacity of the national level to recognise and respond to the different needs of individual districts.

Experiences show that there is a need to set aside the first year of any new district project primarily for planning. Implementation on a limited scale may be started as pilot activities to develop procedures for management, coordination, work planning, reporting, etc. A more thorough planning, including collection of baseline data, would also provide for a meaningful monitoring and evaluation system. This system should serve both the management needs during implementation and the post-programme evaluation of impacts.

Priority Assessment

Depending on the level and type of existing resources identified in the pre-planning and planning stages, it will be important to determine community priorities for water. It is clear that one of the primary requirements is water for productive purposes, once the demand for domestic needs has been satisfied. Suitable small-scale irrigation or garden watering projects should be included in future programmes.

In this context, there is also need to further involve the expertise of Agritex, and to ensure that implementation is undertaken within a rational land utilisation framework. Waiting for land use plans to be produced for a ward or area may dely programme activities, but it will be preferable to ensure a good coverage of domestic water points where settlements will be, and then identify where additional points for irrigation of cropping and/or grazing land will be required.

Implementation

Achievements in implementation have been high, but in the new sector programme they have been dependent on concensus between district officers in the absence of any real authority for the co-ordinator - the DA. There is need to more clearly define and institutionalise actors' roles and tasks at district level, with corresponding support from the provincial and central levels. Throughout the period of NORAD assistance to the sector, success in implementation activities has also been dependent on the input from expatriates, consultants and contractors. In the short to medium term this may be an unavoidable situation, but the use of external experise should be more carefully planned and budgetted for at district level, and should be phased out over an identified timeframe.

Input Supplies

Supply problems have been a drawback in all the programmes. It is extremely important that supplies are readily available at the time they are required. This is not just to ensure the achievement of physical targets, but also to enhance the integrated nature of the projects, where separate activities are completed in some kind of relationship to each other. Lack of supplies and materials demotivates both community members and government personnel. Improved planning procedures may reduce the problems associated with input supplies, but a review of procurement and related procedures is also required.

Applied Technology

Despite the efforts made to utilise low-cost and appropriate technologies within the water and sanitation programmes, as recommended by the NMWP, more work is required to develop the technologies applied. Further research and testing programmes should be encouraged, particularly the experimental family wells project. Sanitation design, which currently requires cement and other inputs, plus relatively high costs to households, should be reviewed.

Given the good range of both low-cost and high-technology options for water installations, more flexibility should be applied in choosing the most appropriate ones for each district, so that they are not tied to national average figures or ratios. Improved siting procedures will assist in this context, but it will also be important to prepare more comprehensive district inventories and undertake pre-siting exercises for all water points on a more systematic basis.

Maintenance and Repairs

The technologies used in the programmes have proven to be suitable for the promotion of maintenance capacity at the local level. Where boreholes are hydrogeologically appropriate, however, pumpminders may not be a useful second tier in the

3-tier maintenance system. In other areas, they can undertake some repairs, but are covering too many water points over too great a distance to be fully effective. There is thus need to review the applicability of the 3-tier system as a fixed national strategy, and open the way for its application only where relevant.

The maintenance capacity of the DDF has improved considerably but is still constrained by input supply and transport problems. The costs of maintenance are continually increasing, whilst the increase in the number of installations will further strain capacity. There is a real need, thus, to link the level of investment in any given district more closely to the maintenance capacity and to widen the debate about the issue of cost recovery mechanisms.

Community Participation

Despite a generally good response towards involvement in community based maintenance procedures, the community participation process still requires further long-term support for this involvement to be fully realised. The concept of community participation itself requires further clarification and definition, and must be accepted by all participating ministries. Compared to similar programmes in other African countries the commitment to be made by the community is rather limited and partly unclear.

The MCCDWA will require a great deal of support if it is to play an effective role in the integrated programmes, and training is particularly required for the VCWs. Community involvement will be strengthened where all sections of the community have an opportunity to participate in planning and decision-making processes, and where women's role in the process is more fully clarified.

Integration of Water, Sanitation and Health Education

Community involvment will also be enhanced by a more effective integration of the three components of the programme. Integration of the components as an outcome is not clearly identified at present, and specific strategies may need to be developed to cope with the different timeframes and consumer units involved. Reliability in the supply of inputs will assist the integration process, as will the rationalisation of training materials for both extension cadres and community members.

Sustainability of Programme

The tendency for particular components of the programme to be identified with a particular donor or implementor has been noted, and the extent to which it may decrease the integrated aspect of the programme. It is also important, however, that the sector does not allow donors to dictate the pace of the water and sanitation programme, just because money is available. The process is long and slow, especially in context of the current

impetus towards decentralisation. The provision of water points is a critically important intervention for communal area development, but cannot proceed in the absence of identification of the need for long term sustainability and model building.

The strategy as a whole needs careful evaluation, to probe further into the question of how the weaknesses and problem areas highlighted in this report may be addressed, before too many more districts are brought into the programme. A critical issue is the possibility of making sufficient funds - from the government and/or the communities - available in the future. In this context the importance of water also for productive purposes has been pointed out.

CHAPTER 4 DONOR INFLUENCE ON WATER SECTOR DEVELOPMENT

4.1 The Relative Importance of Donor Support

The present total investment level in the rural water supply and sanitation sector amounts to approximately Z$20-25 million (1988/89). The medium term investment plans drawn up by the NAC for achievement of Phase 1 targets in communal and resettlement areas, amount to Z$258 million for the next ten years, or about Z$25,8 million per annum. This programme forecast is understood to exclude the overhead costs for supporting Government structures unless they are incorporated in the investment budget for district programmes.

The following bilateral donors, multi-lateral agencies and NGOs were providing support to the water and sanitation sector in Zimbabwe at the end of 1988:

A. Bilateral Donors

BELGIAN Aid	RWS for 12 sevice centres;
DANIDA	(i) RWS&S planning (ii) RWS&S project through MOH (iii) community based handpump rehabilitation project through DDF. (None of these activities are supported through NAC, but DANIDA has recently shown interest in channelling support through the NAC/NCU);
GTZ	technical assistance to MEWRD;
SIDA	(i) sanitation component of a RWS&S programme (ii) pilot project on mangement, training, etc;
DUTCHAid	various types of support, including recent funding through the NAC for integrated sector programmes;
NORAD	

B. Multi-lateral Donors

EEC	boreholes, wells and toilets;
UNICEF	(i) wells, handpump/headworks rehabilitation (ii) sanitation;
UNDP	management support to MOH;
WHO	sanitation advisor to National Health programme

C. Major NGOs

Christian Care;
Catholic Development Commission;
Lutheran World Federation;
Redd Barna;
Save the Children Fund (UK)
World Vision

Source: NAC Draft Annual Sector Report 1987/88

The total annual support from these donors, agencies and NGOs, excluding support from NORAD, was expected to be approximately Z$16 million in 1988. This compares to the contribution of

Z$8 million from NORAD, which thus provides almost half of the total donor contributions monitored by the NCU.

In addition there is an African Development Bank credit of Z$20 million available to the sector for the period 1985-1988. The funds are available on a loan basis, and as the policy of NCU is to obtain grants for the rural water and sanitation programmes, most of the Development Bank's funds will probably be channelled to water supplies at growth points and rural service centres.

The World Bank has stated willingness to finance facilities for small urban centres. Project preparation is in progress.

4.2 Co-ordination of Donor Inputs

Part of the NAC's function is to attract donor support to the integrated rural water supply and sanitation development programme co-ordinated by NAC/NCU and its sub-committees. In this context, an NAC Donor Sub-committee has been established, to provide a forum for donor/NGO dialogue. The sub-committee does not discuss policy issues, but focuses on making preparations for donor/NGO co-ordination meetings.

In respect of this, it is important to note that the GOZ has taken the initiative in organising two donor conferences on water supply and sanitation, which were held in March and September 1988. It is often the case that recipient countries are hesitant to facilitate communication between donors. Zimbabwe's efforts in this direction are commendable, and will help to resolve some of the problems often seen in donor-recipient relationships.

The NAC/NCU has been in contact with several donors to discuss participation and co-operation in sector development. NGOs have also been encouraged to participate in the NAC sector development activities.

NORAD was up until recently the only donor to commit support to the sector through the NAC integrated programmes (including general sector development support). In 1988, however, Dutch aid provided Z$15,5 million for the completion of integrated programmes in four districts. Over the 4-5 year period of the grant, each district will receive approximately Z$1 million per annum.

There are indications that other donors are now also willing to channel their support to the sector through the integrated programmes; SIDA and DANIDA are examples. Presumably some of these donors will be willing to finance only certain elements of the total integrated programme. The challenge for the NCU will then lie in the development of integrated programmes based on joint donor contributions (similar to the joint contributions of SIDA and NORAD in Manicaland), or of those financed entirely by the GOZ where particular areas do not receive donor funding.

4.3 Replicability of Donor Supported Programmes

Donor support to any sector immediately raises a number of critical issues. Some donors may specify certain sector policy and/or priority requirements, which are incompatible with those of the recipient country. Others may insist on tied-aid in the form of supplying non-standard equipment and installations. Where levels of funding outstrip absorptive capacity, over-investment in certain areas may result in sustainability problems.

The only practical answer to these kinds of potential problems will be a firm and well considered sector development policy and plans based on a realistic pace of implementation. The NAC strategy has to some extent pre-empted the kinds of considerations which donors would be most likely to emphasise; the development of community based institutions; skilled manpower; maintenance capacity and other long-term sustainability requirements.

There are clear signs, however, that the availability of donor funds is about to create the type of pressure on available resources which have been experienced in many other developing countries. A positive contribution on the part of the donors would be close observation of sector development and trimming of the level of support if necessary.

4.4 Position of NORAD as a Donor to the Sector

As noted in section 4.1 above, NORAD currently plays a dominant role amongst the donors supporting the sector, in respect of the level of assistance provided for the activities co-ordinated by the NAC/NCU.

There is little doubt that NORAD's assistance to national level sector development has in the past helped to establish the machinery and information base which has provided the management base for the growing rural water supply and sanitation sector. The seemingly strong influence exerted over several years has now reached a stage, however, where it could be a constraint rather than a support to continued development of the sector.

It is important that the chain from the NMWP through the first integrated programmes (ZIB 006) to the NCU and the wide ranging sector support be broken - at least symbolically. NORAD should require Zimbabwe to demonstrate its commitment to the sector by assigning indigenous resources to substitute for some of the NORAD inputs, in particular to the NCU.

4.5 Options for Improving Utilisation of Donor Support

The following points should be observed when options are considered for the more efficient utilisation of donor support:

- improved planning and implementation routines and procedures;

- definition of areas where foreign exchange is important to the investment and operations and maintenance programmes;

- definitions of areas where accelerated/concentrated donor investments do not have a negative effect on sustainability;

- definition of areas where donor support may be effectively utilised to improve/assist in providing sustainability;

- identification of specific expenditure items of a recurrent nature, where foreign exchange can be provided by the donor. (Zimbabwe should be required to transfer a similar Z$ amount from the recurrent budget to cover local implementation expenditure expected to be financed with donor funds).

CHAPTER 5 ISSUES OF PARTICULAR IMPORTANCE TO SECTOR DEVELOPMENT

5.1 Decentralisation

The term 'decentralisation' is used frequently in development jargon, but is not always carefully defined. It may be used to refer to projects, at one end of the scale, where emphasis is given to a localised decision-making process based on a largely autonomous local government structure. The involvement of ordinary people is viewed as crucial to the democratic process, rather than as a means to promote economic efficiency. At the other end of the scale, it may be used to refer to those projects where responsibility for implementation is decentralised whilst control and decision-making powers are retained by the centre. The decentralisation of the water sector programme as it has progressed to date would appear to lie somewhere in the middle of these two extremes.

The form within which the decentralisation policy for the water sector is finally institutionalised is of importance not only to the sector. As the prime example of government's current committment to such a strategy, it has significant implications for the national development context as a whole. At one level it thus becomes a 'test case' of central government's willingness to extend districts' responsibilities beyond those of implementation to localised planning and decision making, through to financial autonomy. At another, it serves to highlight problems and constraints, as well as areas of success, which characterise decentralisation, the assessment of which should inform future policy formulations.

The NCU approach to decentralisation has made use of the development committee structure at the local level, which includes the VIDCOs, WADCOs, District Development Committees (DDCs) and the Provincial Development Committees (PDC). The District Administrator (DA) chairs the DDC, and is responsible for all development projects and activities in the district, which now includes the water and sanitation programmes. The DA may not therefore have sufficient time to put into ensuring the success of water projects, or may have to concentrate on these projects, particularly during the peak implementation phase, to the detriment of other important activities.

In addition, whilst the DA is designated as the co-ordinator of the water projects, his role does not extend to direct authority over personnel of the participating line ministries. Many conflicts and problems are solved through discussion within the water and sanitation sub-committees, but the consensus approach cannot in the long-term substitute for a designated project manager who has overall responsibility and decision-making powers. This is an issue which must be addressed, and various options be tried out. A 'task force' approach might offer one solution; another could involve the function being given to an existing or newly-created district officer based in one of the line ministries.

The need for a final decision-making function to be incorporated within the co-ordination role is particularly strong, given the number of line ministries which are involved in the water programmes. During the peak implementation period, the timing of activities, and mobilisation of the resources and inputs required to carry them out, is critical. Where key staff of the line ministries are pressurised to fulfill obligations both to the water programmes and their own ministries' projects, implementation may be severly disrupted. Detailed pre-planning should relieve this type of pressure, but the support and confidence of ministries at provincial and central level is also required.

The dual characteristics of the water programme, - integration and decentralisation, have created an enormous increase in administrative work for many districts officers. With an existing lack of clerical and secretarial services, this routine, but extremely important, administrative work often falls to officers who should be spending their time in the field. More attention should be paid to this aspect in the pre-planning process, and provision be made within project funding for the districts to enable them to take on the required personnel for these kinds of support services.

During the implementation phase of the integrated projects, most of the activities undertaken are well suited to a high degree of decentralisation, with the exception of specialist and technical operations such as borehole drilling. Access to the resources required for implementation is often lacking, however. The fundamental issue of manpower capacity (with respect to both the quality and quantity of personnel required) is not fully addressed in the planning process at present.

The ability of the district to procure other resources such as equipment, input supplies, transport and so on is constrained by a number of bureaucratic imperatives and payment procedures emanating from the centre. National accounting systems are of course necessary, particularly where donor funding is being utilised; is it possible, however, to adapt them to increase control over resources at the district level whilst satisfying requirements of the centre?

Districts' capacity to raise revenue and make decisions about financial allocations should be increased by the provisions of the Rural-District Councils Act. The changes invisaged at present will need to be fully supported by the MLGRUD at the highest level. The fact that the NCU co-ordinator and secretariat is located at this level within the Ministry has a number of ramifications. The water sector programme may be successfully utilised to demonstrate the necessity of financial devolution. Alternatively, if the process is not fully executed, the NCU may face severe criticism from the districts with which it works.

The NCU itself has already made important contributions to the decentralisation process by drawing up draft guidelines for use

by districts when preparing project prosals, budgets, work plans and so on. More effort could be made to involve districts in the drafting process itself, however, and at minimum they should be provided with every opportunity to comment on them and recommend changes if required. Such an exercise represents not only an important learning and communication exercise for district staff; it should also result in guidelines that are useful across the range of conditions, - socio-economic, hydrogeological, geographical, etc, which characterise individual districts.

The need to review and refine the concept of community participation is mentioned elsewhere in this report, based on the assessment of the important but limited extent to which water point users have been actively involved in the programmes so far. This is particularly important in the context of decentralised programmes. Too often, the process stops within the offices of district officials, neglecting the need to ensure that officials themselves are passing on skills and knowledge and a planning and decision-making role to communities, who in turn regard them as genuine representatives.

The impact of community participation has been limited in part because of some confusion over the respective roles of LGPOs and VCWs. Lack of capacity within the MCCDWA at all levels has, however, also meant that the ministry has been unable to influence technical ministries in respect of the need to plan for implementation activities and output targets within a timeframe which allows for a sufficent mobilisation period. The issue of overall programme co-ordination at the decentralised level is clearly a factor here.

Despite the shortcomings discussed in this report, the success of the decentralised programmes are numerous, and are particularly impressive given the short time within which district have operationalised the strategy. It will be important to sustain and extend the obvious committment and enthusiasm of district staff to the process by taking positive steps to reduce the constraints which presently confront them.

5.2 Development Strategy

The development strategy adopted by the NAC implies a geographical concentration of activities during a limited time (Phase 1) in order to achieve efficient implementation. As a result, there will be a peaking of the implementation activity level which it is not the intention to sustain. This strategy assumes that each programme shall be within the district's capacity. Examples so far show, however, that it has been neccessary to provide extensive planning and implementation support to districts where integrated projects have been initiated.

Inevitably, this development strategy will cause a conflict with regular duties unless external support is provided. The examples reviewed in the present RWS evaluation study were all districts where no other major development programmes were undertaken simultaneously. The replicability of the phased, high output approach seems to be highly dependant on the prerequisite condition that the district can devote major staff resources to the programme.

If successfully implemented, the stock of facilities to be maintained will increase dramatically over the programme period (3 - 5 years). Therefore, experiences of the post implementation situation will be of crucial importance to an evaluation of the feasibility of the adopted strategy. The findings of the RWS study demonstrate that considerable improvements in the maintenance system have been achieved, but these have been dependent on the donor presence.

The NAC strategy is part of a new policy for the sector. As with other Government policies, it should be carefully tested, reviewed and evaluated before it is adopted for implementation on a national scale. It is interesting to note that NORAD in its statement on policy guidelines for the current sector programme stated that ".. one or two districts should be chosen initially to gain experience with the new inter-ministerial coordination". This contrasts with the fact that the approved 1988/89 Plan of Operation covers <u>six</u> integrated projects.

It is recommended that a thorough documentation of experiences and an evaluation of the integrated project concept should be carried out well before the end of the current programme period. It is important to organise this as a participatory evaluation with interministerial representation from the different administrative levels.

5.3 Expenditure Coverage

The rapidly increasing stock of communal PWS installations to be maintained implies a commitment by GOZ, <u>or the communities</u>, to meet growing recurrent expenditures. At present, the water sector is one of the few growing public sectors in Zimbabwe but it is questionable whether this priority allocation will remain unchanged. When maintenance is reliant on the voting of recurrent funds in government budgets, a change of priorities or a more constrained budget situation would make the upkeep of installations highly vulnerable.

Evidence from a recent study of willingness to pay for rural water highlights the limited interest amongst communities in contributing financially to the upkeep and repair of water points. The most common response was a willingness to pay very small sums on a one-off basis, in the event of a breakdown.

Although the resources could no doubt be made availble by the GOZ, it will depend on the political will to do so. The current strategy of a Government based maintenance system will not only

require funds, but also require that they can be utilised to establish new posts and, for example, be released to meet foreign currency requirements. The present operative policy of the GOZ seems to be negative in these respects.

The present concept of community participation does not include the introduction of possible future user commitments towards expenditure coverage. This aspect should be immediately introduced to the communities as part of the mobilisation and training procedures. Futher reference is made to Ch. 3.4.

Naturally, the question of water charges is politically sensitive. Examples from other developing countries are plentiful as to how the lack of political will to resolve the problem has caused facilities to deteriorate, often beyond the possibility of rehabilitation. It is therefore encouraging that Zimbabwe (including the NAC) has initiated the debate on this issue. With the present level of investment the urgency of the matter is evident.

The options available are closely linked to the nature and extent of community participation as well as to the GOZ policy on providing social infrastructure for residents of the communal lands. The neccessary policy decisions ought to be made as soon as possible; meanwhile the question remains as to whether the support to further development should be increased (or even continued) until this issue has been resolved.

5.4 Community Participation

Experience in the Manicaland programme and in Mt Darwin has highlighted the need to pay careful attention to the implementation of the initial community mobilisation process, as well as to increase and extend long-term communication and information support to communities after water points are installed. Where the former is limited, communities will continue to feel that they do not own the water points and subsequently, be less likely to play a full role in maintenance, and more likely to resist cost recovery exercises if they are instituted. Where the latter is limited, community-based maintenance will also be constrained, and the programmes' potential for creating change in living standards and health profiles reduced.

The role of the MCCDWA in the integrated programme, now that it is responsible for the community participation component, is crucial. The Ministry not only has to implement the community participation process as effectively as possible, but has the additional task of convincing the technical ministries about the importance of the process and of the need to link target achievements to the pace of community involvement, rather than to an externally imposed drilling timetable.

The recruitment of the Community Mobilisation Team should assist the Ministry to develop its currently limited skills base. As with all technical assistance in the sector, it is important that the Community Mobilisation Team have fully defined terms of reference, counterparts to work with and a specified date upon which the counterparts will take over from the consultants. Shortfalls in staffing levels from the centre through to the VCWs will constrain development of capacity within the Ministry. In this respect, the Community Mobilisation Team should undertake as a priority the proposed manpower development plan.

Together with the NAC Training and Education Sub-committee, the Community Mobilisation Team should also work quickly to standardise training materials and procedural guidelines. A variety of these have been prepared by the consultants working in Manicaland, DDF, the MOH and the MCCDWA itself. At the same time, efforts are required to incorporate basic technical information into the materials, for use by both VCWs and community members. Once standardised, the materials and guidelines should be sent out to participating districts as soon as possible. The district water and sanitation committees will need to utilise them during the project planning stage, so that realistic implementation timetables may be drawn up.

Training for the new VCW cadre is already underway in most districts, aimed at improving their function as extension workers servicing other ministries. Specific training programmes relating to their role in the integrated water projects will also be required. There is currently some confusion between their responsibilities in the community mobilisation phase and those of the Local Government Promotion Officers. Job descriptions should be clarified for both, in respect of their roles within the water projects. If the VCWs are not to become demotivated, terms and conditions of employment must be reasonably attractive, and avenues to input supplies required for construction phases be open to them, to avoid their communities blaming them for shortfalls and late deliveries.

As indicated elsewhere in the report, the concept of community participation itself should be examined. Assessment has highlighted three main issues:

- community mobilisation has often been confined mainly to the leadership;
- community members themselves, and their leaders, have virtually no role in planning and decision-making with respect to the integrated water projects;
- involvement in pre-siting, contributions to input supplies and labour contributions are important, but by themselves do not constitute full community participation.

Mobilising and fully involving all community members from the planning phase onwards will considerably extend the time required for this component, prior to implementation. It could, however, be incorporated into a pre-programme planning period, which would also include scanning exercises, preparation of water point

inventories and so on. Villages and wards would be prepared and motivated in advance, and be ready to contribute to implementation as soon as input supplies, drilling teams, etc, are scheduled to arrive.

Extending the concept of community participation in this way will slow down the achievement of output targets; on the other hand, it should increase the long-term sustainability of the programmes. Stronger community involvement at the start of the programme, enhanced by long-term information and communication support and on-going health education, should increase users' self-identification as owners of the water points and hence their willingness to contribute to a community-based operation and maintenance system. The impact of the 'integrated message' about the interelatedness of water, sanitation and hygiene practices should also be increased as a result.

As with the decentralisation strategy, the community participation model adopted by the integrated water projects can serve as an important example of government's commitment to the concept, and be utilised in projects and programmes in other sectors. To achieve this, every effort must be made to support the MCCDWA in its role in the programme, and the Ministry itself must begin to demonstrate more fully its capacity to undertake the task. Community members have already indicated their willingness to support the programme; it is important that their contributions are promoted and reciprocated as widely as possible.

5.5 Maintenance of Primary Water Supplies

The provision of recurrent funds made by government to the DDF has increased over the last few years as shown below:

Item (Z$ '000)	1986/87	1987/88	1988/89
Maintenance of handpumps, etc	1,366	1,287	1,485
of which allocations are for:			
Pumpminders salaries		290	470
Spares, labour and transport		997	1,015

A total of Z$894,00 has been voted for rehabilitation for 1988/89.

In addition to these allocations from government, an unknown amount of donor funds is spent by DDF on maintenance. In all districts supported by NORAD, the seemingly standard allocation of Z$21,000 has been reduced to Z$6,500. The balance (and possibly more) is made up from NORAD funds drawn from a different vote.

With this budgetting and expenditure accounting system, there is no conscious use of foreign exchange. It would be preferable to use it productively to buy necessary imported items, reserving the Z$ for local payments.

The evaluation team has attempted to develop a system cost model as a possible tool for analysing future costs of handpump maintenance, if the rural water supply programme proceeds as currently envisaged. The main inputs and assumptions of the model are:

- 12,500 pumps exist at present;
- 1,500 pumps will be added annually;
- the present estimated breakdown rate (based on records) is: 80% of pumps need attention in any one year;
- unit costs for rehabilitation have been estimated;
- breakdowns result in a call-out of the mobile maintenance team, for which a standard 'call-out fee' has been estimated (the fee can be varied);
- rehabilitation of old pumps will take place after 8 years;
- an increase of annual breakdown frequency with pump age is assumed (the figures can be varied);
- 6% has been adopted as the interest rate for net present value calculations.

These inputs require further analysis and refinement before the model could be fully useful to the DDF, but the concept seems well worth pursuing. A sample print-out is included as Appendix 10.

As an illustration of future maintenance costs, the model has been run for two sets of assumed breakdown rates and with alternative call-out fees. The two sets of applied breakdown rates, taken as a percentage of pumps breaking down during the first, second, ... etc. year after installation/rehabilitation, are:

25%,50%,100%,150%,200%,200%,300% ..... (realistic)

2%,2%,50%,80%,100%,150%,200%,200%,300% ..... (optimistic)

The following table is based on the inputs defined above (Z$ million):

	Call-out Fees Z$	Net-Present Value	Annual 1996/97	Annual 2001/02
Realistic	100	61.7	7.8	8.6
	200	94.4	11.9	13.6
	300	127.2	16.1	18.6
Optimistic	100	53.6	6.9	8.1
	200	78.2	10.2	12.6
	300	102.8	13.6	17.0

A cost per call-out of Z$200 is considered to be a reasonable estimate.

These figures illustrate that:

- even with the most optimistic scenario, maintenance allocations will need to increase by approximately five times over the next 7-8 years;

- reliability and sturdiness of handpumps are important to keep maintenance costs down;

- finding cost-effective ways of operating the mobile maintenance team could potentially provide vast savings.

It is relevant to ask whether the GOZ will be able and willing to provide these resources (including the necessary foreign currency). If both or either are unlikely, the entire strategy for PWS development must be fundamentally revised.

Compared to the situation that existed during the 1984 Evaluation Study of the ZIB 001 programme (NORAD support to DDF), vast improvements have been made in many districts to the system for maintenance and repair services. This applies in particular to districts where the 3-tier maintenance system has been introduced. The NORAD support, along with support from other donors (notably DANIDA), has been instrumental in this process. Some of the reservations as to the sustainability of the 3-tier system were mentioned under Ch. 3.3 above.

The DDF district based organisation has so far been lacking capacity to undertake preventive maintenance. The role of the second tier (pumpminders) is not yet clear and must be related to the types of installations existing in any given area. The same applies to the first tier. Moreover, the relationship between the community and the DDF based maintenance needs to be clarified.

The role of the pumpminders as conceived in the 3 - tier maintenance system is questionable. They can do only a very limited part of the work on deep boreholes, due to the need for heavy equipment which they are unable to carry on their bicycles. Much of the work that they can do, could also be carried out by

the community based caretakers, particularly if the latter were given more extensive training as part of a stronger community participation concept.

The most common handpump, the Bushpump, has a long tradition of use in Zimbabwe and is entirely locally manufactured. It is heavy (and robust) and therefore not well suited for community level maintenance. Improvements and modifications of the pump are being undertaken and there is still a substantial potential for further improvements, without the need to resort to importation of major parts or materials. Important research work has been undertaken on handpumps as part of the UNDP support to the International Drinking Water Supply and Sanitation Decade. It is felt that Zimbabwe could benefit from drawing on these experiences in their own efforts to make the Bushpump more reliable and easier to maintain.

The rural water supply and sanitation programmes are dependant on continued Government support in order to be sustainable. Although community involvement has been introduced, the local institutions do not as yet seem strong enough to be able to manage future maintenance. With continued support, community training and development of the local management capability there is, however, good potential for transferring more of the responsibility to the users. The opportunity to introduce this possibility to communities should not be lost at the mobilisation stage, when future commitments may be discussed and accepted by the beneficiaries.

The continued emphasis on hand dug wells as the simpler and more cost-effective solution for PWS is encouraging in the context of sustainability. More than other African countries where NORAD has supported water supply and sanitation programmes, Zimbabwe seems conscious of the need to proceed with a programme which can be expanded and managed within the projected constraints of the country's development resources. The hand dug wells option offers particular opportunities for a fully decentralised, community based maintenance system, which may be most valuable in view of contrained GOZ resources for recurrent costs.

5.6 Applied Technology

Rural water supply development in Zimbabwe relies almost completely on groundwater sources. Hence, the technological aspects of borehole and well construction, and maintenance, are crucial to the overall success of the sector programme. Moreover, the applied technology also has to be considered in terms of its suitability for community participation during all programme phases.

The tendency in Zimbabwe has been for funding for boreholes and wells to come out of separate budget votes and from separate ministries. As a result, the budgets, rather than the available water sources and the demand, have determined the water abstraction technology. The lack of cooperation and coordination

between the ministries involved in the sector contributed to these problems. However, through the preparation of the NMWP and the subsequent introduction of the "integrated approach" the situation has been substantially redressed.

There is still a tendency, however, for the number of boreholes budgetted to be put in regardless of alternatives. With the new development strategy the chances are much better that the allocated boreholes will be located according to criteria based on the importance of having drought relief back-up.

The lack of cooperation has been an obstacle to improvements in sector performance in many areas. It seems quite inappropriate to have different standard designs for PWS headworks constructed by DDF, MEWRD and MOH. The standardisation of the Bushpumps, including control of manufacturing quality, has also suffered in this process.

Recent examples (Mt Darwin) indicate that the procedures and skills for selecting and siting of water sources are not yet compatible with the high investments made in groundwater development. There are few hydrogeologists in Zimbabwe, and most of those who received on-the-job training from Interconsult have resigned from the civil service. Hydrogeology is one of the priority areas for continued use of expatriate consultants. The Interconsult hydrogeologists represent a competent professional resource base, which should be utilised in the process of training Zimbabweans in applied hydrogeology.

The high speed drilling equipment imported to Zimbabwe primarily, with the assistance of donors (NORAD included), is complex and requires substantial back-up facilities in order to function efficiently and economically. There are several examples of how lack of accessories or spare parts has hampered the drilling operations. Furthermore, the high-speed performance is not easily compatible with a community participation strategy. The traditional cable tool rigs are in this respect more satisfactory (as they take 2-8 weeks to drill a deep borehole), and can be used at district level with little external support, apart from supervision by a geologist from time to time.

It is particularly important for DDF to have an organisation which is suited to the requirements of PWS programmes, that is: community participation, district based implementation capacity, training of local caretakers and so on. Cable tool rigs are compatible with these criteria, and have the additional advantage that a set-up based on such rigs requires little foreign exchange, limited logistical support and less administrative back-up. The overall drilling economy which might be achieved will be good under most conditions prevailing in Zimbabwe.

Based on the NMWP's proposal for a division of labour between DDF and MEWRD, the following 'division of technology' would be appropriate:

- DDF to drill with cable tool rigs as a regular operation within the integrated district programmes; equipment to be based in the district for the period required to sink sufficient numbers of drought relief boreholes;

- MEWRD to continue as the state contractor for drilling with high-speed equipment, and to be requested to drill where or when cable tool rigs are not suitable (due to geology, urgent drought relief, etc).

In view of this, NORAD should not finance the proposed rehabilitation of the old, light-weight, high-speed drill rigs, but, rather, should be prepared to finance the procurement of cable tool rigs to be deployed to the districts where integrated programmes are in progress. When considering this issue, it must be observed that the costs of rehabilitating (or virtually rebuilding and re-equipping) the existing rigs will amount to approximately NOK 11.5 million (including required accessories). DDF had proposed to cover this rehabilitation for approximately NOK 2.6 million.

A monitoring programme, covering water levels in both shallow and deep wells, is required for the comprehensive assessment of the applicability and reliability of well technology. This monitoring activity should become part of standard maintenance procedures and be reported on regularly. The proposed monitoring programme would provide the basis for drought forecasting, which could assist with:

- early planning and implementation of remedies against the impact of drought;

- selection and development of adequate technologies for groundwater abstraction;

- the stimulation and creation of understanding about groundwater behaviour in rural Zimbabwe.

Depending on the results of such monitoring during dry periods, it might be necessary to modify the technology selection criteria, in order to obtain the required level of reliability.

The need to and possibilities for improving the locally manufactured handpumps has been noted in section 3.7. The work of the NAC sub-committee in this field should be given high priority and could possibly be given NORAD support as an applied research activity for a limited period.

5.7 Institutional and Manpower Development

Public sector manpower development in Zimbabwe is under severe constraints, due to the Government's reluctance to accept a swelling civil service. This fact contributed to NAC's decision that consultants and NGOs should be utilised more actively in the implementation process.

The Public Service Commission (PSC) is imposing strict control on the approval of new posts and is thereby limiting the possibilities for rapid expansion of ministerial capacities. The recent introduction of a freeze on vacant posts may result in further difficulties for the ministries in trying to carry out their assigned duties. Although the freeze may be lifted for particularly important posts, delays are bound to occur. This will impose constraints which must be taken into account during programme planning.

The intentions of the NMWP with regard to manpower development have not been followed. NORAD itself has found it difficult to support manpower development, due to lack of plans and commitments by the respective ministries. The shortfall of qualified staff at the top and middle management levels may prove to be one of the most critical constraints to further implementation, as well as to sustainability.

For the staff at lower levels, and within certain specialised technical operations, some ministries have been able to provide in-service and/or institutional training. The formal training institutions such as the University of Zimbabwe and the Harare Polytechnic do not cover the engineering and technical management aspects required for the rural water sector. In order to make available a full range of training opportunities, the curricula of these institutions should be expanded. Note was also taken of the fact that UNDP/WB is in the process of establishing a regional training network centre for the sector at the University.

Foreign technical assistance personnel and consultants have been used in the NORAD supported programmes as in most other donor supported programmes. The workload on the managers in the sector is already well beyond the size which can be handled without external personnel resources. At present, the dilemma is that there are inadequate Government staff available to exchange skills with the external staff.

Among external staff there are both expatriates and Zimbabwe nationals (recruited both from the private and public sectors). As indicated above, it is the NAC's intention to make more active use of the private sector. By so doing, it would be possible to make institutionalised arrangements for the transfer of knowledge from expatriates to Zimbabwean private sector employees working within the rural water sector.

The staffing constraints are of critical importance to the further sector development strategy. With the present situation, where the public sector will be prevented from growing rapidly, there would appear to be a case for transferring more responsibility, in particular for maintenance, to the communities themselves. With management support from the public sector the private sector could also be utilised for specific maintenance tasks.

The male dominance which characterises most sectors of Zimbabwe's public administration is equally strong in the rural water sector. Some minor changes have occurred - for example, the training of female well sinkers in the Mt Darwin project, and the training of female committee members/caretakers at community level. Achievement of equal opportunities and influence seems still to be distant, and the process appears to be very slow. The current trend of task and manpower allocation within the sector hardly corresponds to the traditional influence of women over water resources utilisation for domestic purposes.

5.8 Health Impacts

It is in respect of the objectives of improving health and promoting health education for behavioural change that the MOH is most directly involved in the programme, and the Ministry is responsible for monitoring the health impact of the water and sanitation interventions. Lack of skilled manpower has to date limited the extent to which detailed monitoring has been undertaken - it is a methodologically difficult area, and one in which the Ministry does not currently have its own expertise.

Such monitoring as has been undertaken has concentrated on the functioning and utilisation of improved water points. District inventories and liasion with the DDF serve to identify the number of working points at any given time. Micro surveys - such as the one undertaken in Makoni by S. Saugestad - are carried out to investigate levels of, and constraints to, usage of improved water. Such surveys have thrown light on similar issues arising in almost all districts - the quantities of improved water being used have not risen substantially, so there is little direct effect on water washed diseases, and unimproved sources are still utilised for a variety of water-related activities, thus reducing the programme's impact in limiting the incidence of water-borne diseases.

The MOH is concerned about this situation, but takes as its primary aim the installation of improved water points; any impact on health will only be discernable in the long-term. Meanwhile the objective is to provide clean water in sufficient quantities at perennial sources, in order to meet at least the basic needs of the majority of the rural population. In pursuit of this, the Ministry is embarking on the pilot family wells project, on the assumption that water usage will only be improved where clean water is immediately available to individual households.

NORAD funding has been available to the MOH for over a year for a more detailed health impact study. Work undertaken in this area in respect of water and sanitation programmes in other developing countries indicates that the incidence of diarrhoeal diseases, measured through case-control studies, is the most effective indicator of health impact. Setting up such a study, data collection and data analysis are all statistically complex, however, and the MOH has to date been unable to find a competent epidemiologist either locally or in Norway who would undetake the work.

The weakness of the Ministry's Health Education Unit has already been noted. The Environmental Health Office has now employed its own health education staff at Head Office level and is training existing staff at provencial level, and health assistants, to have a particular responsibility for health education activities in respect of the programme. Some 30 or so manuals have been prepared for use by health assistants, funded with NORAD monies, as well as by other donors involved in the integrated programmes.

One of the major constraints to the health education programme is the 'loss' of the Village Health Workers. Now working under the MCCDWA as Village Community Workers (VCWs), these village based workers are responsible for mobilisation in respect of all development activities, and for a large amount of training of village groups, committees and so forth. They themselves, thus, spend a substantial amount of their own working time on training courses, and whilst working at village level, promote all kinds of programmes, not just water and sanitation and other health-related activities. The MOH estimates that there has probably been a reduction of over 50% in the amount of time this cadre can now give to health and hygiene education.

There is clearly a need for greater support to the health education aspects of the programme, if health impact is to be increased. An on-going programme to produce low cost videos requires additional funding, as does the production of training manuals and other literature for health workers and the communities involved. Transport for health assistants is a perennial problem, but will become more acute as they have to take over more of the health education work from the VCWs.

The effectiveness of health education activities is directly linked to the type of technologies which are used in any water and sanitation programme. As discussed in other sections of this report, the emphasis of the current implementation strategies in the integrated programmes has been on relatively 'high-tech' installations, the use of which has out-paced the community participation process in many cases. Up-grading existing family wells presents an attractive alternative to this situation. At an estimated cost of Z$50 per well, the 200 000 existing wells could be up-graded in a national programme costing only Z$1m. Moreover as sanitation is a component of the programme, the present imbalance between the implementation of household sanitation and communal water points could be reduced.

It is the MOH's view that only immediately accessible improved water will stimulate dramatic increases in health impact arising from the increased usage of protected water sources, and that health impacts will also be more likely where the household wells can be effective in promoting family nutrition through the establishment of small gardens. It will be very important that NORAD carefully reviews the results of the on-going pilot programme for up-grading family wells, as well as of the study it is currently funding on small scale water supplies for nutrition.

If the integrated programmes are in the long-term to have an impact on the health status of beneficiaries, the many components which are integrated within the concept of 'health' itself must be incorporated as fas as possible.

5.9 Water for Productive Purposes

The development programmes for PWS are directed almost exclusively towards water supply for domestic purposes. From community level investigations, it is clear that in many areas the local priority would be water for irrigation or cattle watering purposes.

Additional water for non-domestic purposes would enhance communities' basis for economic development and thereby promote sustainability of the programmes. Although this aspect is included in the scope of the present integrated projects, through land use planning and the possibility of allocating water points for vegetable gardening, the efforts are rather insignificant so far. Hence, the prospects for achieving programme objectives are correspondingly limited.

Even for micro- or small-scale irrigation the amounts of water needed are much higher than what can normally be produced from the type of installations constructed under PWS programmes. Considering the importance of this aspect there should be opportunities to exploit surplus water in the rare cases where such exists, or to support development of additional capacity (dams, for example) for irrigation purposes where the community is willing to meet the major part of the additional costs.

Efforts to develop productive water sources must be undertaken with caution. With the high levels of capital investment required, viability must be ensured. The feasibility of using small dams for irrigation is by no means guaranteed, and where they have catchment areas subject to deforestation, siltation rapidly reduces their usefulness. In other areas, however, they can serve to reduce soil erosion by drawing cattle watering activities away from cropping land and domestic water points.

Given a cautious approach, and based on a review of the situation and the implementation of pilot projects, as suggested in section 6.2 below, emphasis on micro-scale irrigation should be increased. Particularly in marginal areas, agricultural production can only be slightly improved in the absence of additional water supply. Development of the economic base within communal areas as a whole is a major national priority, in respect of which water for productive purposes is a critical intervention, with potentially positive spin-offs for employment, the national economy and food security within Zimbabwe and SADCC. As noted in section 5.10 below, access to water for production purposes is particularly important for opening up income generating opportunities for women.

5.10 Gender Issues

NORAD identifies women as the major benficiaries of rural water and sanitation programmes, primarily because of women's important roles in the domestic sphere. As beneficiaries, it is envisaged that they will participate in planning, implementing and maintenance of all water points. The Plan of Action for Norwegian Development Assistance to Women in Zimbabwe (Draft, 1988) discusses a number of specific objectives for women's involvement in the Zimbabwe programmes, and the extent to which these are being met - or are likely to be met - is discussed in this section.

Important steps have been made in involving women in the water and sanitation programmes so far. Women perceive themselves as active in the programme activities and value the increased availability of improved water sources which has resulted from the programme. To further increase their participation, however, perhaps the biggest singel need is to extend the amount of technical information on water and sanitation which is made available to them. Until women themselves feel confident in making decisions about and taking control of technical aspects of implementation and maintenance processes, their involvement will be limited.

Observations from the fieldwork indicate that women are taking up roles on the Water Committees; often as members and pump caretakers, less often as Chairpersons. In addition, some female pumpfitters and well blasters have been trained. Overall, however, if the situation in Makoni District is typical, women who take up these roles and go for training are those less likely to pose any conflict within the family as a result of taking on extended responsibilities. The domestic sphere is already largely under the de facto control of women, so there is limited direct impact arising from their joining Water Committees.

Individual women may, however, benefit from the training received, which together with some decision-making and practical experience of committee work, would increase women's confidence and subsequently enable them to take up posts on VIDCOs themselves. Here, they would have greater opportunities for raising the issues of concern to women, whether related to water or not. Whilst such benefits are not guaranteed, they would be increased if female community members had a role in planning in the initial phases of the integrated programme.

It is not clear at present what the programme strategy of promoting women's involvement hopes to achieve. More importantly, there has been little discussion with women themselves, to determine what they themselves anticipate. Such discussions should be initiated, however, in order that the programme may adapt to women's own priorities and expectations. As the majority of VCWs are female, their training programmes should incorporate formal methods for drawing in and discussing with women, and preparing with them strategies for involvement and participation. These strategies may vary from district to district.

There has been some indication during the fieldwork of the programme's success in reducing the workload of women, where water points have been installed in close proximity to individual households. More evidence on this issue will be available from the forthcoming anthropological study in Makoni District (see case study). As distance is not always the crucial factor, however, the relative nearness of improved water points does not always reduce the time taken to collect water, as unimproved sources retain their importance for some water-related activities such as laundry and bathing.

Whilst the washing slabs appear to be quite popular (although more attention could be paid to improving and standardising design features), laundry is still often done at a river. In addition, as the traditional view of water as a scarce resource still prevails (as discussed by Saugestad), users are not noticably increasing the amount of water they use in the home. Health education programmes will need to promote the use of increased amounts of water if there is to be a significant impact on the level of water-washed diseases, but should take into account what this may mean for increasing women's workloads.

There is no evidence to suggest that there has been any increase in the usage of boiled water, and it is highly unlikely that additional fuelwood is being collected for such purposes. Women interviewed during fieldwork indicated that the difficulties involved in fuelwood collection precluded any increase in usage. Warm water is customarily only used for bathing during winter months.

There has been a tendency to isolate the involvement of women at the community level. More effort is required to increase the number of females in executive posts in the sector. The employment of female pumpminders, well blasters, well sinkers and builders would be an additional channel. It is appreciated that the extent to which women can fill senior posts is currently limited because of the legacy of their lack of access to education prior to Independence - which perhaps accounts for the unfortunate position where only one member of the MCCDWA's Community Mobilisation Team is a woman - but more efforts could be made to interest women in such positions, and the availability of suitable training courses increased.

Although small scale irrigation projects have not been incorporated into the rural water supply programmes to date, other programmes have highlighted the need for irrigation for vegetable plots. Women have benefitted from individual and co-operative vegetable gardening, not only because it has enabled them to provide a more nutritious diet for their families, but also through the income earned from such activities. Participation in such projects has also increased women's level of skills and self-confidence. To extend these features beyond the personal benefits deriving from positions on Water Committees as well as opening up for change in women's economic status, pilot small-scale irrigation projects should be incorporated into the

integrated programmes. Women's roles and level of control ought to be clearly spelt out so as to promote change also in their socio-cultural position.

CHAPTER 6 OPTIONS FOR FUTURE NORWEGIAN SUPPORT TO THE SECTOR

6.1 Possibilities for Change

The current bilateral agreement which was originally expected to be valid up to 1990, provides the framework for any immediate changes in the Norwegian support. Although tentative financial allocations committing most of the NOK 180 million have already been made, the procedure with annual consultations makes it possible to incorporate agreed changes within the scope of the agreement.

Progress so far seems to indicate that actual expenditures will be lower than the projected amounts, - NOK 10.1 million, or approximately 25%, unallocated for financial year 1988/89. As a result, there will be an accumulated "degree of freedom" to redirect the current programme. It is currently assumed that the NOK 180 million may last up to 1992.

The present bilateral agreement is open to substantial changes in programme content, as long as the overall objectives and intentions are adhered to by the parties. This possibility should be utilised.

There is a danger connected to the large amounts of unallocated funds: Zimbabwe may feel an obligation to spend them within the agreement period and NORAD would like to avoid the "pipeline" problem. While considering changes in the Norwegian support it is thus important:

> NOT TO ALLOW THE PROJECT AND ACTIVITY PLANNING TO BE DICTATED BY THE FUNDS AVAILABLE, AND THUS CREATE AN IMPLEMENTATION PACE WHICH CANNOT BE MANAGED AT THE CENTRAL, PROVINCIAL OR DISTRICT LEVELS

Provided Norway is willing to continue the support beyond the expiry of the current agreeement period, wide possibilities for change exist. In a new agreement the objectives, cooperating parties and procedural requirements may be changed to accommodate redirected support. Then there will not necessarily be a need to limit the support to traditionally recognised water supply and sanitation activities, if it is agreed to give more broadly directed development support; for example, for income generating activities related to water development.

6.2 Options for Change within the Current Agreement Period

Main Principles for Short Term Changes

The Evaluation Study has pointed mainly at areas of uncertainty due to the short experiences gained to date in implementation based on the integrated concept. A number of critical weaknesses have, however, also been pointed out. In the immediate term it is therefore important to seek clarification of these uncertainties as an input to planning for possible continued sector support.

Two overriding objectives should be adopted by NORAD for the operation of the remaining part of the agreement period:

- the apparent dominant influence of Norway as a donor to the water and sanitation sector should be reduced;

- the scope and content of the programme should be simplified and focussed more directly on issues of critical importance to the achievement of the objectives.

Two important actions would assist in achieving the first of these objectives:

- a Zimbabwean national should be appointed and take over as Head of the National Coordination Unit. Norwegian support should otherwise continue as before under the leadership of this new Head;

- a manpower review should be carried out to specify available and required manpower resources at the managerial and specialist levels where technical assistance is currently provided.

Technical assistance should be continued on the condition that a plan for replacing expatriates (and locals, where applicable) in specific posts has been established. It is realised that such a plan may imply a long term process of both recruiting, training, and deploying the actual candidates, but the perspectives should be considered by both parties at the time of entering into projects with such personnel requirements. Efforts should be made to use local consultants and expertise wherever possible, particularly in respect of assistance to districts during the peak implementation phase.

NORAD should, during the remaining time of the present agreement period, aim at having ongoing projects completed, thereby minimising carry-overs into the next period. The next agreement can then be designed to make full use of the experiences of the current inception period of the NMWP strategy. The present level of sector activities and the way implementation is undertaken have to a considerable extent been facilitated by the Norwegian support. In addition to the above measures NORAD should endeavour to manage the programme with a view to eliminating dependancy on continued Norwegian support.

The NAC emphasises the development of the national programme based on implementation of integrated district programmes. It is strongly recommended that:

- the current strategy for implementation of the integrated approach should be evaluated. This review should provide proposals for appropriate modifications where required in order to address existing problems.

The adopted strategy for sector development represents a first attempt to create a uniform framework for the participating agencies. In spite of considerable planning, including the NMWP, many issues and problems remain to be resolved. NORAD should therefore encourage experimental implementation, with thorough monitoring and evaluation, as a means of identifying improvements to present methods and practices.

There is a general need to improve (or rather to establish) the monitoring and evaluation system (MES) for the sector. The issue is specifically adressed in at least four of the already approved programme projects (ref. Planop 1988/89). In order to cover both the immiediate management needs and the long term achievement/impact, this MES should adopt three separate reporting levels.

- Records of the implementation activities; planning information, baseline data, implementation plans/achievements with key data, and project completion records prepared by the respective implementing ministries and compiled by MLGRUD (or any other responsible ministry).

- Maintenance records; updated status on performance of installations, frequency and costs of repair services, functioning of respective tiers for the maintenance system, etc prepared by DDF

- Follow-up studies on socio-economic and behavioural aspects as a supplement to regular reporting; to be initiated by MLGRUD and commissioned by MCCDWA, MOM or research institutions depending on the focus of the study.

Donor support should not be granted to activities where conflicts or constraints within the GOZ could be further cemented as a result of such support. For example, procurement of additional drilling equipment should be based on an agreed division of responsibility for drilling; the possibility of improved transport management should be considered before approving additional vehicles; improved procurement procedures could help to avoid unjustified commodity import and so forth.

<u>Specific Project Proposals</u>

It is recommended that the following projects be developed and adopted for support by NORAD during the forthcoming budget periods of the present agreement period:

a) Pilot Project for Small-scale Irrigation

Given the priority accorded to water for productive purposes at community level, and the importance which it has for the economic development of the communal areas, the establishment of pilot projects, after a review of relevant information, is proposed. The sector programme already incorporates the possibility of developing such projects.

The **objective** will be to:

- make recommendations for the preparation of water development programmes with small-scale irrigation as an integral part of the district sector programmes.

A rigid definition of small-scale irrigation should not be applied; both micro-irrigation for nutritional gardens and more formal, small-scale irrigation projects would be considered. Primarily, however, spare capacity of domestic water point sources should be utilised, but also minor surface water based schemes or specially drilled boreholes could be utilised.

Activities will include:

- a review of experiences of small scale irrigation projects, in particular where they are part of integrated programmes (ref NORAD supported pilot projects carried out by the Zimbabwe Women's Bureau);

- a review of experiences gained within the ZIB 007 programme, including the practical implications of land use planning for project implementation;

- review of procedures for allocation of land and users' rights with proposals for future guidelines;

- the planning and implementation of pilot project(s) within district(s) where integrated programmes are being implemented;

- the preparation of proposals for extended integrated programmes to be considered for future implementation.

The **timing** of the review and its outputs should be determined by the deadline for input to the planning of future Norwegian support. Project preparation and thereafter the reviews should start immediately.

Responsibility for the project should be taken by NCU, in cooperation with DDF and MLARR.

b) Sector Manpower Review

The **objectives** will be to prepare:

- a manpower development plan for the management and professional specialist levels where requests for technical assistance personnel are most likely to be presented;

- recommendations on further manpower planning to be carried out for the entire sector.

Activities will include:

- an overview of ongoing manpower development planning;

- a review of personnel requirements and propose technical assistance necessary to manage the projected sector development;

- preparation of a plan, including Terms of Reference, for the preparation of a comprehensive Manpower Development Plan for the sector.

The timing will depend on the review of ongoing manpower planning programmes undertaken by various sector ministries. The project should be initiated as soon as possible, in order to provide background for assessment of technical assistance requests.

c) Evaluation Study of the Integrated District Programmes

The objectives will be to make recommendations on the strategy for the implementation of integrated water supply and sanitation programmes, including:

- criteria for levels of activity;

- programme time frames for respective activities;

- programme management structures;

- planning and implementation guidelines.

Activities will include:

- compilation of all relevant information and project documentation;

- field observations and in-depth discussions with project planners, implementors and beneficiaries;

- the holding of workshops with sector agencies to review current strategies and planning methods;

- review of documented experiences and drafting of revised guidelines for planning and implementation.

The timing should comply with the deadline for input to the next bilateral agreement. Allowing for a participatory approach, the Study would take at least four months, presumably between August and December 1989.

Responsibility for commissioning the evaluation should be taken by NCU, and the Team should include members drawn from sector agencies and independant consultants. MFEPD should provide the Team Leader.

d) Well Monitoring Programme

The objective will be to:

- develop a system for routine collection of data, assessment of well yields and drought forecasting.

Activities will include:

- establishment of a monitoring programme for water levels in wells and boreholes, including criteria for the selection of representative wells in a particular area;

- development of methods for processing of observed levels with a view to determining safe yields from wells and to enable drought forecasting (i.e. how aquifer behaviour relates to rainfall);

- drawing up of guidelines and criteria for the selection of groundwater development technology in a particular area;

- testing of proposed monitoring and data processing procedures in 3-5 districts with different groundwater characteristics, including subsequent modification of the well monitoring programme, if required.

The project should be planned and initiated at national level, and within selected districts, as soon as possible. Instructions to start the measuring of water and well bottom levels could be issued immediately specifications have been prepared.

Responsibility for the project should be taken by MEWRD, in co-operation with DDF and the MOH.

e) Training of District Teams

The objective will be to:

- establish an adequate programme for training and development of the implementing officers at district level.

Activities will include:

- a review of experiences gained in districts where integrated programmes have been introduced, with particular emphasis on skills, performance and capacity of the district based personnel;

- identification of specific areas where lack of specific skills have posed a constraint, and where these could be improved through training and/or systemmatic backstopping support;

- development of standard programmes for training and communication with the district officers, based on the training needs identified;

- modification of the NCU planning guidelines to accommodate the necessary emphasis on areas where lack of understanding, rather than skills and competence, has been the constraint.

These activities could be appropriately accommodated in the on-going work of the NCU, and could thus start almost immediately. The outcome of the proposed evaluation shall, however, be built into the training activities based on approved modifications.

In certain areas (for example, in respect of training for specific cadres) defined tasks could be assigned to individual participating ministries. A practical approach would be to create a separate (or extend an exisiting) project to meet the above objective.

Proposals for Redirection of On-going Activities

It is recommended that the following specific changes be made to current programme projects:

a) EDP Support (MERWD)

To review the CAWIDS project and establish an updated plan with budget for how best to address the project objectives. This may entail a substantial revision of the present CAWIDS concept which is based on a programmable minicomputer.

A comprehensive status report where progress to date is compared with approved plans/budgets should be prepared soonest. With the rapid development of computer technology and applications, it will be necessary to include also a brief "state-of-the-art" review of to-day's available options (hardware and software). A team composed of the future "users" and independent experts should be appointed and recommend to the GOZ and NORAD what further course of action should be taken.

b) Drilling (DDF)

To support the introduction of cable tool rigs in DDF as a means of applying a drilling technology suitable for implementation of projects based on community participation at the district level. The previously accepted proposal to rehabilitate existing LWD rigs should be reviewed, and NORAD should restrict its continued support to the more appropriate cable tool rig equipment.

It should be observed that MEWRD already has a number of cable tool rigs and agreement between the MEWRD and DDF on the rationalisation of equipment usage should be sought. MEWRD could transfer cable tool rigs to DDF and DDF could in return transfer the LWD rigs to MEWRD (see section 5.6).

NORAD's support should be made dependent on a full understanding being reached between MEWRD and DDF on this issue.

c) Operation and Maintenance

To support further development of the maintenance system for PWS, with reference to the problem areas already identified. In particular, experimental 'projects' with an alternative strategy for the 3-tier maintenance system, and for involvement of the private sector for specific tasks, should be encouraged.

NORAD should actively encourage maintenance projects as a priority area for support. Initiatives could be taken either within ongoing, integrated district programmes or in other districts where there is less strain on DDF's resources. Any drastic experiments should be undertaken in districts where no implementation pressure exists.

Areas of Possible Support

a) Applied Research

To support problem solving or specific development with reference to the objectives of the respective projects within the sector programme.

The Blair Research Institute, for example, may require relatively minor financial support in order to continue with, or take up, important research activities related to appropriate technology for water supply and sanitation.

Other institutions, such as the Institute of Agricultural Engineering, and the Department of Civil Engineering at the University of Zimbabwe, - currently establishing a Training Network Centre under the UNDP/World Bank International Training Network for Water and Waste Management Programme, may similarly be supported. In addition, NGOs involved in the development of appropriate technologies for water supply could also be considered.

Applied research should not be limited to that dealing with technology. Other research initiatives which require funding might include environmental studies, community participation and gender studies, and socio-economic investigations. Support could also be provided for workshops, seminars and publications relevant to the sector programme arising from such research initiatives.

b) Training Support

To support specific proposals which arise from the proposed manpower planning project, or from the National Training Action Plan.

The criteria for allocating funds to training projects should be based on the relevance of the training in addressing constraints or weaknesses within the on-going programme, or in having a long-term effect on the quality of manpower. For example, support for

the revision of curricula for University and Polytechnic courses to reflect the requirements of rural water supply programmes could be considered.

Consideration could also be given to the setting up of an 'internship' programme for university and polytechnic students, similar to that operated by the University's Departments of Business Studies and Accountancy. Students would work at district level on an integrated programme during the long vacation, providing the district with some additional manpower and the students with practical experience in the field.

c) Water Supply for Small Rural Centres

To support implementation of water supply in small centres serving the communal areas within districts where integrated programmes are in progress.

Programmes should be implemented preferably where a solution based on a mix of technologies is appropriate; water supply development should not be restricted to PWS only if there are other equally needy areas within the same districts. If funding is not sufficient to complete a programme, the sinking and capping of boreholes, for future development, could be considered.

A condition of funding to such projects should be that NORAD financed water supplies will provide services to all consumer groups, and have tariff levels which are affordable by the lowest income groups. The experience of existing projects in small service centres - for example, those funded by Belgian aid, should be investigated, and information be sought from the Urban Development Corporation, - responsible for infrastructural development in service centres and growth points on the type of possibilities which might be considered.

d) Family Wells

To support further development of the concept introduced by MOH, either as continued research or as a component within the district programmes.

The situation in Makoni District, where new improved water points are considered as back-up to traditional sources (family wells), highlights the need for a pragmatic and flexible approach to the strategy for water supply in rural areas. The family well concept will supplement the range of feasible options eligible for financial support.

e) Cost Recovery

To support as separate projects or within on-going district programmes, the testing or introduction of new methods of community contribution to the maintenance of PWS.

The need to address the cost recovery issue has repeatedly been discussed between the GOZ and NORAD. As Zimbabwe has now agreed to run a test project in line with the recommendations of the WHO International Working Group, there might be a need for specific support to planning, studies, pilot project implementation or other activities under the cost recovery project to be initiated by the MLGRUD.

6.3 Future Norwegian Support to the Sector

Although water supply and sanitation are important factors for improved health, they are of little direct significance for economic development. Without improving the basis for economic development, the sustainability of the installations may be threatened, and the anticipated health benefits from domestic supplies may not be attained. Assistence to the water sector should, thus, optimally be utilised as an entry point for support towards economic development.

Skills related to organisation and management of past implementation at the district, ward, village and community levels, can be utilised for additional activities where economic development would be the primary objective. Continued water development for irrigation purposes would in this context be a logical choice; knowledge of the water resources is established and irrigation will increase agricultural production.

In order to meet the above objectives, and also continue the support to the rural water supply and sanitation sector, a future programme could incorporate the following elements:

- **Comprehensive District Programmes**

  Continued implementation of district programmes, where water for productive purposes becomes an increasingly important aspect as PWS targets are fulfilled. The time horizon should be flexible, with a view to establishing fully replicable programmes within local capacity. The distribution of funds to the respective implementing ministries would depend on their roles within the expanded strategy.

- **Pilot Projects**

  Implementation of experimental projects, where the objective is to test or develop new approaches to identified sector problems. Examples would include: procedures for community participation; delegation of authority to district management; alternative management structures for district programmes; utilisation of private contractors in implementation and maintenance; alternatives to the 3-tier maintenance system; mechanisms for cost recovery, and so forth.

- Sector Management Support

Continued support towards the development of essential management functions, including manpower development. The support should be selective and be concentrated on a few areas of particular importancefor sustainability. Maintenance, including GOZ support functions; community participation, district based sector planning and information are examples of areas which could receive support.

Technical assistance should be continued only for a limited time within any particular programme area. The aim must be to provide technical assistance only until such time as Zimbabwe can recruit or transfer a suitable candidate. Generally, the provision of technical assistance should be limited to key posts, where new activities, methodologies or technologies are introduced within the GOZ system as part of the programme. The NCU is a good example of a new function where technical assistance was required to establish the unit.

With manpower development being identified as one of the most serious constraints to improved sector performance, it is logical that NORAD should be willing to support activities which could help in making the technical assistance posts superfluous. This implies that assistance should be given to the development of relevant training opportunities for the key professions.

Experiences of the current programme will provide a basis for assessing on what conditions support may be granted. Some of the areas to be considered where mentioned under 6.2 above. However, the situation with regard to rural water supply and sanitation development in Zimbabwe is still quite dynamic. Other aspects of the sector development may rank high on the priority list in one - two years time when planning of a possible new programme takes place.

Issues to be followed closely include:

- Role and authority of Rural-District Councils;
- Implementation of cost recovery policies;
- Development of the community participation concept, including MCCDWA's promotional role;
- Effectiveness of the three - tier maintenance system;
- Experiences of the "co-ordinated management" structure applied to integrated programmes;
- Availability of recurrent funds from the Government;
- Allocation and development of manpower for the sector.

APPENDIX 1

Programme Details -

ZIB 001, 003, 006 and 007

APPENDIX 1 Programme Details - ZIB 001, 003, 006 and 007

I ZIB 001: Rural Water Supply Reconstruction and Development Programme.

(Not subject to evaluation.)

Formal Agreements

The Agreement was signed in March 1981 and has later been extended several times, latest after approval by NORAD's Board in September 1985. District Development Fund (DDF) was responsible on behalf of Zimbabwe.

Objectives

To promote the social and economic development of Zimbabwe, originally through rehabilitation of rural water supplies after the war. The programme developed into new construction as the rehabilitation task was completed. Improved maintenance services were mentioned as an important aspect of the programme.

Targets

The formal documents did not specify targets for the first stages of the ZIB 001 programme. For the latest extension (1985) 500 boreholes were mentioned along with other general targets concerning training, dam construction activities, etc.

Timing

The programme commenced in 1981 and was extended in 1984 and again in 1985. The rehabilitation activities lasted upto 1983. From 1983 onwards general support to DDF's water development activities was given, incl. technical assistance, hardware procurement, recurrent funds, etc.

Financial Allocations

The allocations to DDF from NORAD comprise of: NOK 110 mill. 1981 - 84, NOK 30 mill. 1984 -85, NOK 20 mill 1985 -87.

Achievements

The evaluation in 1984 of ZIB 001 was generally positive, but due to lack of specific targets and inadequate reporting the achievements could not be fully quantified. The entry of DDF, with NORAD support, into other ministries' areas of operation has caused problems with regard to distribution of responsibilities. DDF has with support from NORAD and other donors continued to develop its maintenance capacity.

II ZIB 003: National Rural Water Supply and Sanitation Master Plan

Formal Agreements.

NORAD board approved the Master Plan project in Nov 1982 and the Agreement (NOK 13 mill.) was signed July 1983.
An additional allocation (NOK 7 mill.) was agreed upon in August 1984.

Objectives:

To provide Zimbabwe with firm recommendations for the immediate and long term development of water supply and sanitation (villages, rural service centres, urban growth points), with special consideration given to communal lands and resettlement areas.

Targets:

The NMWP to provide the GOZ with analyses and recommendations with regard to planning strategy, water demand, water resources, technical options, village participation, sanitation and health, organisation and management, manpower and training, financial and economic projections, 10 / 20 yrs development plans

Timing:

The Study contract was signed with Interconsult in April 1983, and the work commenced in July 1983. Draft reports were submitted February - June 1985, whilst the Final report dated December 1985 was submitted in August 1986, as opposed to the original schedule which specified the completion of the draft report by 15 December 1984 and submission of final reports after a short review period.

Financial Allocations:

The first bilateral Agreement(July 1983) stipulated a Norwegian contribution of NOK 13 mill. with a local component equivalent to NOK 2.2 mill to cover the estimated cost of the consultancy contract (NOK 15.2 mill.). The GOZ requested primo 1984 Norway to provide an additional contribution of NOK 7 mill. to cover cost overruns (NOK 2.8 mill.), (ii) additional activities (NOK 2 mill.) and (iii) the local component originally to be met by GOZ (NOK 2.2 mill.). The additional grant was approved in August, 1984.

Achivements

The project has been completed in accordance with objectives and with some delays/cost overruns as explained. The main recommendations of the NHMWP have been adopted in practice. Formally, the plan has not yet been approved and the sector ministries are therefore lacking the full leverage which such a

plan could have. In particular for Manpower Development the Cabinet endorsement would have made it easier to secure resources for the sector. The disputes between MEWRD and DDF concerning borehole drilling responsibilities have been a major cause of delayed approval.

Specific Items to Be Noted:

* The TOR for the NMWP Study was financed by SIDA and prepared by a team of Swedish consultants.
* NORAD invited four Norwegian international consultants to submit offer for services. A joint Norwegian/MEWRD evaluation committe recommended contract negotiations with Interconsult.
* The Agreement of July 1983 specifies the Study Organization, the main points being:
  - A Steering Committee to be formed to advise on implementation.
  - NORAD to recruit a Project Coordinator to MEWRD (was recruited through HIFAB).

Master Plan Content

As a summary and introduction to the actual content of the NMWP, the following pages have been copied from the NMWP Executive Summary:

- Summary, p. VI, VII, VIII
- Users Guide, p. 59, 60, 61, 62

These copies are shown on the next 7 pages.

S.1
OBJECTIVES

The National Master Plan for Rural Water Supply and Sanitation proposes a cost-efficient plan of investment in rural water and sanitation facilities, with the goal of providing the entire communal and resettlement area population with access to safe and adequate facilities by the year 2005.

The purpose of this Plan, commonly referred to as the 'Master Plan', is to lay the foundations for long-term development of rural domestic water supply and sanitation facilities in previously neglected communal and resettlement areas of the country.

The recommendations of the Master Plan seek to:

(i) Provide a framework within which specific programme plans can be developed
(ii) Optimize use of available resources
(iii) Establish appropriate institutional structures and financial and manpower plans for programme implementation, and
(iv) Define a policy framework to achieve enhanced health, social and economic benefits from sectoral investment.

S.2
DIVISION OF INSTITUTIONAL RESPONSIBILITIES

An immediate problem is the establishment of a rational division of responsibilities for the sector to avoid duplication and to make the best use of Zimbabwe's limited resources. A spirit of co-operation needs to be established between sector agencies so that co-ordination mechanisms can work effectively. The recommendations with regard to strengthening existing institutions are as follows:

(i) The Ministry of Local Government, Rural and Urban Development takes on the pivotal role of sector co-ordinator through a National Co-ordination Unit, and is responsible for the development of integrated regional plans.
(ii) The Ministry of Energy and Water Resources and Development will retain its position as primarily a technical and professional engineering agency, responsible for overall technical design and technical advice in the exploitation of water resources. The Ministry will be responsible for implementation of piped water schemes and siting and drilling of water points. Its future role in operating supplies and implementing community-based programmes will remain limited, but it would develop a Master Plan Office to administer the updating of the Master Plan.
(iii) The District Development Fund, through a strengthened Water Division, will retain major responsibility for primary water supply development and maintenance of rural water supplies.
(iv) The Ministry of Health will remain the lead agency for health education and rural sanitation and will continue to play a major role in the implementation of hand-dug wells and other smaller sector rural water supply programmes.
(v) The Ministry of Community Development and Women's Affairs will have the responsibility for community mobilization and training.
(iv) The National Action Committee will be restructured under the chairmanship of the Ministry of Local Government, Rural and Urban Development, and will provide the forum for inter-agency co-operation and co-ordination.

S.3
PLANNING TOOLS

Master Plan studies review existing resources and their future availability in Zimbabwe, make policy recommendations, where appropriate, for their future provision and define the parameters within which detailed water and sanitation plans will be developed. Resources reviewed include:

(i) Water resources, including hydrology, hydrogeology and water quality
(ii) Existing levels of rural water supply and sanitation provision
(iii) Rural water and sanitation technologies
(iv) Human resources, including social and cultural aspects, population, manpower development and educational needs
(v) Health risks
(vi) Environmental concerns, including soil and water conservation and livestock watering
(vii) Existing rural water and sanitation programmes, and
(viii) Institutional and financial resources.

In addition to providing a review of resources the plan develops key planning tools for use in developing more detailed plans. A 'Rural Water Supply Programme Computer Package' will be developed and submitted by the Consultants with the Master Plan. The computer programme contains an inventory of existing supplies which can be updated. This data base allows planning

variables to be altered for forecasting and plan projections.

A variety of other planning tools has also been developed, including national hydrogeological maps, techniques for dam siltation measurement, standard engineering design criteria, a design manual and social study feasibility techniques.

S.4 POLICY ISSUES IN PROGRAMME PLANNING

The Master Plan proposes a variety of policy recommendations with regard to programme planning and implementation. These include:

(i) Integration of Water, Sanitation and Health Education: Water, sanitation and health education need to be integrated to achieve maximum health benefits.

(ii) Integrated District and Provincial Planning: Sectoral planning at locality, district, provincial and national level need to integrate all forms of water provision to make the best use of available resources.

(iii) Piped/Primary Water Supply Mix: District, provincial and national level plans should make optimum use of available water resources. Generally, piped supplies will be constructed at service centres growth points and, selected resettlement areas, while primary water supplies will supply the remainder of the communal and resettlement area population.

(iv) Primary Water Supply Mix: Hand-dug wells and boreholes are the major primary water supplies suited to rural Zimbabwe. While local-level plans will contain a mix of hand-dug wells and boreholes, for reasons of cost, proximity and ease of maintenance, priority should be given, where appropriate, to well-sinking.

(v) Community Participation: It is recommended that community participation be the implementation strategy of choice in rural primary water supply and sanitation programmes. Professional implementation of this policy will entail re-orientation in methods of project generation, in project management techniques and in administrative training and support.

Community management of facilities is to be effected through trained specialist sub-committees of Village Development Committees.

(vi) Payment and Community Contributions for Water and Sanitation: It is recommended that rural consumers should contribute to the cost of rural water and sanitation to reduce the enormous costs to be incurred by the Government, and to enhance local responsibility for services. Complete, or near complete, recovery of recurrent costs is recommended as a policy objective. In practice, in the short run, this will require:

- Increasing the general water tariff of piped water to fifty cents per cubic metre and the creation of user groups for tariff collection at shared connections.
- An annual payment of Z$1 per household per annum for access to primary supplies.
- Community contribution of voluntary labour in well-sinking and latrine and headworks construction and provision of local building materials.
- Notwithstanding these contributions by beneficiaries, it is proposed that Government (with donor assistance) cover the bulk of the capital costs of rural water supply development and subsidize the provision of locally unobtainable materials for rural sanitation programmes.

(vii) Operation and Maintenance: Inadequate support for operations and maintenance can result in a massive wastage of investment, and there is an urgent need to give this the highest consideration in future programmes. Operation and maintenance of all rural water supplies require manpower development and a high level of support.

A three-tiered structure is proposed to cater for the greatly expanded need for maintenance of primary supplies. These tiers comprise:

- At Village Level: Specialized water or sanitation sub-committees of Village Development Committees and voluntary pump caretakers
- At Ward Level: Paid District Development Fund pump minders
- At District Level: District Development Fund maintenance units.

S.5

THE RURAL WATER SUPPLY PROGRAMME

A projected Rural Water Supply Programme for communal and resettlement areas to achieve complete coverage by the year 2005 is presented. This Programme, together with the Rural Sanitation Programme, serves to provide an overall indication of capacity, general direction and order of magnitude, and does not presume to replace the need for detailed national planning.

The Rural Water Supply Programme proposes the phased construction or upgrading of 576 piped supplies to service centres, growth points and selected resettlement areas and approximately 36 000 primary supplies. This will service 330 000 people with piped water and 8,6 million with access to primary supplies.

The twenty-year total annual investment cost is estimated to be Z$333 million (in 1985 prices) and, including operating, maintenance and all support costs, Z$699 million (in 1985 prices). Over the Master Plan period, a major and increasing shift of resources to operation and maintenance will be required. The recommended Programme will require a high, though gradually diminishing, level of donor assistance.

S.6

THE RURAL SANITATION PROGRAMME

To provide the entire population of communal and resettlement areas with access to adequate sanitation will require the construction of a total of 1,4 million Ventilated Improved Pit Latrines (Blair Latrines) by 2005. To achieve this target, the recommended programme will have to build up implementation capacity to around 80 000 latrines per year for an extended period. The total cost of the proposed Rural Sanitation Programme is estimated to be Z$207 million (in 1985 prices) of which the local contribution is estimated to constitute sixty eight per cent.

S.7

OVERALL FINANCIAL AND MANPOWER REQUIREMENTS

The total overall cost, over the next twenty years, of both of the Rural Water Supply and Sanitation Programmes is estimated to be Z$836 million (in 1985 prices). Cost projections are given, designating the distribution of this cost between Government, donors and beneficiaries and with optimistic and pessimistic assumptions.

Implementation of proposed programmes will require not only considerable Government investment and continuing reliance upon donor assistance, but also a greatly enhanced manpower supply. The Consultant's projections demonstrate a critical situation in some areas, particularly at senior, professional and technical levels. Recommended manpower development strategies include: systematic career planning measures to inhibit the drift from public to private sector employment; an accelerated recruitment campaign; and close monitoring of manpower development to link manpower improvements to the implementation rate of water and sanitation programmes.

S.8

STEPS IN IMPLEMENTATION

After Government approval of the Master Plan, key steps in implementation are identified for each of the six major Government agencies involved. These steps include:

(i) Restructuring of the National Action Committee
(ii) Establishment of the National Co-ordination Unit in the Ministry of Local Government, Rural and Urban Development
(iii) Establishment of the Master Plan Office in the Ministry of Energy and Water Resources and Development
(iv) Each agency to give active support to the National Action Committee and to follow the lead of the Ministry of Local Government, Rural and Urban Development
(v) Development of sector programmes and plans, using Master Plan guidelines
(vi) Implementation of sector programmes.

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ADMINISTRATIVE STRUCTURE	●																			●			●	●	●			
AGRICULTURAL DATA															●	●												
ANNUAL COST							●										●						●					
APPROPRIATE TECHNOLOGY			●				●			●													●				●	●
BACTERIOLOGICAL GUIDELINES						●																					●	
BASIN MAPS : LARGE DAM											●																	
SMALL DAM												●																
BOREHOLE : CENSUS FORMS				●																								
DEPTH			●	●	●		●																					
DESIGN			●	●			●																				●	●
SITING			●	●																								
YIELD			●	●	●		●	●																				
CAPITAL COSTS							●	●									●						●					
CATCHMENTS			●																									
CHEMICAL/PHYSICAL: ANALYSIS						●																						
CHARACTERISTICS			●			●																						
GUIDELINES						●																					●	
CLIMATE			●																									
CODE INDEX								●							●	●												
USE OF							●								●												●	
COMMUNITY PARTICIPATION							●														●		●					
COMPUTER PROGRAMMES							●								●													
CO-ORDINATION. NATIONAL UNIT	●																					●						
CULTURAL PERCEPTIONS																					●							
DAMS															●	●											●	
DONOR FUNDING							●										●											
DESIGN REPORTING																											●	
DRILLING TECHNOLOGY		●																										
DUG WELLS : CENSUS		●																										
DESIGN		●	●	●		●																					●	●
SITING		●	●																									
YIELD		●	●	●																								
DISTRICT SERVICE CENTRE								●							●													
EMPLOYMENT CATEGORIES																												
EROSION										●																		
EROSION CATCHMENT MAPS														●														
EROSION FINDINGS										●																		
EVALUATION PRESENT DESIGN PRACTICES																												●
EVAPORATION		●					●																					
EDUCATION																						●				●		
EXISTING MAINTENANCE ORGANIZATION																								●	●			
EXISTING WATER SUPPLY SITUATION															●	●					●			●				
EXPENDITURES ON WATER SUPPLIES							●										●											
FINANCIAL CONTROLS																										●		
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REPORT VOLUME NO. / REPORT TITLE / SUBJECT / ITEM	1	2.1	2.2	2.2 AI	2.2 AII	2.3	3	3 A	3.1	3.2	3.2 AI	3.2 AII	3.2 AIII	3.2 AIV	3.3	3.3 A	3.4	3.4 AI	3.4 AII	4.1	4.2	4.3	4.4	5	6	7	8	8.1
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FINANCIAL FRAMEWORK						●											●											
PROGRAMMES						●																	●					
FUTURE RESEARCH			●																	●	●							
GARDEN WATERING							●																				●	●
GEOLOGY			●	●	●																							
GEOMORPHOLOGY			●	●																								
GEOPHYSICS			●																									
GROUND WATER LEVELS			●	●	●																							
MAPPING			●	●																								
QUALITY			●	●	●	●																						
QUALITY ANALYSIS			●			●																						
RESOURCES DEVELOPMENT			●	●																								
RESOURCES IN THE RWSP							●	●																				
GROWTH POINTS (NEW RESOURCE BASED)						●									●													
GUIDELINES FOR WATER TREATMENT						●																					●	
GUIDELINES IN WATER SOURCE SELECTION						●																					●	
HEALTH																				●	●	●						
HEALTH EDUCATION																					●	●						
MEDIA AND SUPPORT																						●						
HEALTH INFORMATION SYSTEM																				●								
HEALTH STATISTICS																				●								
HYDROGEOLOGICAL FIELD INVESTIGATIONS			●		●																							
MAPPING				●																								
UNITS			●	●																								
HYDROLOGICAL CLASSIFICATION		●																										
HYDROLOGICAL/METEOROLOGICAL ZONES		●																										
HYGIENE																				●	●							
IMPLEMENTATION STRATEGIES	●						●										●				●		●					
INDUSTRIAL WATER SUPPLY																											●	●
INFRASTRUCTURE							●								●	●												
INSTITUTIONS INVOLVED IN SECTOR																					●		●		●			
INTAKE PROTECTION							●																				●	
IRRIGATION SCHEMES, HEALTH IMPACT																				●								
LAND CLASSIFICATIONS															●													
LANDSAT SATELLITE IMAGERY			●																									
LIVESTOCK							●								●	●												
WATERING	●						●								●	●												
LOCATION OF EXISTING WATER SUPPLIES															●	●												
NEW PIPED WATER SUPPLIES							●	●																				
SETTLEMENT PATTERNS							●														●							
MANAGEMENT																									●			
—ALLOCATION RESPONSIBILITIES																									●			
—BUDGETING SYSTEM																									●			
—LABOUR CONSTRUCTION PROGRAMMES																									●			
—PROCUREMENT MANAGEMENT																									●			

REPORT VOLUME NO. / REPORT TITLE / SUBJECT / ITEM	1	2.1	2.2	2.2 AI	2.2 AII	2.3	3	3 A	3.1	3.2	3.2 AI	3.2 AII	3.2 AIII	3.2 AIV	3.3	3.3 A	3.4	3.4 AI	3.4 AII	4.1	4.2	4.3	4.4	5	6	7	8	8.1
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MANPOWER																							●			●		
MEAN ANNUAL RUNOFF			●				●	●																				
METEOROLOGY			●																									
METEOROLOGICAL STATIONS			●																									
MINISTRIES' ROLES IN DEVELOPMENT	●																						●		●			
MONITORING/EVALUATION OF PROGRAMMES	●						●														●		●					
OPERATION AND MAINTENANCE																								●				
— COSTS																		●						●				
— JOB DESCRIPTIONS																								●		●		
— MANPOWER RECOMMENDED																								●		●		
— ROUTINES																								●				
ORGANIZ. STRUCTURES, MAIN AGENCIES																									●			
PIPE MATERIALS																											●	●
PLANNED PIPED WATER SUPPLIES	●						●	●																				
PLANNED PRIMARY WATER SUPPLIES	●						●	●																				
PLANNING STRATEGIES, WATER SUPPLIES	●						●										●				●							
PLANNING STRATEGIES IN SANITATION	●																						●					
POPULATION DEVELOPMENT							●		●						●													
— DEVELOPMENT FROM PAST TO PRESENT									●																			
— DISTRIBUTION									●																			
— EVALUATION OF GROWTH									●																			
— SIZE AND GROWTH									●																			
— STRUCTURE									●																			
POPULATION PROJECTIONS							●	●	●																			
— IN RESETTLEMENT AREAS									●																			
— IN SERVICE CENTRES/GROWTH POINTS								●	●																			
PRIMARY WATER SUPPLIES:																												
— EXISTING PROJECTS																					●		●					
— SOCIAL REVIEW																					●		●					
PRIMARY WATER SUPPLY DENSITY							●								●													
— EXISTING SITUATION															●													
— RECOMMENDED DESIGN CRITERIA							●																					
PRIORITY AREAS, RURAL WATER SUPPLIES							●								●													
PRIORITY SELECTION SYSTEM, LOCATIONS							●								●													
PROPOSED FINANCIAL PROGRAMME	●						●																●					
PROPOSED WATER TARIFFS																	●											
RAINFALL		●					●																					
RAINFALL STATIONS		●																										
REHABILITATION							●																					●
RESETTLEMENT PROGRAMME							●		●						●													
RESISTIVITY			●	●																								
RUNOFF		●																										
RUNOFF DISTRIBUTION		●																										
RUNOFF GAUGING STATIONS		●																										
RURAL SANITATION PROGAMME	●																						●					
RURAL SERVICE CENTRES								●	●						●													

SUBJECT / ITEM \ REPORT VOLUME NO.	1	2.1	2.2	2.2 AI	2.2 AII	2.3	3	3 A	3.1	3.2	3.2 AI	3.2 AII	3.2 AIII	3.2 AIV	3.3	3.3 A	3.4	3.4 AI	3.4 AII	4.1	4.2	4.3	4.4	5	6	7	8	8.1
REPORT TITLE	EXECUTIVE SUMMARY	HYDROLOGY	HYDROGEOLOGY	ANNEX I TO VOLUME 2.2	ANNEX II TO VOLUME 2.2	WATER QUALITY	RURAL WATER SUPPLY PROG	ANNEX TO VOLUME 3	POPULATION DEVELOPMENT	SOIL AND WATER CONSERVATION	ANNEX I TO VOLUME 3.2	ANNEX II TO VOLUME 3.2	ANNEX III TO VOLUME 3.2	ANNEX IV TO VOLUME 3.2	INVENTORY OF EXISTING WATER SUPPLY SITUATION	ANNEX TO VOLUME 3.3	WATER TARIFF STUDY	ANNEX I TO VOLUME 3.4	ANNEX II TO VOLUME 3.4	OUTLINE OF A HEALTH PROFILE	SOCIAL STUDIES	HEALTH EDUCATION	SANITATION TECHNOLOGY	OPERATION AND MAINTENANCE	MANAGEMENT	HUMAN RESOURCES DEVELOPMT	DESIGN MANUAL	WATER ENGINEERING DESIGN
RURAL WATER SUPPLY PROGRAMME (RWSP)	●						●	●																				
RSWP : ALTERNATIVE SCENARIOS							●	●																				
SAMPLING TECHNIQUE						●																						
SANITATION, CURRENT DISTRIBUTION																					●		●					
SANITATION USAGE																					●		●					
SEDIMENT TRANSPORT										●																		
SERVICE CENTRES, GROWTH POINTS							●								●													
SETTLEMENT PATTERNS							●		●																			
SOCIAL CULTURAL ASPECTS																					●							
SOCIAL STUDIES																					●							
SOCIAL STUDIES METHODOLOGY																					●							
SOCIO ECONOMY																	●	●	●									
SOIL EROSION	●									●																		
SOIL SILTATION	●									●																		
— FINDINGS IN SILTATION STUDY										●	●																	
— MAPS BASINS LARGE DAMS												●																
— MAPS BASINS SMALL DAMS													●															
— METHODOLOGY SILTATION STUDY										●	●																	
SOURCE SELECTION GUIDELINES						●																				●		
SPRINGS		●																								●	●	
STATE OF ART REVIEW																							●					●
STANDARD DRAWINGS																											●	
SURFACE WATER AVAILABILITY		●					●	●																				
QUALITY ANALYSIS						●																						
QUALITY GUIDELINES						●																					●	
TECHNOLOGICAL OPTIONS	●		●				●																●				●	●
TRADITIONAL SOURCES			●																				●					
TRAINING																							●	●		●		
TREATMENT GUIDELINES/METHODS						●	●																				●	●
TURBIDITY						●																						
UNIT COSTS CRITERIA							●																				●	
WALKING DISTANCE							●																				●	
WATER ALLOCATIONS	●																●						●					
WATER CONSUMPTION AND DEMANDS							●	●															●				●	●
WATER DESIGN STANDARD							●																				●	●
WATER PRICING																	●											
WATER RELATED DISEASES																				●								
WATER SAMPLING					●																						●	
WATER SUPPLIES CURRENT DISTRIBUTION															●								●					
WATER SUPPLY COSTS																	●											
FINANCE																	●											
POLICY	●																●											
SCHEMES															●		●											
STATIONS															●		●											
STRATEGIES	●																●						●					

III ZIB 006: Borehole Water Supply Programme in Mashonaland.

Formal Agreements

NORAD approved the request from GOZ in October 1984 and the resulting Agreement for Phase I (NOK 28 mill.)was signed 31st May 1985.
Subsequent phases were formally agreed through exchange of letters:

* Phase II covering parts of the Manicaland Province was approved by NORAD medio 1985 (NOK 10 mill., also utilising savings on the Phase I)
* Phase III was approved by NORAD medio 1986 (NOK 11 mill.), providing extentions to the Phase II programme

Objectives and Targets:

Phase I, as a drought relief programme to

* provide 400 ground water wells in rural areas (hand pumps) to satisfy normal standards and functional requirements;
* encourage Community Participation, including the women's role in the Operation & Maintenance activities, recognizing the conflict with the planned implementation pace
* provide a coordinator in order to facilitate the implementation of the programme
* provide consulting services for planning and implementation activities

Phase II represents a continuation of Phase I into Manicaland as an integrated programme with provision of additional ground water wells, stronger emphasis on Community Participation, Operation & Maintenance and Health and Hygiene (including latrine construction) and other support activities as recommended in the NMWP, including the involvement of the Local Administration (District Level).
Phase III represents a continuation of Phase II with a combined target of 250 drilled wells, 250 hand dug wells and 5000 latrines. Women as a special target group/beneficiaries is emphasised in this Phase.

The total programme (Phase I - III) has been executed under the responsibility of the MEWRD, utilizing the services of an international Consultant (Interconsult).

Timing:
Phase I was started second half of 1984 and completed by mid 1985, employing the services of a drilling contractor (from Botswana).
Phase II covering the financial year 1985/86 with most disbursements originally expected before end 1985.
Phase III to cover period up to new agreement for ZIB 007 put in force around March 1987 (i.e. most of FY 1986/87).

Achivements:
Phase I completed according to targets.
Phase II/III completed according to targets, except for a shortfall in latrine construction (implementation rate reached planned level during Phase III). Phase II/III took longer time and implementation was more costly than originally envisaged.

IV ZIB 007: Sector Support for Water Supply and Sanitation

Formal Agreement

The programme request was approved by NORAD ultimo 1986, whilst the Agreement was signed in December 1987 for a period of approximately three (3) years. Total contribution: NOK 180 mill.

Objectives:

Overall Objectives:
- improve health conditions
- reduce the physical burden of women and children
- improve economic conditions

Specific Objectives:
- improvement of WS in terms of reliability, quality, quantity, and accessability
- improvement of sanitation through latrine construction
- motivating for behavioural changes through health education
- promoting community responsibility

Prerequisites:
- inter-ministerial cooperation
- user participation
- development of local human and material resources to ensure sustainability

Targets:

No quantified targets are specified in the Agreement. However, areas open to support comprise i.a.
* technical assistance,
* personnel development/training,
* O&M system development,
* implementation of w/s - san programme in specific geographical areas (to start within one - two districts)

Specific targets to be planned and agreed during annual consultations

Timing:

The Agreement covers the three year period from 1987 to mid 1990. The procedures agreed for annual approval of plans specify the following planning cycle: Project proposals by January , to be agreed during annual meeting in February. Progress report by September, to be basis for joint review in September/ October. Annual meeting to approve plans for subsequent Financial Year.

Financial Allocations:

Total for agreement period NOK 180 mill., to cover all activities incl. technical assistance. The following tentative breakdown for the three year period shows allocations to respective actors (and thereby to main activities):

*	MLGRUD:	NOK 14.9 mill.,
*	DDF :	NOK 66.7 mill.,
*	MEWRD :	NOK 36.2 mill.,
*	MCDWA :	NOK 4.9 mill.,
*	MOH :	NOK 9.2 mill.,
*	Consult. services :	NOK 8.6 mill.,
*	Contingencies/ price increase :	NOK 39.5 mill.

Annual distribution expected to have similar profile for all years.

APPENDIX 2

Terms of Reference for Evaluation ZIB 403:

Rural Water Supply in Zimbabwe

APPENDIX 2 Terms of Reference for Evaluation ZIB 403 : Rural Water Supply in Zimbabwe (27.04.1988)

1.00 Background

From the very start of the Zimbabwe/Norway development assistance cooperation in 1981, the Norwegian government has supported the development of rural water supply in Zimbabwe through the following programmes/projects:

ZIB 001: Rural Water Supply Reconstruction and Development Programme (1981-87)
ZIB 003: National Master Plan for Rural Water Supply and Sanitation Programmes (NMWP) (1984-86)
ZIB 006: Mashonaland drought relief borehole programme (later named Manicaland integrated rural water supolly and sanitation project) (1984-87)
Zib 007: Rural water supply and sanitation sector programme (1987-).

ZIB 001 was evaluated in late 1984. It is now the intention of the Ministry of Development Cooperation, Norway (MDC), in full agreement with the Government of Zimbabwe, to proceed with the evaluation of the Norwegian assistance to the rural water supply and sanitation sector.

The evaluation shall comprise:

- all relevant aspects (see 3.10 and 3.20) of the completed projects ZIB 003 and ZIB 006
- a review of the planning model for ZIB 007 (see 3.30), as seen in the light of national plans and priorities and the experience gained through the previous projects, and in particular through the Manicaland IRWS & S project.

2.00 Objectives

The purpose of the evaluation is to provide a comprehensive project/programme review and analysis, to be used by the authorities in Norway and Zimbabwe in the following up of ongoing projects as well as in the planning of future sector development assistance.

The evaluation will in addition provide inputs to the country study of Zimbabwe. The country study will provide informations and recommendations for future cooperation between Norway and Zimbabwe.

3.00 Tasks to be carried out by the Consultants

The work shall include, but not necessarily be limited to, the following points:

3.10 ZIB 003 - National Master PLan for Rural Water and Sanitation

The Consultants shall:

i) briefly describe the main features of the Master Plan and the Plans of Operation;
ii) assess whether the project has been carried out in accordance with project plans, objectives and budgets;
iii) assess whether the project plans, objectives and budgets were relevant and in accordance with the actual needs. Special emphasis shall be put on procedures and administrative practices in relation to cooperation and coordination bewteen the Zimbabwean Government, Donor and Consultant;
iv) identify possible problem areas and/or positions of dependency on other aspects of national development;
v) assess the Master Plan's adaptability to possible major changes in national development conditions;
vi) assess the effectiveness of the Master Plan with regard to strategies for and planning of rural water supply and sanitation infrastructure, as well as to the coordination and integration of related rural development activities.

3.20 ZIB 006 - Mashonaland drought relief borehole programme and Manicaland integrated rural water supply and sanitation project

ZIB 006 comprises two projects with partly different approach to planning, strategy and implementation. This may have an impact on the organisation and presentation of the below outlined work.

The Consultant shall:

i) review the projects' activities and achievements in relation to goals, production targets and inputs as these are defined in project documentation;
ii) assess whether the projects have been implemented in accordance with national policies within the sector and to what extent it has been coordinated with government activities in general;
iii) determine whether plans are followed and budgets adhered to and suggest likely reasons for possible discrepancies;
iv) assess the projects' impact (social, economic, cultural, ecological etc.) and whether the target groups are reached;
v) assess whether project design, implementation and operation is in accordance with needs and wishes of the target groups, and whether target groups are reached;
vi) assess possible unexpected positive or negative implications of the projects;
vii) consider the adequacy of institutional and administrative procedures, communication between the authorities and the project personnel, training of local staff members, and progress towards full assumption of responsibilities by local institutions and persons;

viii) discuss choice of technology of machinery, equipment, and materials, as well as the projects' organisational model, in view of foreign exchange requirements, need for expatriate personnel, employment creation, operation and maintenance;
ix) assess the adequacy of designs, quality and durability of physical structures in view of existing and planned methods of operation and maintenance, and give possible alternative suggestions.

3.30 ZIB 007 - Rural Water Supply and Sanitation Sector Programme

The Consultant shall:

i) describe the planning model and the chosen strategy for implementation;
ii) assess point i) in relation to the NMWP and the implementation strategies endorsed by the Zimbabwean National Action Committee;
iii) assess point i) in the light of the experience gained in the previous programmes, in particular ZIB 006 but also ZIB 001;
iv) discuss point i) in relation to the need for equipment, machinery (investments and maintenance), personnel requirements, training and education, community participation, etc;
v) discuss point i) in the light of, and how it may contribute to integration and coordination of the various district development activities; such as water supply, sanitation development, institution building, environmental protection, etc.

3.40 Recommendations

On the basis of the findings and conclusions of the above review/evaluations the Consultants shall discuss options for following-up actions to ongoing programmes as well as for planning of future Norwegian support to the rural water sector in Zimbabwe.

4.00 Premises - Implementation - Reporting

4.10 Premises

The evaluation will be based upon:

- desk studies of project documentation and related papers;
- talks/interviews with government officials and project staff in Zimbabwe as well as in Norway, and
- field visits to selected projects in Zimbabwe.

The fieldwork itinerary will be decided by the evaluation team after consultations with MDC resident representative and the Zimbabwean authorities.

4.20 Work programme

The evaluation will be organised in 3 phases as follows:

I - Collection and processing of information;
- planning of the field studies;
- preparation of a brief Inception Report, including possible comments to the TOR, detailed plans for the field studies, and a revised budget for the evaluation.

II - Field studies.

III - Preparation of Draft Final Report;
- hearing round in MDC/NORAD;
- completion of final report.

The Draft Final Report should be submitted to MDC by 1 November 1988.

4.30 Time limits

The person-hour requirements and the timing for presentation of the Reports will be stipulated in the Consultancy Agreement.

4.40 Implementation Team

To be identified in the Consultancy Agreement.

4.50 Language

All reports shall be presented in English.

Supplementary Note : Changes Agreed at Inception Report Seminar, Oslo, 25.10.88

1. TOR should be applied and understood in light of the Consultant's approach as described in the Inception Report and as elaborated on during the Seminar. This implies major emphasis on aspects of value for current and future NDA to the sector and correspondingly less emphasis on retrospective evaluation.

2. Review and assessment of the three programmes shall give MCD an answer as to how they have been executed, including resources input, results, mahjor effects and most important impacts. The most important objective shall, however, be to document experiences (positive and negative) and to identify unresolved sector issues likely to affect future programme performance and pattern of NDA.

3. Analyses shall be aimed at developing options for i) redirection of current programme support (if necessary), and ii) future support, with particular reference to existing constraints and problems. The Consultants will propose alternative ways of addressing identified shortcomings.

4. Scope of work cannot be restricted on the assumption that some of the findings may be contraversial or politically sensitive. The Consultant will take care not to argue for or against solutions where the Government has a major issue to be resolved. The implications of NDA in terms of affecting Government's possibility to resolve such problems will be pointed out.

5. Aspects to consider were brought up during the Seminar. A particular note was taken of:

   - gender relationship rather than women's role
   - use of water for productive purposes
   - merits of programme versus project approach
   - basis for sustainability of NDA interventions
   - operational status of installationds
   - reasons for non-approval of NMWP
   - HRD required for replicability and sustainability.

6. Field work will be concentrated in districts where the integrated approach was introduced under ZIB 006 and in districts where maintenance status can be assessed. The role of both Government and community has to be looked into.

APPENDIX 3

List of Representatives

and

Officials Interviewed

APPENDIX 3 List of Representatives and Officials Interviewed

Ministry officials in Harare

S Stoveland	NCU Co-odinator/MLGRUD
J Engstrøm	NCU/MLGRUD
A Hammer	NCU/MLGRUD
J Holland	MEWRD/NAC
B Jones	MEWRD/NAC
M Sharp	MEWRD
G Grepstad	MEWRD
C Pasipamire	Community Mobilsation Advisor, MCCDWA/NAC
B Sibanda	Community Mobilisation Advisor, MCCDWA/NAC
A Zhou	Community Mobilisation Co-ordinator MCCDWA
J Mvududu	Chief Health Inspector, MoH
P Cross	Advisor, MoH
P Morgan	Blair Research Institute, MoH
M Kumalo	MFEPD
E Bamu	Assistant Secretary, MFEPD
V Mudege	DDF
P Arvidsson	DDF
Z Chariza	Assistant Training Officer, DDF

NORAD Office, Harare

G Boe	Resident Representative
R Kove	Project Officer, Water

Interconsult Office, Harare

A Narozny	Resident Manager
D Heywood	Hydrogeologist
I Clifford	Hydrogeologist
O Paulsen	Managing Director (head office)
K Haukland	Civil Engineer (head office)
M Taremba	Community Participation Officer
J Nilsen	Systems Analyst

Other persons in Harare

R Lister	Department of Civil Engineering, Harare Polytechnic
H Delfth	Department of Civil Engineering, Harare Polytechnic
G Killilea	Managing Partner, Nicholas O'Dwyer & Partners, Consulting Engineers
G Longley	Stewart Scott NCL, Civil Engineering Consultants

M Norman	Stewart Scott NCL, Civil Engineering Consultants
J Johnston	Chairman, Department of Civil Engineering, UZ
B Synnerholm	Programme Officer, SIDA
A Petersen	Programme Officer, DANIDA

ARDA/PPU CARD Programme, Masvingo/Gutu

M Moyo	Deputy Project Co-ordinator
S Mutandi	Senior Planning Officer
H Dzapata	District Health Inspector, MoH
J Kaonta	Water Supply & Sanitation Officer

Manicaland Province

D Browne	Provincial Water Officer
P Evans	Planning Advisor/Consultant
N Zondo	Advisor to PHI, MOH

Mashonaland Central Province

J Sturgeon	Provincial Water Officer

Makoni District

E Nyagwaya	District Administrator
D Murimba	Senior Administrative Officer
J Maphosa	District Accountant
M Mataringe	Regional Health Inspector
T Nzirawa	District Health Assistant
H Makuyana	DDF Clerk
S Gonzo	Field Officer/Water, DDF
C Gwasira	Deputy DCDO
N Musiyazviriyo	Community Mobilisation Officer
C Manyika	Agritex Officer
J Matiya	Local Government Promotion Officer

Chipinge District

Z Dhliwayo	District Administrator
J Nyaguse	Senior Administrative Officer
A Chibvura	Local Government Promotion Officer
W Mhlanga	Local Government Promotion Officer
P Runganga	Principle Health Assistant
F Choto	Senior Health Assistant
C Bhila	Ward Community Co-ordinator
G Chikwanda	Ward Community Co-ordinator
P Chizororo	Field Officer/Water
F Moyo	Agritex Officer
D Gohora	District Health Inspector

J Gwata	Community Mobilisation Officer
M Jamba	Builder trainer (consultant)

Murewa/UMP District

S Samunda	Senior Administrative Officer
T Zinyama	Field Officer/Water (UMP)
D Muhombe	Field Officer/Water (Mangwende)

Mount Darwin District

M Majongwe	District Administrator
R Mbetu	Field Officer/Water
J Kadzinga	District Community Development Officer
C Murine	Local Government Promotion Officer
E Mayenderinge	Local Government Promotion Officer
F Nachyamombe	Regional Agritex Officer
	District Health Inspector

Others

A Kruger	Formerly NORAD Office in Harare
F Kvaerneng	Interconsult (previously Harare)

The list is not exhaustive; several people interviewed in connection with the CAWIDS project, for example, are not included.

APPENDIX 4

Fieldwork Programme in Zimbabwe -
7th November to 10th December 1988

APPENDIX 4 **Fieldwork Programme in Zimbabwe - 7th November to 10th December 1988**

Week 1 : 7th - 13th November

- Introductory meeting with Ministry of Finance, Economic Planning and Development
- Agenda planned and contacts made for meetings with relevant officials in Harare
- Meetings with representatives of:
  - Ministry of Local Government, Rural and Urban Development
  - Ministry of Community and Co-operative Development and Women's Affairs
  - Ministry of Energy and Water Resources and Development
  - NORAD Office in Zimbabwe
  - Interconsult A/S
  - Stewart Scott NCL, Civil Engineering Consultants
  - Department of Civil Engineering, University of Zimbabwe
- Finalisation of district fieldwork programme
- Meeting of Evaluation Team and Reference Group members
- Departure to Masvingo

Week 2 : 14th - 20th November

- Meeting with representatives of ARDA/PPU CARD Programme (Gutu District - GTZ), and visit to project office in Gutu
- Introductory and follow-up meetings with district officials and Planning Advisor/Consultant in Makoni District, Manicaland Province
- Four days fieldwork in villages in Chiduku Communal Area
- Meeting with Interconsult A/S, Harare
- Meeting with NCU Co-ordinator, Harare
- Meeting with representatives of DDF, Harare

Week 3 : 21st - 27th November

- Introductory and follow-up meetings with district officials in Chipinge District, Manicalalnd Province
- Four days fieldwork in villages in Ndowoyo Communal Area
- Meeting with Provincial Water Officer, Mutare
- Meetings in Harare with representatives of:
  - DDF
  - Department of Civil Engineering, Harare Polytechnic
  - Nicholas O'Dwyers & Partners, Consultant Engineers

Week 4 : 28th November - 4th December

- One days fieldwork in Murewa District, and meetings with district officials
- Introductory and follow-up meetings with district officials and PWO in Mt Darwin District, Mashonaland Central Province
- Three days fieldwork in Kandeya Communal Area

Week 5 : 5th - 11th December

- Meeting with representatives of Ministry of Health, Harare
- Meeting of Evaluation Team and Reference Group
- Report-back meeting to NAC
- Preparation of draft outline of evaluation report, schedules and responsibilities for report writing

APPENDIX 5

Annotated

Bibliograpgy

APPENDIX 5 Annotated Bibliography

1. Crash Programme - Mashonaland: Final Report Vol 1. Interconsult, Harare. December 1985

Apart from recording achievements in meeting physical targets, the Report discusses the results of preliminary evaluations undertaken at the end of the implementation phase. The evaluations included in-depth case studies at selected sites and a follow-up questionnaire to 183 sites. Indications were that there were high levels of usage of both boreholes and washing stands amongst the estimated 274 000 potential users, but despite generally positive community responses to the programme, there was conflict between communities and the contractors in many cases, in respect of 'siting expectation'.

Recommendations are made for improving community participation, which is identified as a key component for the long-term success of water supply projects. Very much in line with NMWP proposals, suggestions include the establishment of user committees, integrated micro-water planning, increased pre-siting liaison and further development of training and education materials.

2. Manicaland Integrated Rural Water Supply and Sanitation Programme;Final Report. Interconsult, Harare. January 1987

This Report makes a number of recommendations, based on assessment of the constraints faced by the consultants. Many problems are reported to have been caused by inadequate planning and co-ordination, together with the lack of a workable organisational structure. Despite the concept of community participation being embodied in the programme, it is concluded that this was often de-emphasised in practice, and that technical considerations over-rode the need for proper community mobilisation and training. The formulation of models for programme implementation is recommended, as well as the scheduling of regular meetings between implementing agencies.

3. National Master Plan for Rural Water Supply and Sanitation: Social Studies (Vol 4.2). Interconsult, Harare. December 1985

Volume 4.2 of the NMWP represents the first national survey of attitudes towards, and usage of, water points and latrines. The Report reviews the existing literature and includes results from a national socio-economic survey of 3 340 communal area households, as well as in-depth observational studies and an anthropological case study of water supply and sanitation in one rural area. The survey seeks to contextualise the need for water and sanitation facilities within the overall development process and prevailing socio-economic conditions in communal areas.

Results indicate that domestic water provision is perceived as a priority need in communal areas, where only one third of house-holds had access to an improved supply. High levels of usage of

shallow wells highlighted the need for well protection components to be incorporated in programme activities. Overall, usage of unimproved sources was high, particularly for laundry and bathing purposes, and during the wet season. Water for gardens and cattle is viewed as important, but not as a priority. Only 22% of households surveyed had access to some sanitation facility, but whilst regarded as important, latrines were perceived by communities to be less urgently required than water supplies. Assessment of hygiene practices revealed that many risk behaviours were apparent, particularly in respect of handwashing, pollution of water and disposal of water and children's faeces. It also noted that the impact of water supply programmes on improvements in health status depends not just on stimulating usage of improved water points, but also on promoting usage of increased amounts of safe water for personal hygiene.

4. **Report of the Socio-Economic Survey of the Norwegian Aided Rural Water Supply Programme Implemented by the DDF: Summary of Major Findings and Recommendations. Zimconsult, Harare. October 1984.**

Undertaken as part of an evaluation of NORAD assistance to the DDF, the socio-economic survey was conducted with some 400 households in 17 areas of Zimbabwe. Field observations and discussions with local community leaders were also included. The survey was undertaken at a time when the nation was experiencing a severe drought, and highlighted the need for adequate water supplies in rural areas. There was a high level of demand for domestic water supplies, but additional water for gardening was also required. Generally, borehole water was prefered to that drawn from an unprotected source, and installation of them had reduced the distance travelled to a water point by as much as 50% in most cases.

The survey also revealed wide interest amongst households for improving sanitation facilities, if cement was provided for them. Analysis of illness episodes in the households indicated that the incidence of water related diseases was significantly related to the type of water installation utilised. Amongst recommendations made for continuing support to the sector, the need to extend community participation in all programmes was noted.

5. **Knowledge Attitudes and Practices in relation to Schistosomiasis in a RuralCommunity. Taylor, P.et al. Social Science and Medicine 24:7, 1987**

The article discusses the results of a KAP study undertaken in Zimbabwe in a communal area in which schistosomiasis was endemic. The study, conducted with 349 households, confirmed the extent to which different water points are used for different activities. Whilst favoured for domestic water, protected sources are unsuitable for a major household activity, washing clothes, and households continued to use the river for this activity. Although community knowledge of symptoms of schistosomiasis, and understanding of it as a major health problem, was high, transmission of the disease was not seen as directly linked with

contact with infected sources. The authors note that long term control will only be achieved through the combined promotion of improved sanitation, water supplies and health education.

6. Children and Women in Zimbabwe: A Situation Analysis. UNICEF, Harare. July 1985.

This report discusses water and sanitation in relation to the health of women and children. Existing figures on the distribution of water points in communal areas, water collection practices, access to sanitation and hygiene practices are drawn together. The extent to which latrine construction is linked to households' economic status is noted. The report concludes that the availability of safe water supplies in sufficient quantities would be the single most important labour-saving device for women, as well as a significant health supporting intervention. Recommendations are made in respect of improving the slow progress of water and sanitation programmes through support to and better co-ordination of the Ministries and NGOs involved.

7. Willingness to Pay for Rural Water: The Zimbabwe Case Study. Preliminary draft. Zimconsult, Harare. December 1988

Undertaken for the World Bank, this report discusses the results of a survey undertaken with 800 households in two communal areas. Questionnaire interviews were supplemented with observations of usage of existing water points and of water utilisation within households, and with focus group discussions. Preliminary statistical analysis of the data confirms results from other studies relating to households' continued use of unprotected water points, even where protected sources are available and the lack of direct linkage between distance to a given water point and usage of it.

Results show that water is considered to be a free resource, and that communities anticipate extensive assistance from donor and the government in improving the water supply. Communities appear to accept that they should make contributions to maintenance, but overall, willingness to pay is very limited, particularly in the current situation where the installations are not regarded as belonging to them.

8. Patterns in Water Use. S Saugestad University of Tromsø, Norway. Preliminary version, May 1989.

A report on an anthropological study undertaken in a communal area in Manicaland between March and July 1988 has recently been completed. The study included a survey of the Water Committees in one ward as well as observational data on water use and water collection at three water points. The report will highlight a number of issues, including constraints within the present 3-tier maintenance system, the role of women in sector programmes and the extent to which health education messages are changing water usage behaviours.

APPENDIX 6

Case Study No. 1

Makoni District

(Maungwe District Council)

APPENDIX 6 Case Study No. 1

Makoni District (Maungwe District Council)

Manicaland Province

The Manicaland Integrated Water Supply and Sanitation Programme was implemented in Makoni District (as well as Chipinge District: See Case Study No. 2). Activities were undertaken in 28 wards within the five communal areas of the District - Chiduku, Makoni, Tanda, Weya and Chikore.

Makoni District is located between Harare and Mutare, with the main road passing through the centre. The prime land along the line of road is given over to commercial farming areas, whilst the outlying communal areas are in natural regions III and IV. The 1982 Census gives a population figure of 141 979 for the communal areas, with a high population density of 52,33 per sq. km.

The programme constituted the first attempt to integrate water supply, sanitation and health education as recommended in the NMWP. The objectives of the programme were not clearly spelt out originally. For the extended programme (negotiated in 1986) physical targets were specified up to mid 1987 as the means to improve health and general living conditions in the rural areas. These targets are given below for comparison with actual achievements.

The original programme (ZIB 006 for Manicaland) covered the period September 1985 to June 1986. It was later extended to cover also financial year 1986/87. From July 1987 the activities were continued as part of the new sector programme supported by NORAD (ZIB 007).

Project Organisation

The programme was undertaken by the MEWRD (up to 1 January 1988). This Ministry had retained a firm of consultants, Interconsult A/S (IC), to organise and supervise most of the work. As from 1988 coordination of the programme activities passed to MLGRUD, according to the implementation strategy adopted by the National Action Committee.

Project planning was formally the responsibility of the MEWRD. In practice most of the planning work was carried out by IC. The district authorities (i.e. the District Council in cooperation with the DA) were given responsibility for priority setting and site selection. The consultants were required to plan and implement in close cooperation with the concerned line ministries and district authorities.

Implementation covered primary water supplies (PWS), latrine construction, and health education. MEWRD was responsible for actual borehole drilling whereas IC organised community participation and involvement of Government extension workers.

Lutheran World Federation was contracted by DDF to carry out well sinking. As SIDA had granted support for a sanitation programme in Manicaland, this component was gradually taken over by MOH except for specific managment and logistics support by IC.

The consultancy agreement required IC to ensure interministerial cooperation, to liaise with the local administration and to involve local communities in project implementation. The programme was required to be integrated into district, ward and village level development plans. 'Site Meetings' were held from the beginning and District Coordination meetings were initiated in early 1986. The MEWRD had a Programme Coordinator based in Harare, seconded by NORAD to support the Ministry's management and to maintain official contact with the various Government agencies. The Coordinator was transferred from MEWRD to MLGRUD's provincial office in January 1988 as part of the management restructuring under the new sector support programme.

Implementation Activities

Community mobilisation was undertaken by a special section of IC's programme staff. Upon receipt of the District's list of priority sites, the staff would initiate the water point presiting. Procedual guidelines were drawn up, although time and other constraints prevented their full implementation in some cases. The procedures included:

- Ward level meeting with the Councillor, other local leaders (both modern and traditional), and the villagers where the objectives and contents of the programme were explained.
- Ask a village to identify specific sites for a primary water supply. Three alternative sites could be proposed for each water point.
- Initiate selection of a local Water Committee (VIDCO sub-committee) and provide training for members/caretaker in basic maintenance.
- Extend health education, pointing out the need for proper water use, hygiene, and importance of family latrines.

Primary water supplies as supported by the programme could be either boreholes or deep wells. The choice between these options at each proposed site was made after hydrogeological investigations by IC's siting team. Although overall allocations for the two types were made in the programme budget, changes occurred as a result of the investigations. However, there seems to have been a bias towards meeting the expected ratio between the two as per the budget. MEWRD was responsible for drilling of boreholes whereas well digging was contracted out to the LWF.

Latrine construction started as a fully NORAD supported activity with MEWRD responsible for materials procurement and IC responsible for implementation in cooperation with MOH. When the SIDA supported programme became fully activated the MOH took on a stronger (and almost independant) role in implementation. IC has however continued to provide training and logistics support to MOH and a builders' trainer.

Health education constituted a part of all communication support to the local communities from presiting through to the water point opening ceremony. No systematic education campaigns were launched, however, and the access to extension workers was hampered by the uncertainties caused by the transfer of Village Health Workers to MCCDWA, becoming part of the new Village Community Workers (VCW) cadre. MCCDWA was not formally involved in the ZIB 006 Programme.

The programme provided extensive logistics support to the implementation activities. MEWRD was responsible for procurement and transport. Due to commodity shortages and late delivery of transport equipment this support was not always forthcoming. IC also intervened to provide stop gap measures during critical periods. Private transporters had to be used for some time. The programme was further required to support training activities. Due to lack of adequate budget provisions and delays in payment, this field was severly constrained until the situation was rectified in 1986. Where Government procedures proved to be cumbersome forward planning was needed to resolve the support problems. This was not successful in all respects, particularly with regard to the supply of cement.

Achievements

The programme which started in 1985 is still continuing under the current sector programme ZIB 007. Seven wards in Makoni Communal Area and 1-2 wards in Chiduku are still to be covered. It is therefore appropriate to include some of the achievements made after the ZIB 006 was formally completed in 1987. The revised management structure under coordination of the MLGRUD has, however, been in force only since January 1988 and it is not relevant to evalute results at this early stage.

Table 1 below sets out targets and completion rates for the Makoni District as per the Project Document of 1986, MEWRD's Annual Programme Report for 1986/87 and IC's handing over report of August 1988. The number of boreholes refers only to those successfully sited, but it should be remembered that the success rate was more than 90 % in Makoni. Some further comments on the quoted figures are given below.

Table 1 Targets and Achievements

Activity	Targets June 87	Achievements June 87	Achievements July 88
Water supply installations:			
- Boreholes	180	196	287
- Wells	250	247	385
Latrines:	4 000	810	3 635
VIDCO sub committees established:	-	-	682
Pumpminders in post:	n/a	-	12

If figures for the first year of programme activities are also incorporated, the extent to which implementation capacity has improved over the 3 year period is obvious. Initial delays were due partly to lack of clear programme procedures and partly to the time required to train staff at all levels and initiate mobilisation. On the whole, the achievement of objectives in the water supply compononent has been impressive.

It may not, however, be possible for the newly established interministerial organisation to replicate this level of achievement. Resolution of mobilisation and procedural constraints may not be as straight forward within this structure as was the case for the mere streamlined MEWRD/IC organisational model.

The success of the latrine construction programme during 1987/88 arose as a result of the clarified, and thereby recognized, role of MOH under the SIDA financed programme. Under this programme MOH also constructed a number of shallow wells fitted with bucket pumps in the distrct. Approximately 150 of these wells exist at present.

The average construction cost of a borehole in the two programme districts (Makoni and Chipinge) was Z$ 7,500 and for deep wells approximately Z$ 2,000 (Makoni). The Makoni boreholes were actually substantially cheaper as the operation costs of MEWRD in Chipinge were much higher - the average depth of a borehole in Chipinge was 90-100 mts, compared to 30-40 mts in Makoni).

Two constraints were repeatedly pointed out; transport capacity and the supply of cement. Both affected progress at a stage when communities had already been mobilised. A continuing failure to meet commitments by the GOZ will demotivate both Government workers and community members.

It is important to note that NORAD support through DDF (previously ZIB 001, now part of ZIB 007) has facilitated improvements of the maintenance system in Makoni District. The substantial increase in number of water installations has, however, put a considerable strain on the maintenance organisation.

<u>Field Findings</u>

The field investigations in Makoni District were carried out in Chiduku (Nehanda, Mutombwe, Matowe and Mhezi Wards) and in Makoni East (Rugoyi Ward). Three completed well sites and one completed borehole site were visited, as well as one well under construction. Discussions were held with Water Committee members, VIDCO members, a female pumpfitter employed by the Lutheran World Federation and a pumpminder. Whilst this is certainly limited coverage, time constraints prevented more extensive fieldwork in the district. The fact that the field team operated independently and selected water points on a completely random basis increases the likelihood of findings being indicative of the situation in the District as a whole.

In addition to the findings of the field investigation, observations arising from an anthropological study conducted in Chiduku area are also incorporated in this section. The study was undertaken from March to July 1988 (Sidsel Saugestad: Patterns in Water Use) and included a survey of all Water Committees in one ward (Pasipanodya).

Whilst Water Committees had been established for the four completed water points visted, members did not have a thorough understanding of their role within the 3-tier maintenance system. Caretakers particularly felt themselves to be poorly equipped to undertake the basic tasks of greasing and tightening nuts assigned to them. They had not been provided with spanners, due to the DDF district office being supplied with incorrect sizes, and Committee members had received only limited training.

Despite the general requirement that three of the four members should be women, most Water Committees were chaired by men. Detailed investigation of the composition of the Committees undertaken in the Water Committee survey also revealed that the female members tended to be those whose husbands were migrant workers, or those who were widowed. This implies that women nominated to the committees are those whose de facto position as heads of household reduces the liklihood of family conflict as a result of their assuming a 'male' role outside the household.

Field observations indicated that Chairmen were also often men already in leadership positions in the village. It appears that this situation arose because the community mobilisation exercise for pre-siting was undertaken only with the local leadership, and not with community members as a whole.

Whilst this was explained as a deliberate strategy on the part of the consultants, in order to speed up the exercise, the result was a feeling of lack of involvement in the programme amongst the community generally. In addition, where hydrological conditions meant that the water point was installed at a site not originally chosen, as often happened, villagers felt themselves to be even less involved.

The tendency appears to have been, moreover, to stress community participation primarily during the pre-siting and implementation phase. As indicated by the Water Committee survey, in wards where programme activities had been initiated two years ago, it had been more difficult to provide information and communication support on an on-going basis, in order to enhance community involvement. The MCCDWA, which ahs now taken over this responsibility, is still in the process of training VCWs for this task.

The weak initial and longer term community involvement contributed to the water point users' perception that the installation 'belonged' to those who had installed it - usually, the LWF - who were also responsible for its repair. At best, the view was that the water point was owned jointly by the community and the 'people who put it there'. Whilst the basic upkeep and

maintenance of the water installations and headworks was high, pumpcaretakers were ill-equipped to undertake any additional maintenance of the pumps. Cases were reported where the pumpfitter, rather than the pumpminder, was called upon in the event of breakdown or leakage problems.

All the Water Committee members interviewed in the field investigation had very little knowledge about the role of the pumpminder within the 3-tier maintenance system, and often did not know the name of the pumpminder for their ward, or where he lived. In other instances, he lived too far away for the caretaker to communicate a problem to him. This observation was confirmed during the Water Committee survey, where caretakers clearly experienced difficulties firstly in getting a message about a problem or breakdown to the pumpminder and secondly, subsequently pressurising him to take some action on it. For the pumpminders themselves, the number of installations, lack of spare parts and the large distances which they had to cover with inadequate transport facilities (bicycles) were seen as the main constraints to their work.

Despite their exclusion from NMWP statistics, Makoni District is well endowed with shallow wells, originally constructed by individual families near their homesteads for domestic usage and for watering vegetable plots. These semi-protected wells were perceived to be easier and more convenient to use than the improved water points. which are generally regarded as a back-up source in the dry season when family wells dry up. Detailed study of water use at three sites undertaken in March 1988 as part of the anthropological study show that between 16-45% of the households used private sources at that time of the year. This study also showed that more than two-thirds of the families used less than 12 litres per day for each person.

Community members still have a limited conceptualisation of the importance of the use of protected water supplies; thus they continue to utilise family wells and other traditional sources such as rivers and streams for bathing and laundry. Many families agreed to build Blair latrines because of the offer of free cement, not because of any real understanding of their advantages. Latrine construction generally was seen as an activity separate from those carried out by the 'water people'. Where bottlenecks in the delivery of cement supplies for latrines has left villagers with open pits, dug more than two years ago, communities are becoming critical of the programme as a whole, and, as they are often blamed for the situation, VCWs are also becoming discouraged.

It is worth noting here that the Water Committee survey highlighted two aspects of 'tradition', the implications of which are important for community-based water supply programmes. The first relates to the need to consult with and acknowledge the role of the ancestors during the pre-siting exercise. This process was incorporated within the pre-siting procedures used in the district, and proved effective in integrating a modern technological intervention into the existing cultural setting.

The second relates to the distinction made by community members in respect of the perceived jurisdiction of 'traditional' (Chiefs and kraalheads) and 'new' (VIDCO and Party) leaders. The former continue to provide an input into community discussions, negotiations and problem-solving mechanisms, whilst the latter are sometimes considered less effective in such roles. A combined approach involving both structures during the introduction of the programme and the pre-siting process appeared to reduce the liklihood of future conflict.

As the shallow wells were also extensively used for irrigation of vegetable plots, it was of no great concern to the villagers that the improved water points were located at sites which were unsuitable for community or co-operative gardens, and that their capacity meant they could only be utilised for consumption purposes. Given that even unprotected sources of water for domestic and productive usage are nowhere near as abundant in other districts of Manicaland or Zimbabwe as a whole, however, the field observations would suggest that priority and need assessments should be undertaken on the basis of far more comprehensive inventories of facilities and investigations of patterns of water usage than is currently the case.

Maintenance Organisation

The total PWS inventory for communal lands in Makoni in February 1988 was as follows:

- Boreholes: 416
- Deep wells: 419
- Shallow wells: 150 (approx.), DDF to assist MOH

Over the last 3 years the maintenance task has thus increased by a factor of three. In addition another 200 new PWS in resettlement areas fall under DDF's responsibility.

Being responsible for maintenance of PWS installations DDF has established a Water Section at the District level. This organisation is headed by a Field Officer/Water (FO/W) who reports to the DA. He has the following staff allocated specifically for water:

- 1 Office Clerk, responsible for record keeping, ordering supplies, etc
- 2 Pump Operatives (graded), responsible for handpump maintenance
- 3 Assistants (trained by DDF), casual employees assisting Operatives
- 2 Builders, rehabilitation of headworks (with helpers)
- 12 Pumpminders, stationed at ward level

In addition the FO/W makes use of pooled staff resources such as stores clerk, accountant, drivers, secretary, etc.

One truck is allocated to the Water Section and it is mainly used by the mobile team. In order to reduce milage the FO/W sends the truck out on week (or half week) long trips to the communal lands. However, he estimates that about 1/3 of the time the truck is allocated to other uses (ordered by the DA). An additional vehicle has been on request for some.

The District has been given a reduced recurrent budget by DDF on the understanding that NORAD funds for rehabilitation and maintenance can be utilised. The allocation to the regular maintenance vote (D 3B) for spares, transport, etc. is Z$ 6,500.- whereas the standard figure for other districts is approximately Z$ 20,000. Financial and transport constraints make it impossible to carry out preventive maintenance except when it can be combined with call-outs for repairs. The FO/W also reported constraints due to lack of essential tools, in particular dies for cutting of threads on broken rods.

DDF introduced the 3 - tier maintenance system in the district in 1987. Together with general support for upgrading maintenance capacity, the situation has improved considerably over the last couple of years. The plan is to have an additional 6 pumpminders posted (giving a total of 18 for the 30 wards). Two who already trained cannot be posted due to lack of funds (D3 A vote). As noted by the FO/W, a second mobile team will be required in the very near future.

The pumpminders were deployed after many of the water points had already been completed. It has proved difficult to establish a reliable communication chain from the caretakers through to the pumpminders though to DDF's Field Officer/Water. With relative high population densities and a high number of well handpumps the pumpminders should, however, be able to supplement the district based maintenance organisation.

A sample of the well kept handpump maintenance records was reviewed. The total sample was 44 record cards (approx 5 % of the total number of cards). The records had been opened in 1987 and are designed to represent the records of maintenance undertaken during one full year. The FO/W was still awaiting completed record cards from MEWRD and the LWF for the boreholes and wells installed most recently.

The following observations were made from the records:

- For 17 well sites no repairs had been reported;
- For 27 boreholes 3 repairs had been reported (1 to above ground parts, 2 to below ground parts);
- Committee membership (name/sex) was reported for 11 out of 44 installations;
- The committee composition was almost consistently 1 male (Chairman) and 3 females (incl. the caretaker);
- There was no record of water levels in any of the wells/boreholes;
- Many of the cards lacked details of the installations.

It is unlikely that the low number of reported repairs is correct. Although installations in Makoni are not heavily used as noted in the field findings above, there would still seem to be under-reporting. Another explanation could be that there is a back-log of entries from Operatives' report forms to the maintenance record cards.

A more detailed review of the actual maintenance status was undertaken by S. Saugestad during first half of 1988 in 6 wards of the Chiduku Communal Lands. For a sample of 173 water points 7% of the wells were reported dry and another 10% of the installations were reported to have breakdowns or other "problems". Reported breakdowns were usually attended to by DDF within 1 -2 weeks with some cases taking upto a month to be repaired. Problems were noted in respect of transfer of responsibility from both MEWRD and LWF (the implementors) to DDF. This relates both to the handing over for maintenance and to the full completion, e.g. deepening of wells with insufficient storage, supply of completed record cards, completion of all headworks components, etc.

Conclusions

* The programme objectives have in broad terms been achieved in Makoni District. After initial delays the rate of implementation has reached a high level. When considering Government capacity for continued implementation it is important to take into account the efficiency of consulting services as they were utilised up to 1988.

* At community level the impact of the programme is affected by the generally easy access to water from unimproved family wells and other sources. Improved integration of the programme components might stimulate the demand for all usage of protected water supplies.

* The previous programme organisation, with a consultant working in the head office of the MEWRD, contributed to the efficiency with which physical targets were met. Partly because of the emphasis on target achievement, and partly because of the line Ministries' resentment of the consultant's role, the programme did not achieve the desired transfer of knowledge and skills to the district level Government structures.

* In order to ensure that women successfully fulfill their role as pump caretakers, efforts must be made to provide them with appropriate tools and skills, and effective lines of communication to pumpminders and the DDF. More use could have been made of the female pumpfitter working in the District, as a 'role model' for demonstrating women's potential in technical jobs.

* No adverse environmental effects were observed in Makoni as a result of the programme. They would not be anticipated in a situation where the number of new installations has

contributed so extensively to overall water availability, and abstraction rates from the water sources are low.

* Continuing training at community level is required in order to enhance supportive community attitudes. In particular, on-going health education programmes and development of communication and information support structures are required to promote and extend the potential for a transfer of more responsibility for the water points to users.

* A positive development of DDF's maintenance capability has taken place over the last year. There is need to further develop the role of pumpminders, particularly in the maintenance of wells, and to improve support and communication links between the community and the pumpminders, through to the DDF structure.

Planning for Future Implementation

The planning of a truly district based programme is in progress and has so far resulted in a budget with tentative targets. The district has been supported with a short term consultant who serves as a "District Water Officer". This has facilitated planning progress and has made it possible for NCU to reduce its planning support to the Province/District.

The district has recognized the need for more detailed work planning in order to reveal critical constraints and bottlenecks. In this process, the lack of inventories and other baseline data are likely to be identified. The experiences of Makoni District in this respect will be important for assessing the need for a defined planning stage to be incorporated in operational plans, prior to implementation.

Makoni District has some experience of implementation management through the cooperation and coordination with MEWRD/IC during the past programme. However, the district will now be required to take decisions or at least to recommend solutions to higher authorities. This will require a learning process for the participating agencies and the initial physical targets should not be set too high.

The integrated concept has a disadvantage in so far as a coordinator with the executive powers to manage the programme does not exist. Although discussions in Makoni demonstrated open and dedicated attitudes among district staff, all assessments pointed at the importance of having an officer with day-to-day responsibility for management.

Within a coordinated project implementation concept it is particularly important that roles and responsibilities are fully clarified. To ease the breaking-in of a new programme organisation maximum use should be made of previous procedures and implementation experiences. The report prepared by IC on status and procedures of the programme at the end of their assignment had not yet been forwarded to the District from MCCDWA.

The combination of decentralised implementation responsibility and centralised decision-making procedures is unfortunate. This should be treated as a constraint during planning, and will mean that the different operational modalities of the participating ministries must be taken into account. For example, the DA can sign a requisition requested by the FO/W whereas the MOH District Head has to refer his request to the Provincial headquarter. The consultant recruited by the MCCDWA for community mobilisation and training reports directly to the ministry HQs.

A continued high implementation rate is envisaged for Makoni District with good response by the local population. Thus further development of the maintenance (and repair) capacity by DDF and the training of caretakers must continue to receive high priority. The role of the 2nd tier (pumpminders) should be fully clarified both as a national strategy and with specific reference to the technology mix (wells/boreholes) in Makoni District. As DDF is preparing to take over well digging activities from LWF during 1989/1990, it will also be neccessary to strengthen the FO/W's office accordingly.

The need for the establishment of formal handing-over procedures for PWS installations from the implementors to the DDF was identified as a priority during the discussions. At present, DDF does not receive prompt information on completed installations due to be maintained.

Continued training and support to local Water Committees must be adopted as a priority activity. To ensure sustained work by the committees, community based maintenance and continued latrine construction the MCCDWA, DDF and MOH have to be jointly involved in this training.

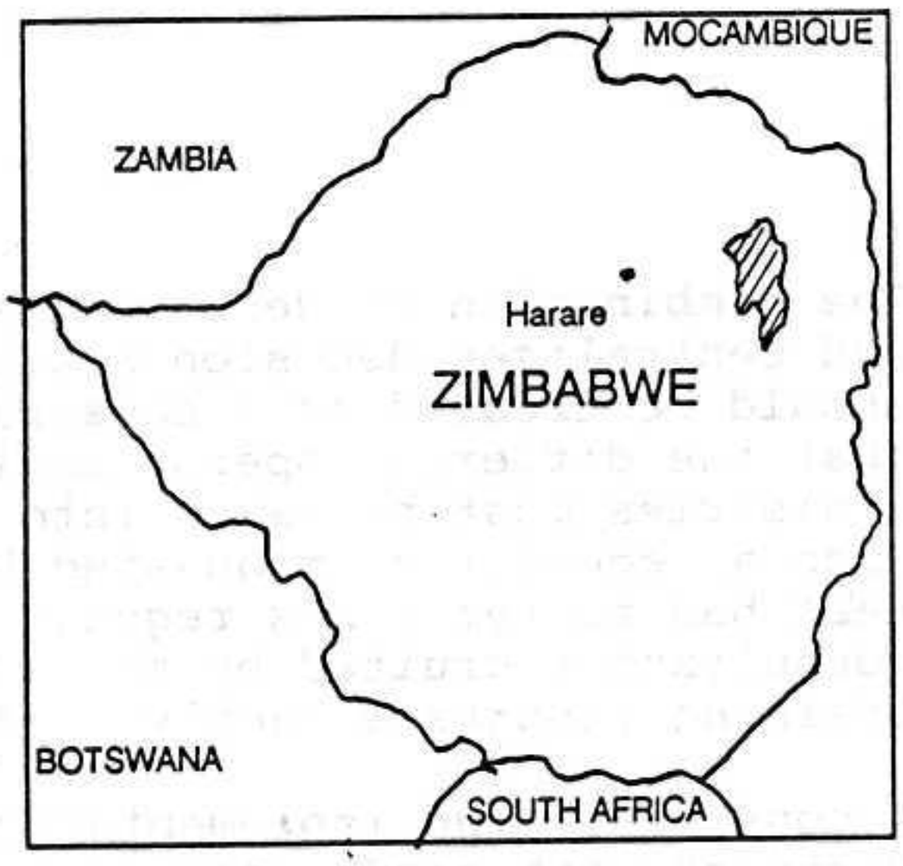
The objectives of the PWS component of the programme have obviously not been carefully reviewed as yet. The field investigations showed that many of the new installations are considered a back-up to traditional (family) wells. This being the case, the planning could adopt alternative strategies such as:

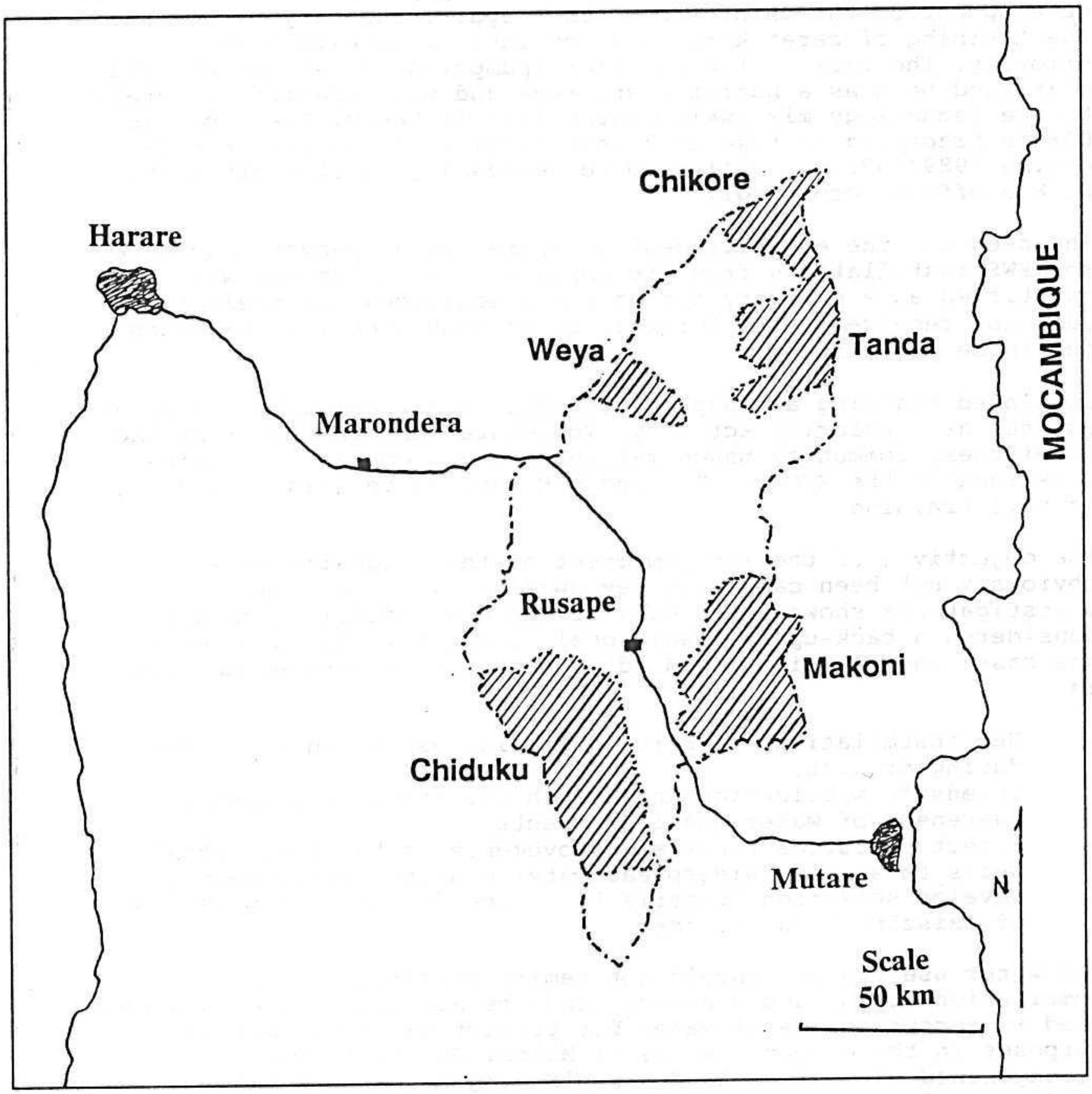
- New installations to serve primarily as communal sources during drought;
- Intensify mobilsation and health education to increase awareness of water quality aspects;
- Direct resources towards improvements of the traditional wells to achieve widespread water quality improvements;
- Develop selection criteria to reduce degree of duplication of existing local sources.

The water use problem should not remain unaddressed and a combination of the above points could be applied. There is also a need to encourage use of water for productive, non-domestic purposes in the communal areas of Makoni District. The strengthened element of land use planning as part of the programme planning procedures may help to resolve the issue.

Republic of Zimbabwe

MAKONI DISTRICT
MANICALAND
Project Areas: ZIB006 & ZIB 007





APPENDIX 7

Case Study No. 2

Chipinge District

APPENDIX 7 Case Study No. 2

Chipinge District

Manicaland Province

The Manicaland Integrated Water Supply and Sanitation Programme was implemented in Chipinge District (as well as Makoni District: see Case Study No. 1). Activities were undertaken in 21 wards within one communal area of the district - Ndowoyo.

Ndowoyo communal area is in the remote south-east of Zimbabwe, and is characterised by the same lack of basic infrastructure and development as other peripheral areas of the country. In addition, it is drought-prone and has limited potential for dryland agricultural development. Villages are fairly widely scattered, with a concentration along the line of road from Chibuwe to Chisumbanje.

The programme constituted the first attempt to integrate water supply, sanitation and health education as recommended in the NMWP. The objectives of the programme were not clearly spelt out originally. For the extended programme (negotiated in 1986) physical targets were specified up to mid 1987 as the means to improve health and general living conditions in the rural areas. These targets are given below for comparison with actual achievements.

The original programme (ZIB 006 for Manicaland) covered the period September 1985 to June 1986. It was later extended to cover also financial year 1986/87. From July 1987 the activities were continued as part of the new sector programme supported by NORAD (ZIB 007).

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Implementation covered primary water supplies (PWS), latrine construction, and health education. MEWRD was responsible for actual borehole drilling whereas IC organised community participation and involvement of Government extension workers. As SIDA had granted support for a sanitation programme in

Manicaland, this component was gradually taken over by MOH except for specific managment and logistics support by IC.

The consultancy agreement required IC to ensure interministerial cooperation, to liaise with the local administration and to involve local communities in project implementation. The programme was required to be integrated into district, ward and village level development plans. 'Site Meetings' were held from the beginning and District Coordination meetings were initiated in early 1986. The MEWRD had a Programme Coordinator based in Harare, seconded by NORAD to support the Ministry's management and to maintain official contact with the various Government agencies. The Coordinator was transferred from MEWRD to MLGRUD's provincial office in January 1988 as part of the management restructuring under the new sector support programme.

Operations in Chipinge District were influenced by the fact that borehole drilling was the only PWS activity. As drilling was undertaken during a concentrated period of the year, the level of programme activity also varied over the year.

Implementation Activities

Community mobilisation was undertaken by a special section of IC's programme staff. Upon receipt of the District's list of priority sites, the staff would initiate the water point presiting. Procedual guidelines were drawn up, although time and other constraints prevented their full implementation in some cases. The procedures included:

- Ward level meeting with the Councillor, other local leaders (both modern and traditional) and the villagers where the objectives and contents of the programme were explained;
- Ask a village to identify specific sites for a primary water supply. Three alternative sites could be proposed for each water point;
- Initiate selection of a local Water Committee (VIDCO sub-committee) and provide training for members/caretaker in basic maintenance;
- Extend health education, pointing out the need for proper water use, hygiene, and importance of family latrines.

Due to hydrogeological conditions in Ndowoyo well digging was ruled out and all PWS installations were to be drilled boreholes. Thus the final siting was primarily a question of deciding on location of a promising drill site without the need to discuss technology options. The soil conditions allowed operations only during the dry season and the drilling activities have therefore been carried out as a concentrated effort during a few months around the middle of the year.

Latrine construction started as a fully NORAD supported activity with MEWRD responsible for materials procurement and IC responsible for implementation in cooperation with MOH. When the SIDA supported programme became fully activated the MOH took on a stronger (and almost independant) role in implementation. IC has

however continued to provide training and logistics support to MOH. The lack of suitable local materials for latrine construction made this component particularly expensive.

Health education constituted a part of all communication support to the local communities from presiting through to the water point opening ceremony. No systematic education campaigns were launched, however, and the access to extension workers was hampered by the uncertainties caused by the transfer of Village Health Workers to MCCDWA, becoming part of the new Village Community Workers (VCW) cadre. MCCDWA was not formally involved in the ZIB 006 Programme.

The programme provided extensive logistics support to the implementation activities. MEWRD was responsible for procurement and transport. Due to commodity shortages and late delivery of transport equipment this support was not always forthcoming. IC also intervened to provide stop gap measures during critical periods. Private transporters had to be used for some time. The programme was further required to support training activities. Due to lack of adequate budget provisions this field was severly constrained until the situation was rectified in 1986. Where Government procedures proved to be cumbersome forward planning was needed to resolve the support problems. This was not successful in all respects, particularly with regard to the supply of cement.

Achievements

The programme which started in 1985 is still continuing under the current sector programme ZIB 007. It is therefore appropriate to include some of the achievements made after the ZIB 006 was formally completed in 1987. The revised management structure under coordination of the MLGRUD has, however, been in force only since January 1988 and it is not relevant to evalute results at this early stage.

Table 1 below sets out targets and completion rates for the Chipinge District as per the Project Document of 1986, MEWRD's Annual Programme Report for 1986/87 and IC's handing over report of August 1988. The number of boreholes refers only to those successfully sited; the success rate was in the rage of 85-90%. Some further comments on the quoted figures are given below.

Table 1 Targets and Achievements

Activity	Target June 87	Achievements June 87	Achievements July 88
Water supply installations:			
- Boreholes	70	60	168
Latrines:	1 000	37	202
VIDCO sub committees established:	-	-	146
Pumpminders in post:	n/a	-	6

With borehole drilling the implementing capacity may appear to be less dependant on district capacity. However, the siting procedures and training activities are equally important even though technical progress can be made by deploying drilling capacity. It should be noted that drilling continued up to October 1988, providing approximately 35 additional boreholes.

The average construction cost of a borehole in the two programme districts (Makoni and Chipinge) was Z$ 7,500. It should be noted that the boreholes constructed in Ndowoyo communal area were substantially more expensive, due to MEWRD's higher operational costs in remote areas.

The most serious problem presently affecting the Ndowoyo programme is the lack of handpumps for installation on recently drilled boreholes; 44 of the boreholes are without pumps.

Previously, people used to walk up to 15 kms to their nearest water supply. This situation has already changed dramatically for many Ndowoyo residents. In areas where the programme has been implemented the number of users per borehole is less than 200. With even distribution of the water points the theoretical maximum walking distance will be reduced to somewhere around 2 kms. In practice, considering a certain degree of clustered settlements, very few will have more than 1 km to the nearest water point.

Latrine construction has been very slow and costly in Ndowoyo. Long distances had to be covered to bring bricks and sand to the residential sites. Costs therefore exceeded Z$ 400 for the subsidy element alone. There is reason to question the replicability of this programme component unless a different design is adopted. Considering the prevailing socio-economic status there is a question whether the latrine construction programme can be continued.

Two constraints were repeatedly pointed out; transport capacity and the supply of cement. Both affected progress at a stage when communities had already been mobilised. A continuing failure to meet commitments by the GOZ will demotivate both Government workers and community members.

It is important to note that NORAD support through DDF (previously ZIB 001, now part of ZIB 007) has facilitated improvements of the maintenance system in Chipinge District. The substantial increase in number of water installations has, however, put a considerable strain on the maintenance organisation.

Field Findings

The field investigations in Chipinge District were carried out in Ndowoyo (Chisumbanje, Jongwe, Chibuwe and Machona Wards). Three community boreholes sites and two co-operative gardens with boreholes were visited, as well as a household with a family well

and a village where the borehole had been drilled but was not yet fitted with a pump. Discussions were held with Water Committee members, VIDCO members, community members and the Chairwoman and some plot holders at the community garden. Discussion meetings were also held with the District's pumpminders and Village Community Workers during a training course they attended at Chibuwe. Whilst this is certainly limited coverage, time constraints prevented more extensive fieldwork in the district. The fact that the field team operated independently and selected water points on a completely random basis increases the likelihood of the findings being indicative of the situation in the district as a whole.

Whilst VIDCOs and WADCOs have been established in the area, socio-economic conditions and overall lack of development have meant that traditional leadership structures retain their importance, deferred to by the largely uneduated and illiterate community members. Community mobilisation for the pre-siting exercise was directed almost solely at these traditional leaders, and individual villagers, as a result, were clearly uninformed about aspects of the pre-siting and siting process. The overall lack of water supplies was such that any additional facility was an improvement, almost regardless of where it was sited, but as more boreholes are sited in future, the need for community-wide participation in pre-siting will increase.

Water Committee members were generally well-informed about their roles and functions, and were undertaking the basic maintenance tasks assigned to them. Membership of the Committees was mixed, with both men and women filling the position of Chairperson or pumpcaretaker. The boreholes were serving large numbers of families, and were in constant usage, so greasing and tightening of nuts was imperative to maintain their operation without major breakdown as long as possible. Headworks were well maintained, but little effort had been put into constructing appropriate soakaways.

Pumpminders in the area faced a particularly difficult task. Although the Water Committees had good lines of communication with them, the six pumpminders had to cover large areas - one was responsible for 70 boreholes in four wards - and were often not able to obtain tne necessary spare parts from the DDF storeroom. The ability of the pumpinders to undertake the kinds of repairs necessary for the boreholes is questionnable, especially given the extent of their usage.

The implementation of the whole programme was heavily identified with the consultants contracted to the MEWRD. As a result, although the repair function was attributed to the DDF, ownership of the water points was still thought to lie with those who installed them, or with themselves and the users jointly. The level of co-ordination of activities which the consultants achieved, however, was probably responsible for the generally high awareness of the integration of the programme components which was observed during the fieldwork. With the current high costs of latrine construction and the limited ability of

households to pay the $40,00 builders' fee, it is unlikely that the latrine programme will advance substantially.

Despite a good general understanding of the advantages of using improved water supplies, traditional sources - principally the Save River - continued to be important sources of water. The need for long term health education is coupled with the need for more boreholes, to meet the demand for water in the area more effectively. Demand for water for productive purposes was equal to that for domestic water, although community members were aware that the two usages could not be covered by the same facility and that soil conditions determined the siting of gardens.

The community gardens were considered a worthwhile improvement by the plotholders, even though many of them had to walk 2-3km to get to the garden, on a daily basis. Due to the lack of local markets, and the absence of family vegetable plots, most of the produce was used for family consumption. Women going to the garden were able to combine their work on the plots with doing their laundry at the washing slabs constructed at the gardens' water sites (or at the Save River nearby), as well as meeting and talking with other women at the garden.

Maintenance Organisation

The total inventory of PWS in Ndowoyo (which is where the programme has principally operated todate) comprised approximately 200 boreholes. Very few of these existed before the programme started implementation in 1986. The DDF in Chipinge District looks after a total of approximately 370 boreholes and also some wells.

DDF established the Water Section at district level in 1987. The organisation is headed by the Field Officer/Water (FO/W) who reports to the DA. He has the following staff specifically for water:

- 1 Pump Operative (graded), responsible for handpump maintenance;
- 3 Assistants (trained by DDF), casual employees helping Operative;
- 6 Engine Operators, responsible for piped schemes;
- 6 Pumpminders, stationed at ward level.

Four out of the six trained pumpminders are deployed at ward level.

In addition, the FO/W makes use of pooled staff resources such as stores clerk, workshop mechanics, drivers, etc. Office services (record keeping, filing, etc.) suffer from a lack of clerical staff.

Transport is allocated on request. At a minimum, according to the FO/W, a truck is available for one week per month, and often 2 - 3 weeks. Considering the distance between the different communal lands within the district, the available transport capacity is a serious constraint. With only one mobile team it is not possible to carry out preventive maintenance and only the reported repairs are attended to.

The Chipinge District has been given a reduced recurrent budget by DDF on the understanding that NORAD funds for rehabilitation and maintenance can be utilised. The allocation to the regular maintenance vote (D3 B) for spares, transport, etc. is approximately Z$ 6,500.- whereas the standard figure for other districts is approximately Z$ 20,000. The FO/W also mentioned constraints due to lack of essential tools and spares; it may take many months before an order of leather cups, for example, is received.

DDF introduced the 3 - tier maintenance system in the district in 1987. Together with general support towards upgrading of maintenance capacity, the situation has improved considerably over the last couple of years. The plan is to have an additional four pumpminders in post (giving a total of 10). However, conditions in Ndowoyo make the effectiveness of the 2nd tier doubtful as distances are vast and the pump installations are generally deep.

The FO/W is aware of problems with communication between pumpminders and the Water Committees. In many cases the pumpminder was posted after the committees had already been established. With the present procedures the pumpminders are required to be present during the opening ceremony.

A sample of the handpump maintenance records was reviewed. The total sample was 33 boreholes or approximately 10% of the total installations.The records had been opened during the second half of 1987 and thus represent a full year. The following observations were made:

- Repairs had been carried out on 19 (or 60%) of these installations;
- On average close to 2 call-outs were reported for the total sample;
- For the installations attended to, an average of 3 repairs had been carried out, ranging from 1 to 7 for individual handpumps;
- 80% of repairs were on below ground parts, the remaining 20% on above ground parts;
- Replacement of whole or major parts of installation had been done at 3 sites (approximately 10% of sites).

The reported number of repairs is remarkably high, but not surprising. The installations are extensively used, alternative sources are inaccessible and the number of users per handpump is high. Replacements and several repairs seemed to be caused by corrosive water (combined with unsuitable material quality ?).

The review of records corresponds well with the field investigation findings.

Conclusions

* The programme objectives have been met in terms of water supply, but to a very limited extent as regards sanitation. Ndowoyo is a disadvantaged area where projects addressing basic needs could be expected to create a response from the residents.

* The water supply installations are in heavy use for most of the year as alternative sources are lacking. A reasonable service level should to be achieved as the programme progresses.

* The high yielding boreholes could be utilised for irrigation and thus contribute to agricultural development of the area.

* The costs of latrine construction has so far proved exhorbitant and should be looked into. The latrine design should be changed to suit local conditions.

* The programme has given Chipinge District limited experience of project implementation so far. The water supply component has been carried out during a limited part of the year and latrine construction has been undertaken in only a few households.

* The limited education of women in Ndowoyo, and their inexperience in development projects means that training and community participation activities must be adapted to meet their particular needs, if they are to fully take up and benefit from their positions on Water Committees, and within the programme as a whole.

* No clear indication of environmental degradation was observed as a result of programme interventions in the area. However, such marginal areas are vulnerable and improved access to water could change settlement and grazing patterns significantly.

* The socio-economic status of the population makes it necessary to adopt a long term strategy for community participation. Considering also the complexity of handpump maintenance in Ndowoyo, it is not likely that the communities can assume a substantial responsibility in the short and medium term.

* The maintenance capacity of DDF is being developed and should continue as a priority. The role of the mobile maintenance team is particularly important in view of installations and distances. The Pumpminders' tasks should be critically reviewed.

Planning for Future Implementation

The planning of a truly district based programme is in progress and has so far resulted in a budget with tentative targets. The District has been supported with a short term consultant to serve as a "District Water Officer". This has facilitated planning progress and has made it possible for NCU to reduce its planning support to the Province/District.

The District has recognized the need for more detailed work planning in order to reveal critical constraints and bottlenecks. In this process the lack of inventories and other baseline data are likely to be identified. This can be expected to become more pronounced when implementation is started outside the Ndowoyo communal area, where more diverse conditions will be encountered.

Chipinge District has some experience of implementation management through the cooperation and coordination with MEWRD/IC during the past Programme. However, the District will now be required to take decisions or at least to recommend solutions to higher authorities. This will require a learning process for the participating agencies and the initial physical targets should not be set too high.

The integrated concept has a disadvantage in so far as a coordinator with the executive powers to manage the Programme does not exist. Although discussions in Chipinge demonstrated open and dedicated attitudes among District staff, all assessments pointed at the importance of having an officer with day-to-day responsibility for management.

Within a coordinated project implementation concept it is particularly important that roles and responsibilities are fully clarified. To ease the breaking-in of a new programme organisation maximum use should be made of previous procedures and implementation experiences. The report prepared by IC on status and procedures of the Programme at the end of their assignment had not yet been forwarded to the District from MCCDWA.

The combination of decentralised implementation responsibility and centralised decision-making procedures is unfortunate. This should be treated as a constraint during planning, also accounting for differences between the participants. For example, the DA can sign a requisition requested by the FO/W whereas the MOH District Head has to refer his request to the Provincial headquarter. The consultant recruited by the MCCDWA for community mobilisation and training reports directly to the ministry HQs.

Continued implementation of boreholes in Chipinge District will require further development of the maintenance (and repair) capacity by DDF. Training of the local caretakers must continue to receive high priority. The role of the 2nd tier (pumpminders) should be fully clarified both as a national strategy and with specific reference to the limitations posed by boreholes as is the case in Ndowoyo. It will also be necessary to strengthen the

FO/W's office further, to increase capacity for execution of maintenance and repair tasks.

The need for the establishment of formal handing-over procedures for PWS installations from the implementor to DDF was identified as a priority during the discussions. At present DDF does not receive prompt information on completed installations due to be maintained.

Continued training and support to local Water Committees must be adopted as a priority activity. To ensure sustained work by the committees, community based maintenance and continued latrine construction the MCCDWA, DDF and MOH have to be jointly involved in this training.

Meeting the objectives of the PWS component of the programme should not present serious problems in areas like Ndowoyo if it is accepted that PWS is a social service to be subsidised by the Government. The question of water usage should, however, be addressed, as the possibility for establishing small scale irrigation could make the whole programme more viable. In other parts of Chipinge District it will be necessary to investigate more thoroughly consumers' priorities for both water utilisation and types of installations.

The scope and design of the sanitation component should be carefully reviewed for Ndowoyo. According to the DHI the problem was now contained, but the actual developments should be carefully monitored. The NORAD support to builder training is in this context particularly important.

Republic of Zimbabwe

CHIPINGE DISTRICT
MANICALAND
Project Areas: ZIB 006 & ZIB 007

APPENDIX 8

Case Study No. 3

Mount Darwin District

APPENDIX 8 Case Study No. 3

Mount Darwin District

Mashonaland Central Province

The Mount Darwin Integrated Project was started as a Pilot Project to assess the possibilities of establishing replicable district based programmes according to the strategies set out in the NMWP. Following planning activities, which included a "Scanning Exercise", the project started from 1 July 1987.

The objectives of the Mt Darwin Project were initially to develop implementation procedures and an adequate maintenance organisation. Initial testing was to be carried out in seven wards and was later extended to cover all 16 wards (Plan of Operation for NORAD assistance 1988/89). Specific targets for PWS, latrines and community based activities were identified for the extended project.

The current project plan runs up to mid 1990 with financial assistance through the NORAD supported sector development programme (ZIB 007).

Mount Darwin is located in the extreme north of the country, with roughly one-third of the district lying in the Zambezi Valley. Areas in the north of the district which have the highest population densities are in natural region IV. Development activities have been hindered by the difficult geo-physical conditions of the area, and the district faces increesing security problems on its border with Mozambique. The population of the district was estimated to be 90 330 in the early 1987.

Project Organisation

The Provincial Administrator (PA) is the designated Project Manager on behalf of the MLGRUD. He is assisted by the Provincial Water Officer (PWO) who has been recruited by NORAD from a firm of consultants as Technical Assistance. The DA is the responsible Project Coordinator at district level. The various line ministries execute their assigned tasks primarily through district based staff.

Formally the coordination and to some extent management relies on the Water and Sanitation Sub-Committes established at Provincial and District levels. In addition daily coordination is achieved through consultations and negotiations between the respective district based officers.

The PWO takes extensive part in all planning, reporting and implementation planning related to the project. He provides professional backstopping to the project and ensures follow-up on behalf of the PA. The various provincial offices have provided support to their respective district organisations as far as existing capacity permits.

Borehole drilling has been undertaken by the MEWRD so far. As the ministry is not permanently represented at district level, its role has been similar to that of a contractor.

Implementation Activities

The criteria for project outputs during the current phase have not been specifically defined. Whereas the targets for year 2005 is stated as one PWS within 500 m of each homestead, 1 VIP latrine for each household, and 250/150/50 people per borehole/deep well/shallow well respectively, the aim of the current project period is to make every effort to maximise output. The project concept implies, however, that the rate of implementation shall be within the capacity of the provincial and district administrations.

Broad procedures were outlined initially for the respective implementation activities such as latrine construction, shallow wells, deep wells, boreholes, and PWS rehabilitation. Community mobilisation is organised by MCCDWA for all activities except rehabilitation. For PWS installations the presiting is carried out by a team consisting of the Ward Community Coordinator, Ward Councillor, Health Assistant, DDF Water Operative, Agricultural Extension Officer, LGPO, or a combination of these officers. It would seem appropriate to review and update project procedures now in light of recent experiences.

Responsibility for actual implementation is assigned according to ministerial responsibilities, meaning that MOH, DDF and to some extent MEWRD run parallel organisations for the respective construction activities. In principle, the respective ministries have been given separate facilities such as transport and construction equipment for their implementation tasks. Although it is claimed that coordination of transport takes place, it has not been possible to assess to what extent this happens in practice. One case in point is the vehicle allocated to MLGRUD at Provincial level. This 4WD has been little used for the Programme and requests for its temporary allocation to the District have been refused.The impression is that each implementor takes care of his own requirements and that inter-ministerial assistance is not easily obtained.

The project implementation activities take up a substantial part of the District administration's time. The statement in the original Project Proposal that no additional staff would be required has proved to be incorrect. There is at present no other integrated development programme in Mt Darwin claiming any major time input by the officers, but ongoing projects and responsibilities may suffer. Replicability of the Project would appear to be dependant on whether or not the district has any major programme supposed to run parallel to the integrated water and sanitation project.

Achievements

The Project is now into its second year of implementation and the implementation plan for a third year is being prepared by the district assisted by the PWO. The first year's targets were (according to the district) imposed upon them from above and proved to be too high for some of the activities. No doubt it is now possible to make more realistic project plans compatible with the emerging implementation capacity in the district. An overview is given below of the first two years' targets and of achievements made during the period (1987/88).

Table 1 Targets and Achievements

Activity	Planned Targets 1987/88	1988/89	Achieved 1st Year Units	%
- Latrine construction	1500	2500	200	15
- Presiting of PWS	200	290	152	75
- Shallow well construction	30	60	14	50
- Deep well construction	20	21	45	225
- New boreholes	50	40	26	50
- Borehole rehabilitation	50	50	67	135
- Training of well sinkers	25	nil	65	260
- Latrine builders trained	168	192	106	65
- Pump caretakers trained	164	200	115	70

The substantial differences in achievements as reflected above are reported to have created frustrations within the project organisation. DDF performed well by exceeding targets at costs less than budget estimates. MOH on the other hand fell far short of targets and yet spent almost 75 % of the funds (including delivery of a truck). These deviations can, however, be explained with reference to DDF's existing infrastructure, the lead time required for latrine construction to gain momentum, and the uneven initial distribution of transport facilities.

Another notable achievement during the first year was the ability of MCCDWA to meet most of the targets related to training and promotional activities. This was done in spite of the late arrival of the project vehicle.

The high number of well sinkers trained is due to a deliberate change of plans. The objective was to train well sinkers who could be made available to similar projects in other districts, for example the drought relief well sinking in UMP area of Murewa District, Mashonaland East (see Case Study No. 4).

MLGRUD had a substantial budget of which only 65 % was spent. The coordination role should not warrant such a high budget figure. The allocation of a vehicle to the Provincial level seems incompatible with the transport constraints other implementing agencies have been faced with on a day-to-day basis.

In spite of hydrogeological investigations carried out as part of the "scanning", the success rate of boreholes fell as low as 50 %. This is unacceptable by any standard and should be redressed by applying better hydrogeological siting procedures. The cost of each successful borehole is Z$20,430 (MEWRD's expenditure:26). Although siting and full completion are included, this cost is prohibitive.

The progress was also affected severely at times by commodity shortages, in particular cement. It is unacceptable that mobilised communities which have fulfilled their commitment are let down by the GOZ as a result of shortages. Either the targets and thereby the rate of mobilisation has to be restricted, or the supply must be better organised, for instance by operating the programme on the basis of revolving stocks sufficient to complete any initiated project. This has now been partly achieved, as DDF has a good stock of both cement and handpumps.
It is observed that the district based organisation has overcome many of the initial problems in terms of coordination and cooperation. The management structure based on "concensus of the WSSC" seems to work reasonably well. As all participating agencies are now more or less self-contained in terms of transport and other facilities, the coordination is much more easily achieved. In addition the staff based at district level, and to some extent provincial level, have been both required and allowed to spend the time needed to resolve problems. Obviously this had not succeeded without able and dedicated officers in the key positions.

Field Findings

The field investigations in Mount Darwin District were carried out in Kandeya (Wards 15 and 16). Four completed borehole sites were visited, as well as one well under construction. Discussions were held with Water Committee members, water point users, a pumpminder and a Village Community Worker. Whilst this is certainly limited coverage, time constraints prevented more extensive fieldwork in the district. The fact that the field team operated independently and selected water points on a completely random basis increases the likelihood of the findings being indicative of the situation in the district as a whole.

There has been direct contact between Government extension workers and the community leaders in the pre-siting exercise in this district, with no third party such as consultants or an NGO involved. This would seem to be responsible for the much greater understanding amongst community members in Kandeya that the boreholes, once installed, belonged to the users. The MCCDWA and DDF have been running training courses jointly for the pump caretakers and the Water Committees and this again appears to have provided members with a clear knowledge of the 3-tier maintenance system, and their role within it. Pump caretakers are always women, whilst men usually chair the Water Committees.

Conscious of the need to meet the high targets set at the start of the programme, community mobilisation and involvement in the pre-siting exercise was restricted to the local leadership in most areas. VIDCO members, in liaison with the Village Community Workers, were rushed into making decisions about the potential sites, which were often felt to be unsuitable by villagers.

In addition, the hydrological conditions in the area meant that the borehole would frequently be installed in an entirely different site anyway, and villagers and their leaders subsequently queried why they had been asked to participate at all. In other villages, the drilling teams came under pressure to sink the borehole in one of the chosen sites, even though unsuitable. The lack of dialogue between the drilling teams and the community was such that technical requirements were never explained to the latter, who ended up with a water point with a low yield or other unsatisfactory characteristics.

The Bushpumps installed at the sites visited were extremely old-fashioned and were difficult to use, especially for young children. Whilst pumpminders were reported to visit the sites quite regularly, and check for problems, they were constantly asked to 'do something about the pump', although it was a design problem over which the pumpminder had no control. Basic maintenance of the pumps and headworks was generally good and caretakers were equipped with sufficient basic skills and tools to undertake their maintenance role. There was good communication between the caretakers and the pumpminders, but the kinds of breakdowns experienced meant that the pumpminder could not repair them himself, and the DDF might take 2-3 weeks to respond.

Although generally a high rainfall area, Mount Darwin has limited ground water resources and unfavourable hydrological conditions. Traditional sources of water still remain important for activities such as washing and laundry. Together with family wells they are also used for productive purposes such as gardening and cattle watering, and their generally high level of reliability has meant that the communities' priority is for improved sources for domestic use.

The effective integration of the health education and sanitation components of the programme with water supply has encouraged this usage of clean water. After initial planning problems, the latrine construction component has continued to have high take-up rates.

Maintenance Organisation

The Field Officer/Water reported that the inventory of PWS in Mt Darwin is comprised of:

- 230 boreholes
- 100 deep wells
- 35 shallow wells

DDF's Water Section is comprised of the following staff in Mt Darwin:

- 1 Field Officer/Water (FO/W);
- 3 Pump Operatives;
- 4 Casual Workers, helping the Operatives;
- 4 Pumpminders;
- 1 Secretary (project based employment);
- 30 well sinking teams, consisting of 1 well sinker/blaster and 3 helpers (all recruited at community level);
- 4 headworks construction teams, each with a trained builder.

The operatives, casual workers and pumpminders are deployed full time for maintenance and rehabilitation tasks. Two mobile teams are in operation. In addition the FO/W makes use of pooled staff resources such as the store keeper, workshop mechanics, drivers, etc.

DDF at the district level has the following vehicles (shared between the roads and water sections):

- 3 light vehicles (1 L/Rover for water, supplied by NORAD);
- 5 trucks (2 - 3 usually off road for repairs);
- 3 tractors (occasionally available).

Another truck to serve the water project has been ordered under NORAD funds, for 1988/89. The transport situation will be reasonably well contained upon arrival of the additional truck. The tractors are not considered suitable for repair services based on the present call-out system.
The DDF maintenance organisation is operating from two base camps. Five sub-depots established for implementation are expected to become maintenance depots in the future. The District Store which has been established with project funds was well organised and plans were in hand for additional spare parts procurement.

The breakdowns are supposed to be reported by caretakers, Ward Councillors or VIDCO WSSCs to the pumpminder, who will in most cases be required to report to the Pump Operative to call out the mobile team. The FO/W claimed that the response time is 2-3 days on average, one week being the maximum.

It was not possible to review pump repair records as the system had not yet been properly established and organised. It is a priority for the FO/W to attend to this issue. He indicated that recording of water levels in wells will comence in January 1989. The basis for immediate start of record keeping is presently not adequate as the completion and handing-over procedures do not comprise preparation of maintenance record cards.

The FO/W must be in a position to allocate sufficient time for the maintenance work. His estimate of time spent on implementation was 75% in 1987/88 against presently 50%. This would indicate that many of the initial implementation problems have been overcome.

DDF's recurrent vote for ordinary maintenance (D 3B) is Z$6,120, which is far short of requirements. The FO/W has access to another Z$50,000 voted by NORAD which is being used partly for rehabilitation and partly for regular maintenance.

The FO/W expressed a concern for future maintenance. He was confident that DDF had the technical capacity to handle the task, but was concerned that funds and other resources would be insufficient after the NORAD supported programme withdraw from the district.

Although no female candidates had been proposed by the wards for training as pumpminders, the FO/W expected this to be only a question of time. Twenty female well sinkers/blasters have been trained and are working on the teams in the district.

Conclusions

* The project has made substantial progress towards achievement of the general sector objectives as stated in the NMWP.

* The value of the Mt Darwin Pilot Project is limited as a series of special measures and actions have been taken to support the implementation process. In terms of replicability it is important to identify to what extent the substantial donor support has been necessary for success and what could have been achieved with a more modest level of external support.

* For the programme to be sustainable in the long-term, community participation and the pre-siting exercise must involve all members of the community, not just the leader-ship. Where hydrological conditions are so difficult, more emphasis should be given to providing basic technical information during the mobilisation process and in training programmes.

* Involvement of women in the programme is high so far, as a result of the deliberate strategy of district officers to include them. It could be increased by training women as pumpminders, and using the already trained female well sinkers and blasters as 'role models' demonstrating women's ability to undertake technical work.

* The District administration has gained substantial experience in the execution of integrated programmes. The ability to resolve planning and implementation problems should be of advantage to the district as it undertakes projects in other sectors.

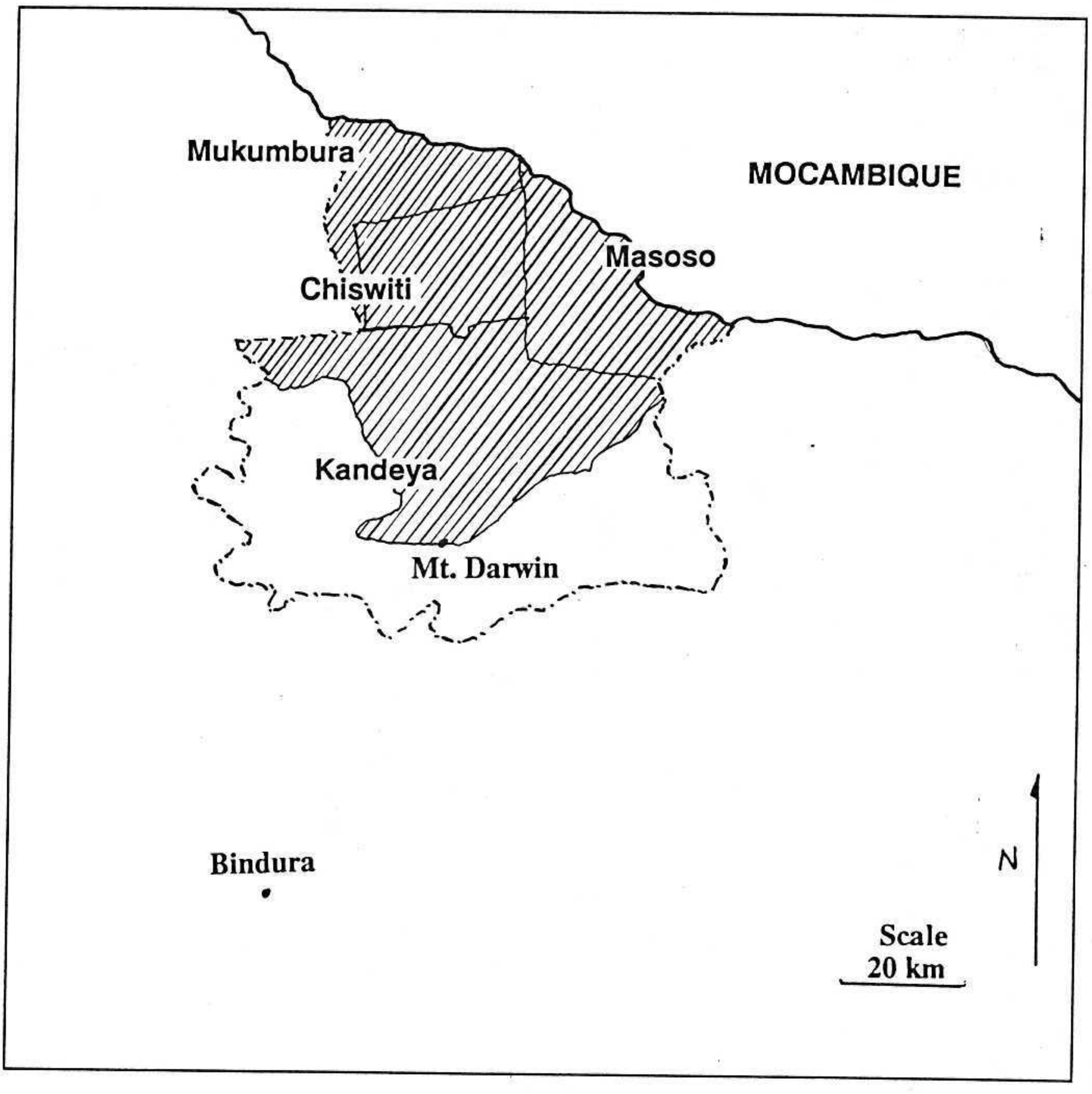
* Continued attention to implementation of the system for maintenance and repairs is required. Record keeping in compliance with the DDF guidelines remains to be fully introduced.

* The level of activity as observed in Mt Darwin is clearly higher than that which can reasonably be managed within the capacity of a "normal" district. The applicability of this model should be evaluated for a district where other integrated development projects make claims on the same staff resources.

* A careful review of the hydrogeological conditions is required before further borehole drilling is continued.

Republic of Zimbabwe

MOUNT DARWIN DISTRICT
MASHONALAND CENTRAL
Project Area: ZIB 007



APPENDIX 9

Case Study No. 4

Murewa District

APPENDIX 9 Case Study No. 4

Murewa District

Mashonaland East Province

The Crash Programme was undertaken as a drought relief programme in the three Mashonaland Provinces during 1985. Financial support had been granted by NORAD as the first part of the ZIB 006 programme.

The NMWP had not been presented in draft form at the time of launching the programme. The major recommendations with regard to primary water supplies (PWS) were known to MEWRD already, but it was decided that the drought relief objective should be given overriding priority. Hence, the aspect of community participation was subordinate to the progress of borehole drilling.

The Crash Programme was solely a water supply programme, based on borehole drilling. In order to develop some local maintenance capacity some community training efforts were made by the consultant in parallel with the drilling contractor. The Murewa District received a total of 18 boreholes out of which 15 were established as successful water points.

Project Organisation

The Crash Programme was implemented by MEWRD through the use of consultants (Interconsult A/S) and a drilling contractor (Geotest (PTY) Ltd). Interconsult (IC) was responsible for hydrogeological siting, drilling/construction supervision and community training. NORAD had seconded a Coordinator to MEWRD on Technical Assistance terms.

The project organisation was formally limited to the above three parties, but the district administration was involved in the selection of sites for water points. Although it was assumed that DDF should be responsible for future maintenance of the installations, no proper handing-over procedures were introduced.

Community training was undertaken in response to the emerging recommendations of the NMWP in respect of the need for community involvement and participation. However, the objective of this element was vague and came as a follow-up rather than a preparation for the PWS implementation.

Implementation Activities

The programme implementation was to a large extent directed by the provisions of the drilling contract. Within the strict performance obligations of the contractor there was little room for preparatory activities once the contractor had mobilised.

The contractor completed the contract within 8 months at a cost substantially lower than that estimated. IC continued the promotional activities for a short time after borehole completion and was able to make a final follow-up visit to most of the sites.

Achievements

The Crash Programme completed 15 successful boreholes in Murewa (all in Mangwende communal area). The average construction cost per PWS, including consultants' supervision, was Z$ 11,450. In addition the cost of consultants for community mobilisation/ education amounted to approx Z$ 1,970 per installation. These costs compare favourably with subsequent implementation programmes supported by NORAD with the reservation that costs covered by Zimbabwe, hidden overheads, etc. may have been calculated slightly different for the various programmes.

Committees including pump caretakers were trained for all the water points in Murewa. The impact of this effort is, however, very small as can be seen from the field work observations.

Field Findings

Of the three borehole sites visited in Murewa District (Wards 10 and 23), two had Water Committees, whilst all of them had pump caretakers. The caretakers were responsible for greasing of the pumps, and were instructed to report any breakdowns direct to the DDF office, as there are no pumpminders in the district. In two cases, it was reported that the DDF followed up reports of breakdowns within a maximum of one to two weeks, but the third borehole had been out of operation for a year, with no response forthcoming from the DDF.

Water from the boreholes was used only for domestic consumption, as their capacity was not sufficient for productive purposes. Each was used by an average of 100 households, as alternative, unprotected, sources were not within easy access and were used only for laundry or when the boreholes dry up. Community members were reported to prefer borehole water for drinking, but there was no clear understanding of the role of protected water in the prevention of disease, and none of the caretakers thought there had been a reduction in illness since the installation of the boreholes. A number of user households had Blair latrines, but construction of them was seen as a totally separate activity from the water programme.

Maintenance Organisation

The Field Officer/Water (FO/W) reported that the total PWS inventory comprises:

- 114 boreholes
- 35 wells (some fitted with bucket pumps)

The 3 - tier maintenance system has not yet been introduced in Murewa. All maintenance is carried out by a mobile team headed by a Pump Operative. A separate team operates in the UMP part of the district. As very little new construction is going on in Murewa, the FO/W's organisation is entirly devoted to maintenance (including some minor rehabilitation works).

DDF's available transport facilities comprise:

- 4 light vehicles (presently 3 being repaired)
- 4 trucks

For water supply activities, one truck is usually available 3 - 4 days per week.
Breakdowns are usually reported through school headmasters. According to the FO/W the response time is usually a few days and at most up to a week and a half. The team will carry out preventive maintenance on other installations as they travel to the site of the break-down.

Maintenance record cards have been established, but are not yet in use. The monthly reports prepared for the last few months were briefly reviewed:

- Generally the number of repairs carried out equals the number of reported breakdowns;
- During September - October 1988 only 5 out of 12 reported breakdowns could be attended to due to temporary lack of transport;
- It seems that just over 50 % of the repairs are carried out on below ground components;
- Corroded rods/pipes and tightening of cylinder assembly were frequently reported whereas few leather cups were changed.

The FO/W has Z$ 21,000 in his recurrent vote for maintenance (D 3B). This standard allocation should be sufficient for the relatively few installations to be looked after so far.

The situation in the UMP part of the District is similar to that of Murewa. The total inventory amounts to a total of 38 boreholes, covered by a recurrent allocation of Z$ 16,200 (D 3B). The reports for the months of July - November showed an average of just over two repairs per month. In addition it was reported that a total of 10 PWSs had been serviced (preventive maintenance).

The organisation of the stores was notably less satisfactory than in other districts which had received attention under the integrated programmes. The stock of spare parts was limited at both DDF camps.

<u>Ongoing Development</u>

The UMP area has been selected as one of the project areas for the NORAD supported intensive well-sinking for drought relief. This is a pilot project aimed at exploring the possibility of

quickly developing a well-sinking capacity and capability which can be mobilised in a drought situation. A total of 50 deep wells will be constructed under this programme up to mid 1989 according to the approved plan of operation.

The DDF and MOH are jointly responsible for the implementation of the programme, with assistance from LGPOs, VCWs and the district officer of the MCCDWA. Training for local well-sinkers will be provided by well sinkers transferred from Mt Darwin.

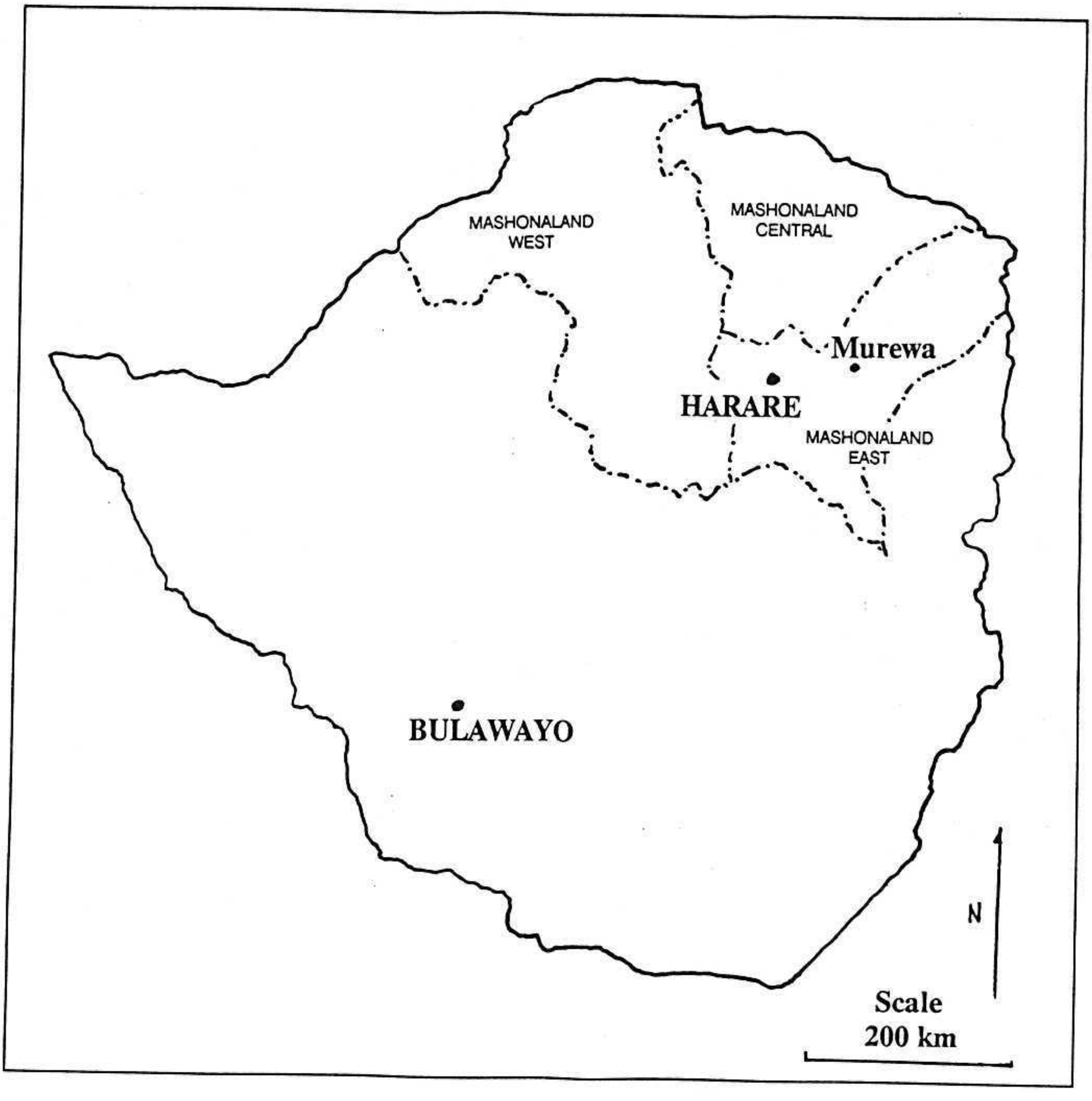
Transport capacity was reported by DDF to be the most serious constraint to progress. The 4WD vehicle supplied by NORAD to the project had been allocated to MOH and had in practice not been available to DDF. Contrary to the approved project documents this transport is reportedly used mainly for latrine construction and other MOH duties outside the scope of the project.

The well-sinking had at the time of the field visit been progressing well for some 3-4 months. With the onset of the rains a time when wells had been dug to a depht of 4-8 m, there was an urgent need to cast the well linings for many of them. This had been delayed by the cement shortage and caused a dangerous situation for the well diggers. The two inspected wells were both close to the point of caving in.

It will be of the upmost importance that water levels and yields are regularly monitored as part of programme activities, to determine the capacity of deep wells. This is particularly important as they are intended to serve as a reliable source during periods of drought.

Republic of Zimbabwe

MASHONALAND
EAST, WEST AND CENTRAL
Project area: ZIB006



APPENDIX 10

Maintenance Cost Model

- Sample Print-out

APPENDIX 10 Maintenance Cost Model - Sample Print-out

REHABILITATION, OPERATION & MAINTENANCE OF BUSH PUMPS (15 years from 1987/88 to 2001/02)

Cohort model giving no. of breakdowns & annual O&M budget for DDF water division

Item	@Year	1987/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00
RATES TABLE (th pa)		NPV Costs at		6%	78.2	(Allows sensitivity on rate of rehabilitation)								
Rehabilitation		0.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3.0	3.0	3.0	3.0
New Pumps		2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Breakdowns from existing pumps, not yet rehabilitated, start at 80% (gives correct 87/88 base) & increase as per new breakdowns. Rehabilitation every 8 years - second phase starting 96/97 (check "existing" down to zero by then). First phase includes washing slabs ($2000 pu); second phase at $1200 pu, twice the rate (3000 pa), half 2nd rehab old pumps, half pumps installed since 87/88.

CUMULATIVE NUMBERS (th) (note: existing/rehab formula applies only over 1987/88-1993/94)

Existing	12.5	11.0	9.5	8.0	6.5	5.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
Rehab - Phase 1	0.5	2.0	3.5	5.0	6.5	8.0	9.5	11.0	12.5	11.5	10.0	8.5	7.0
New Pumps	2.0	3.5	5.0	6.5	8.0	9.5	11.0	12.5	14.0	13.5	13.5	13.5	13.5
Rehab - Phase 2										3.0	6.0	9.0	12.0
TOTAL	15.0	16.5	18.0	19.5	21.0	22.5	24.0	23.5	26.5	28.0	29.5	31.0	32.5

REHABILITATION COHORTS (th)

1987/88	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
1988/89		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0
1989/90			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0	0.0
1990/91				1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0	0.0
1991/92					1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.0
1992/93						1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1993/94							1.5	1.5	1.5	1.5	1.5	1.5	1.5
1994/95								1.5	1.5	1.5	1.5	1.5	1.5
1995/96									1.5	1.5	1.5	1.5	1.5
1996/97									Absolute	1.0	1.0	1.0	1.0
TOTAL	0.5	2.0	3.5	5.0	6.5	8.0	9.5	11.0	23.5	11.5	10.0	8.5	7.0

REHABILITATION BREAKDOWN MODEL (% & th)

Proportion	2%	2%	50%	80%	100%	150%	200%	200%	300%	300%	300%	300%	300%
Numbers	0.0	0.0	0.3	1.2	2.5	4.3	6.8	9.7	13.2	11.0	9.8	8.3	6.0

NEW PUMP COHORTS (th)

1987/88	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
1988/89		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1989/90			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1990/91				1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1991/92					1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1992/93						1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1993/94							1.5	1.5	1.5	1.5	1.5	1.5	1.5
1994/95								1.5	1.5	1.5	1.5	1.5	1.5
1995/96									1.5	1.5	1.5	1.5	1.5
1996/97										1.5	1.5	1.5	1.5
1997/98											1.5	1.5	1.5

1998/99												1.5	1.5	
1999/00													1.5	
2000/01													⋮	
2001/02														
Year for graphs	87/8	88/9	89/0	90/1	91/2	92/3	93/4	94/5	95/6	96/7	97/8	98/9	99/0	
NEW PUMP BREAKDOWN MODEL (% & th)														
Proportion		2%	2%	50%	80%	100%	150%	200%	200%	300%	300%	300%	300%	300%
Numbers		0.0	0.1	1.1	2.4	4.0	6.5	9.8	12.8	17.8	22.3	26.8	31.3	35.8
TOTAL BREAKDOWNS (existing, rehab & new)		10.1	11.1	15.6	19.6	19.5	25.8	27.0	22.5	31.0	33.2	36.5	39.5	41.8
SIMPLIFIED COST MODEL ($ millions)														
Rehab @ $1200.0											3.6	3.6	3.6	3.6
Rehab @ $2000.0		1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				
Callout $ 200.0		2.0	2.2	3.1	3.9	3.9	5.2	5.4	4.5	6.2	6.6	7.3	7.9	8.4
TOTAL COST		3.0	5.2	6.1	6.9	6.9	8.2	8.4	7.5	9.2	10.2	10.9	11.5	12.0