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SUSTAINABILITY: THE CHALLENGE

RURAL WATER SUPPLY AND SANITATION IN
ZIMBABWE

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The Institute

IWSD is a non profit, non-government organisation. The Institute aims to assist in the achievement of sustainable development of water resources and waste management through the provision of support to development agencies in Zimbabwe and the Southern Africa region. In particular, the Institute will address issues hindering access of the poor to services and the sustainability of services. Specifically the Institute will:

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- act as an information centre and endeavour to provide state of the art information on request;
- provide technical and advisory support to sector agencies and development institutions; and
- develop a strong applied research programme to support decision making and policy formulation in the sector.

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RURAL WATER SUPPLY AND SANITATION IN ZIMBABWE

<p>Sustain: to keep up or keep going as an action or process</p> <p><u>When applied to the rural water and sanitation programme in Zimbabwe, a sustainable programme is one where:</u></p> <ul style="list-style-type: none">- infrastructure already in place continues to deliver a high level of water and sanitation related benefits;- the delivery of new services is maintained until the development objectives of the government are achieved. <p><u>The questions that therefore need to be asked are:</u></p> <ul style="list-style-type: none">- is the infrastructure we have already constructed continuing to perform as expected?- are there mechanisms to support continuing investment in water and sanitation until the development objectives are achieved?
--

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1. INTRODUCTION

Provision of basic water and sanitation services is seen as an essential step towards the social and health improvement objectives of most governments. Half of the population in the developing world is still deprived of adequate water and sanitation facilities and in many countries service levels continue to deteriorate for lack of adequate finances to cover operation and maintenance. (WHO, 1989) According to the World Health Organisation it is estimated that 30 to 60% of existing water supply systems are not operational (IRC, 1995) yet there are continued investments in further infrastructure without according priority to overcoming the problems which cause a large proportion of these new facilities to be inoperable within very few years of construction. Sustainability therefore is a concern of all countries and a strategy to ensure sustainability of services will assist greatly in hastening the achievement of goals of universal access to safe water supply and adequate sanitation services.

Sustainability in context

For water supply and sanitation, a sustainable system is one which is based upon affordable, appropriate technology, and continues to deliver a high level of water and sanitation related benefits after completion of the project (WHO, 1989). However, affordable and appropriate technology does not guarantee sustainability and there are many factors which affect the likelihood of a project to "continue to deliver a high level of water and sanitation related benefits after project completion". Some of these factors are: beneficiaries role in planning and implementation, operation and maintenance system selected, availability of spare parts.

Operation and maintenance is crucial to the successful management and sustainability of water supply and sanitation systems (IRC, 1995) and any discussion of sustainability must centre around operation and maintenance. A review of the rural water and sanitation sector in Zimbabwe in 1992 (World Bank, 1992) stated that a major challenge (for Zimbabwe) is to sustain the water supply and sanitation program and, more important, the water and sanitation facilities developed under the programme. Three areas of attention were singled out:

- Operation and maintenance: where it was suggested that the devolution of responsibility to the local level, either RDC or community, was the way forward.
- Financing and cost recovery: issues centred around getting the incentives right, recognising that water is an economic good. Financial incentives should foster efficient performance of supporting agencies and the costs of operation and maintenance should be borne by the beneficiaries.

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- Human Resources and Institutional Development: the process of decentralisation of the water and sanitation programme should use the opportunity to develop the requisite capacity and incentive structures to achieve the desired improved performance.

The issue of sustainability of the rural water and sanitation programme has been given constant attention in Zimbabwe and has been addressed in a variety of sector consultant and annual reports. However the continued need for attention in this area reflects the lack of a clear strategy on the way forward.

Indeed the direction for the future has been clearly enunciated by the resolutions of several NAC meetings. The decade consultative meeting of 1990 stated:

The future responsibility and authority for planning, financial control, implementation and operation and maintenance of rural water supply and sanitation, including decisions related to technology choice, must be increasingly borne by the local authorities and community members, ultimately leading to complete management through established local structures. (NCU, 1991)

The progress in development of a strategy for the implementation of this vision has not been so clear and the issue of sustainability remains high on the NAC agenda.

Purpose of this situation analysis

There is a realisation that investment in infrastructure for W&S does not usually result in continued improved access to safe water and adequate sanitation (WHO, 1989). Many investment projects fail to achieve their objectives (World Bank, 1992) and there are many reasons for this, however, there is increased awareness of the need to adopt strategies which enhance the sustainability of both the investments in W&S programmes and also the benefits accruing from such investments.

This analysis of the situation regarding sustainability in Zimbabwe has been carried out to provide government, external support agencies and non government organisations with information about the progress being made in Zimbabwe toward sustainability and as a background for further policy formulation by government and implementing agencies.

The purpose of this situation analysis therefore, is to take stock of the situation in Zimbabwe as regards rural water supply and sanitation: the coverage achieved so far, the financing of the programme, the state of service of facilities, planned developments and to discuss these in relation to sustainability. The paper will endeavour to identify those areas where there remain unresolved issues presenting these as challenges to policy makers and implementing agencies.

2. ZIMBABWE RURAL WATER SUPPLY AND SANITATION PROGRAMME

At independence in 1980, the Zimbabwe government recognised the priority for development and uplifting of the previously neglected rural communities. Access to safe water and adequate sanitation were recognised as essential to improved health and social environment and the government rapidly embarked on a programme for the delivery of water and sanitation services to rural communities.

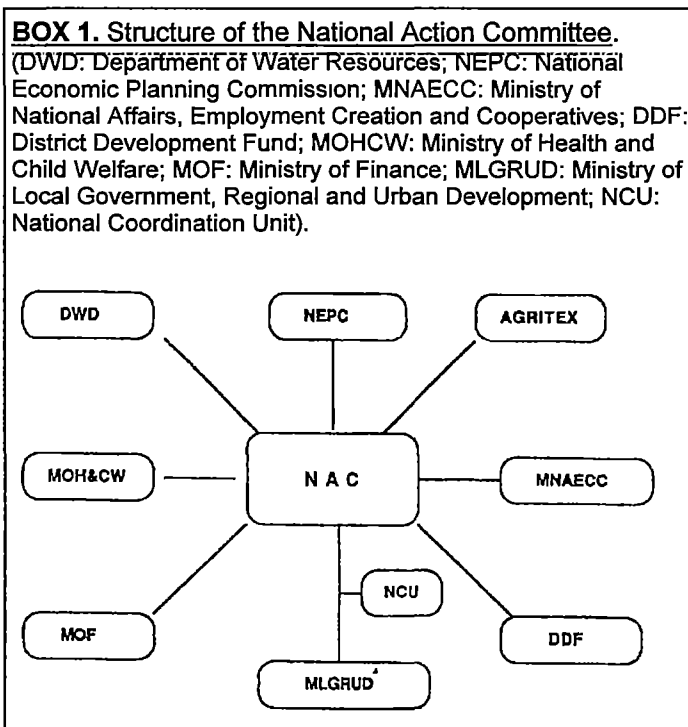
Institutional framework

Water supply and sanitation in rural areas is carried out via several routes:

IRWSSP. The Integrated Rural Water Supply and Sanitation Programme (IRWSSP) is a coordinated effort on behalf of government to deliver services to the rural population. The programme followed from a National Master Plan for water (MEWRD, 1985) and is guided by a National Action Committee (Box 1) made up of all key government agencies. The NAC is duplicated at Provincial and District levels through Provincial and District Water and Sanitation Subcommittees (PWSSC, DWSSC) to ensure the continued coordination of the programme.

Whilst the NAC provides the decision making body for the programme, the day to day coordination is carried out by the National Coordination Unit (NCU) which acts as the executive body to the committee and is based within the MLGRUD. The NCU was established in 1987, mainly staffed by consultants, with the expectation that it would eventually be incorporated into the civil service. The NCU no longer has any expatriate staff however it is still dependent upon donor funding for 6 of the 8 staff and no decisions have been made as to how the functions of the unit will eventually be incorporated into the civil service.

The basic operating guidelines for the IRWSSP have been established by the NAC and are summarised in Box 2.



BOX 2. FRAMEWORK FOR INTEGRATED PROJECTS

Objectives of the IRWSSP as set out in the District Coordination Handbook are:

- to provide adequate and safe drinking water for all
- to ensure that every household has at least a Blair Latrine
- to rehabilitate all existing water points to national standard including the provision of headworks
- to promote Health Education and Community Participation so as to encourage safe use, care and maintenance of facilities provided
- to ensure sustainability through the development of a 3-tier operation and maintenance system, based on community management and preventative maintenance of all water points
- to strengthen decentralised planning and coordination of rural water supply and sanitation projects

Features of IRWSSP

Planning and implementation through NAC and its sub-committees

Policies on technologies and procedures

Defined roles and responsibilities

Defined service levels

- Established planning guidelines
- Coordinated funding and donor contributions
- District and provincial water and sanitation subcommittees and provincial water and sanitation coordination
- Coordinated planning through district and provincial water and sanitation subcommittees and the line ministries
- Coordinated procurements where appropriate

Service Levels:

- Phase 1 service level:
 - All people in the communal areas with access to a protected water supply
 - At least 50% of the households in communal area with a VIP latrine
- Phase II service level:
 - The maximum walking distance to a protected water supply to be 500m
 - All households in communal areas with a VIP latrine

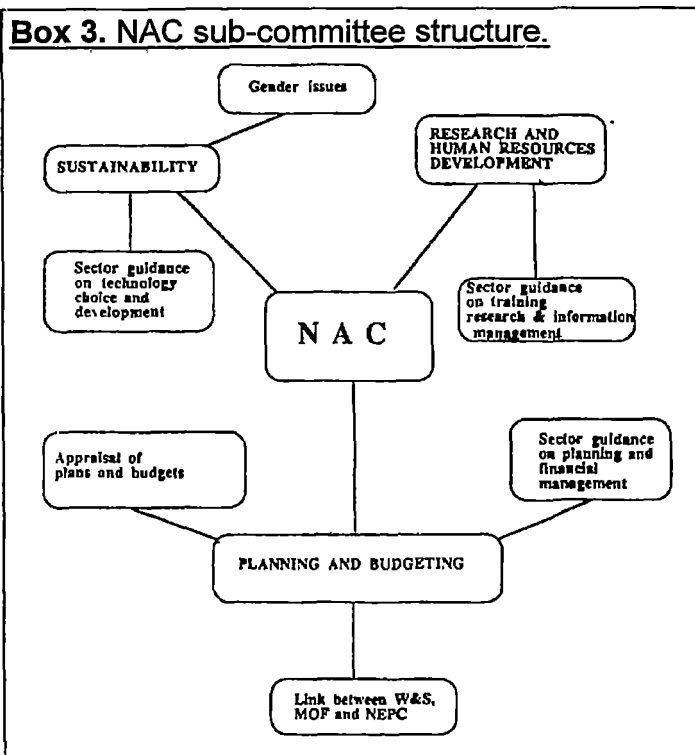
Technology choice:

- Boreholes; for 60% of basic supply
- Deep wells; for 30% of basic supply
- Shallow wells; for 10% of basic supply
- IRWSSP supports bush pumps, bucket pumps and VIP latrines only

Currently three sub committees of the NAC (Sustainability, Research and Human Resources Development, and Planning and Budgeting) provide specialist guidance as shown in Box 3. The National Action Committee brings together all relevant ministries, coordinates policy and donor support and has been responsible for the majority of the advances made in rural water supply and sanitation in the last decade in Zimbabwe (Hammar et al, 1993).

Government. Whilst ministries generally follow the guidelines and policy of the NAC some have access to additional funding from bilaterals or through the Public Sector Investment Programme (PSIP) to implement water and sanitation activities. These activities may be coordinated at district level but there are many districts where there is no IRWSSP and relatively little coordination in implementation. In general there is no functional district water and sanitation sub

committees where there is no integrated project being implemented to bring the committee together.



The IRWSSP largely deals with point source supplies and simple sanitation. Throughout the rural areas there are also large numbers of piped schemes operated by DDF and DWR and in the small urban centres there are sewerage systems operated by the Central Rates Fund. These facilities have a variety of management systems in place and have had little attention directed at them as regards sustainability. In particular, the sanitation systems in the small urban centres of rural areas are heavily subsidised by the Central Rates Fund and are very vulnerable to the current

reduction in government expenditure.

Non Government Organisations.

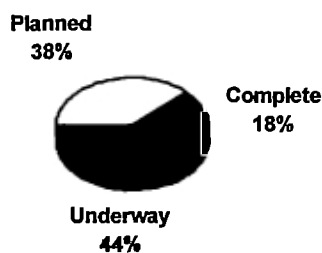
NGOs contribute a great deal to W&S activities. As they are not represented on the NAC there is little coordination at national level and their programmes do not generally require any approval at national level.

The strong policy framework of the IRWSSP has had positive effects on NGOs in that there is very good conformity among them to the technology

standards of Zimbabwe and to some degree a willingness to coordinate at district level with both government and local authorities. NGO activities now contribute to the NAC annual sector report which was criticised in previous annual reviews as not being fully representative of the sector activities as it had focused only on IRWSSP outputs (NAC, 1994; NORAD, 1994)

A strength of NGO activities should be their ability to test new ideas without necessarily being confined by government procedural constraints. Whilst this

Figure 1. Percentage of Districts covered by the IRWSSP.



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works in some cases, in others their activities may be seen as undermining attempts by government to achieve sustainability by e.g. by-passing local structures and inappropriate technology selection. The increasing powers and capacity of RDCs may go some way toward channeling the activities of NGOs within a framework which accords with government and local authority objectives.

Local authorities. Rural District Councils, established in 1994 from previously existing local authorities, have generally been marginalised in rural development. They were considerably strengthened with the implementation of the 1988 Rural District Councils Act in 1994 and the water sector has long held a vision for the full management and development of rural water and sanitation services by the local authorities. The NAC began to implement this vision (NCU, 1991; NAC, 1992) in 1993 with the shift of IRWSSP project implementation to be carried out through the RDC rather than the complex of government institutions. Three pilot districts were selected for this and have been managing their respective projects since that time. With a continued thrust by central government toward decentralisation at least a further 8 IRWSSP are expected to begin implementation through RDCs during 1996/97. Critical to this whole process of decentralisation is a major capacity building programme being developed by government for the RDCs. The programme has three elements of: training; capital development; and technical support; and is planned to be effected over the next 5 years. Policy statements from central government make it very clear that RDCs will assume responsibility for the provision of water and sanitation services and therefore they must play a central role in any discussions on sustainability a situation which is not evident at the present time.

The 1990 decade consultative meeting resolution of "*The future responsibility and authority for.....rural water supply and sanitation.....must be increasingly borne by the local authorities...*" is clearly in the process of implementation and this is believed to be at the foundation of the strategy of sustainability for the water and sanitation sector.

Private initiatives. Individual rural families appear to contribute little to improving access to water and sanitation services entirely at their own initiative. An exception may be the upgraded family shallow wells but there is no information available on the extent of private construction.

Private initiatives are not recorded in the information system and there is really little incentive for private initiative as the current method of providing subsidy and free maintenance service shifts the initiative to the service providers. Yet it is a commonly held view that sustainability is ensured with a community or family initiated project.

Programme management

The NAC has traditionally concerned itself with the preparation, approval and implementation of district integrated water and sanitation projects within the context of the IRWSSP. A large number of districts (38 out of a total of 57) have thus benefited from the implementation of these integrated projects. Most district projects have been prepared at district / provincial level and, once approved, the finance is disaggregated at national level to the participating implementing ministries. The district extension staff of these ministries form the district water and sanitation subcommittee and coordinate how they actually implement the project within the district. More recently several district projects are now being managed by the RDC who are responsible for all of the funds and then contract agencies to carry out the specific project activities as and when required.

The former government centred management of the programme was seen as inefficient and incompatible with the wishes of the NAC to achieve a sustainable programme. The focus on switching the management of the projects to the RDC was early identified by the NAC as important and in the early 1990's the water sector was seen as spearheading the process of decentralisation. However in 1996, the majority of projects are still being implemented by government but with a renewed impetus on handing over to the RDC.

In the respect of management of water and sanitation projects the NAC is effectively addressing a key element of sustainability through this transition to RDC managed projects and their involvement in the capacity building programme for RDCs.

Once empowered and trained through the IRWSSP projects the RDCs may feel more able to define for themselves the support needed from government and from NGOs to be able to carry out their mandate of water supply and sanitation service provision to the rural community.

A study on country level collaboration (Hammar *et al*, 1993) identified many strengths of the interministerial approach used in Zimbabwe although various consultant reports on the programme have expressed concern over the sustainability of the NCU (Wangen, 1993). Hammar *et al* highlighted a tendency for centralised management of the programme and whilst this may be reduced with RDC local project implementation the large number of projects being handled by the small NCU staff must be responsible for some of the delays experienced in getting projects off the ground.

Planning

The planning process for rural W&S is best described with reference to the IRWSSP. The National Action Committee produced a "District Coordination Handbook" (NAC, 1990)

Box 4. PLANNING TOOLS

Shallow well unit:

One SWU serves 50 people.

One shallow well = 1 SWU

One deep well = 3 SWU

One Borehole = 5 SWU

One borehole is therefore expected to serve 250 people.

One latrine per family and an average family size of 6 is assumed.

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which gives guidelines on how to formulate an IRWSS project including accepted technologies, unit costs, expected technology ratios (boreholes/ deep wells) subsidies etc. An extremely valuable reference document, it has suffered from being used as an instruction book rather than a guide.

Planning and policy making in the sector are closely related to the coordination process, making use of the same structures, these being the NAC and its sub-committees at the National level, and the Provincial and District WSSCs at sub-national level. At all levels the involvement of so

Box 5. Activities addressing sustainability

- Cost recovery workshop - May 1989
- Decade consultative meeting - Nov 1990
- Vision 2000 - Jan 1992
- Community Based Maintenance system piloted - 1992
- Pilot RDC implementation of IRWSSP, 1993/4
- Sustainability workshop in Bulawayo - Aug 1994
- Sustainability sub committee of NAC formed, 1995
- Capacity building programme for RDCs - 1996
- O&M workshop, 1996

many agencies in planning and policy making has demanded the availability of consistent and reliable information, thorough and well considered debate, flexibility, and a willingness to adapt, in order to reach a consensus (Hammar et al, 1993).

The NAC has repeatedly addressed the issue of sustainability (Box 5). The NAC participated with NORAD in a Quality Assurance exercise (NORAD, 1994) which identified the need for planning for the long term sustainability of the programme i.e. the investments, as well as planning for the sustainability of the benefits accruing from the infrastructure. Following from this report and the awareness within the NAC of reduced funding for operation and maintenance the NAC established a sub committee on sustainability which is presently formulating a strategy for sustainability.

Technology

A significant strength of the programme in Zimbabwe is the availability of locally produced water and sanitation technology (Box 6). Much of the technology has been designed in Zimbabwe to be locally acceptable, politically, socially, technically and economically. Its local manufacture ensures that simple water and sanitation services are not out of action due to the lack of spare parts within the country. The NAC has been central in supporting the development of the technology, its standardisation within the programme and the adoption of a national policy preventing the proliferation of imported technology within the country.

This situation increases the potential for sustainability within the programme for primary water supplies and on site sanitation.

The technology used for the provision of water supply and sanitation services in rural communities has considerable impact on sustainability. Where the infrastructure is installed and maintained by government, the technology must fit

within government determined parameters of cost, service level, ease of maintenance and cost of maintenance, whilst also satisfying community requirements of acceptability.

Where the technology is expected to be installed and maintained by the community, i.e. the responsibility shifts from government to the community, the decisions on parameters of cost, service level, ease of maintenance and cost of maintenance must also shift to the community if sustainability is to be possible. In practice, due to the need for continued government assistance in financing development, the parameters guiding how, and where, government support will be provided, will also strongly influence community technology choice.

Box 6. Technologies of the rural water supply and sanitation programme.

Bush pump

model A Developed in the 1930's, this robust but heavy pump is to be found throughout Zimbabwe. It is gradually being replaced by the model B and whilst being repaired, it is not now being sold.

model B Developed in 1989, this is an improved version of the model A which is easier to maintain and lighter to use. It is the adopted handpump technology for boreholes and deep wells and is replacing model A pumps in rehabilitated and new boreholes. Cost is Z\$1,500 and several companies are making the pump.

Extractable version Following international trends in pump development and the shift toward technology appropriate for community maintenance, the bush pump has been designed with rods and seal extractable through the rising main. This makes it easy for the replacement of the seals by the community without extracting the whole pump. The technology has been adopted for use in several pilot areas and approximately 50 have been installed by mid 1996.

VIP latrine The latrine was developed in the 1970's. Several versions are constructed with a variety of materials and for a variety of conditions. However the main principles are always followed - a screened vent pipe to control flies and odour; one vent pipe and one pit chamber per squat hole. Construction cost is Z\$900 for a single compartment latrine. Kit form versions are available commercially.

Bucket pump The bucket pump was developed in the late 1970's and has been widely used on protected shallow wells. They have proved successful on family wells but suffered from poor maintenance on communal wells and therefore are facing reduced popularity in the IRWSSP.

Bucket and windlass Protected family wells are being promoted widely by NGO programmes and generally feature a bucket and windlass. This is simple and basic technology and several thousand are being installed annually. The windlass is commercially available at Z\$100 and complete protection of a family well costs approximately Z\$1,400.

In the rural water and sanitation programme the technologies recommended are the Blair ventilated improved pit latrine, the borehole fitted with a B type bush pump, the deep well fitted with a B type bush pump, and the protected family well with a bucket and windlass.

These are all well tried and tested technologies manufactured in Zimbabwe and therefore with ready access to locally produced spares (not necessarily at village level).

Recent developments have seen the production of test models of the bush pump with extractable pistons to make it much easier for communities, and others, to repair.

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Piped schemes are found throughout the rural areas of Zimbabwe but for several years there has been confusion on how and when they are to be constructed. The difficulty is that there has been a recognition that government cannot maintain piped schemes free of charge but as yet there is no system in place for charging rural villagers for piped water. In situations where DDF have run out of O&M funds the community is buying the diesel to run pumps but DWR run their village water supply stations without charge. It will be important to resolve this issue if neighbouring communities with borehole services are to be expected to maintain their own services.

Technology choice.

Historically, communities have had little say over which technology is provided to alleviate their water supply problems. Sanitation is different in that the government contribution is limited at about 30% of the cost and all work is carried out by the community or members of the community with most payment being made by the beneficiary family. This programme is therefore well centred within the community who are fully aware of the costs to themselves, take the initiative in seeking help, and are solely responsible for the final product which clearly belongs to the family.

The upgraded family well is now approaching this form of success in appropriate areas as external support from NGOs is limited to about 20% of the total cost and, as with latrines, the family ownership and responsibility is clear.

For a community to assist in choosing the technology which provides them with the level of service they are prepared to pay for and a technology which they are prepared to maintain they have to be provided with information. Basic information relevant to this technology choice is: cost of the technology; amount of external subsidy; annual cost of maintenance; reliability, yield, availability of technical support: as well as general information related to availability of spares and ease of repair and familiarity with the technology is important in assessing acceptability.

At the present time in Zimbabwe, communities have little choice over water supply technology as government remains the agency responsible for the major investment as well as for the operation and maintenance of facilities. It is also doubtful whether at the moment, the extension staff have the knowledge of the different technologies and cost implications to be able to advise communities sufficiently for them to be able to make an informed decision.

An example may be made here with respect to recent calls to focus on productive water in rural areas (Zimconsult, 1996). There are over 20,000 boreholes in the rural areas of Zimbabwe, a significant number having high yields, yet all are fitted with the "standard technology" hand pump delivering 20l/minute. The cry for water in rural areas is for more water, mainly for productive use, yet the existing water resources are not fully exploited due to central government planning and financial constraints. Greater community control and responsibility may allow better exploitation of these water resources.

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In the transition taking place to improve sustainability by increasing community responsibility for the infrastructure, it will be important to address this issue of providing appropriate technical information.

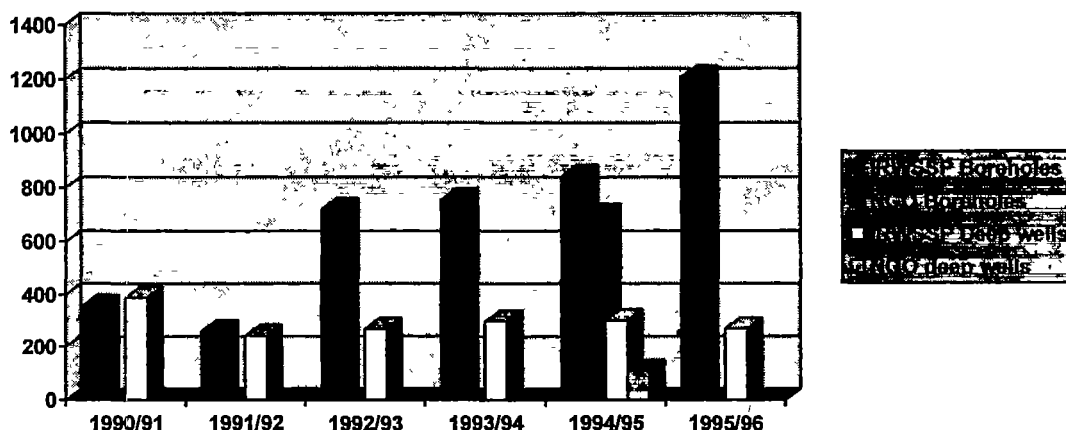
The quality of construction of facilities and the quality of repairs rarely receives the attention it deserves. Boreholes are being constructed and owned by government who are unlikely to criticise their own performance. Even when construction is contracted out, the remoteness of DDF from the actual facility, and not actually being a user reduces the opportunities for accountability. A shift in management of the development process to the RDC will create clearer lines of accountability resulting eventually in a better quality of construction and service from technical personnel, thus enhancing sustainability.

3. COVERAGE AND GROWTH OF THE RWSS

Data on infrastructure developed for rural water supply and sanitation has, until recently, only been readily available for those areas where IRWSSP have been implemented. Criticism of the annual sector report has been that it has not covered the sector - only the IRWSSP. From 1994/95 this has been remedied to a large extent and most districts now submit an annual report to the NAC and include non IRWSSP outputs. However the annual reports are often inconsistent in internal data compilation making it difficult to ascertain which data actually comprise the sector achievements. The following data are summarised from the annual sector reports and therefore have the above limitation.

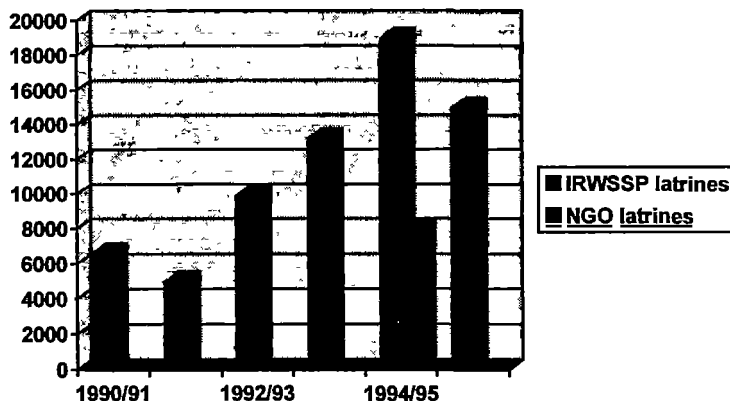
Water supplies

Figure 2. Numbers of boreholes and deep wells constructed under the IRWSSP and by NGOs from 1990-1995 and combined in 1996.



The output of boreholes has been increasing and in 1994 DDF secured 30 new drilling rigs more than quadrupling its drilling capacity. Only from the 1994/5 reporting year have NGO outputs been summarised for the whole country and it can be presumed that they have been contributing significantly to the infrastructure for several years. Likewise, several

Figure 3. Number of VIP latrines constructed between 1990 and 1996.



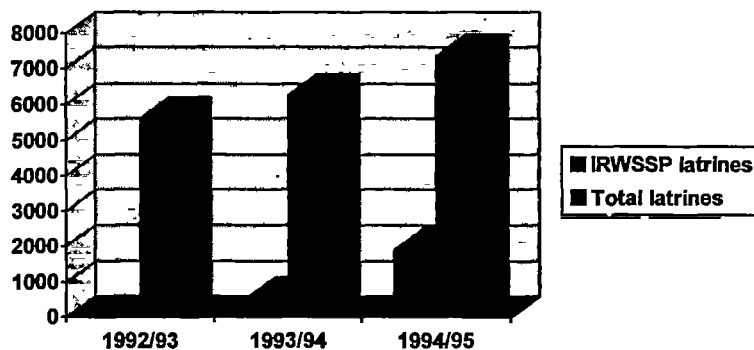
government agencies have been providing water and sanitation services without going through the IRWSSP. Most of the non-IRWSSP districts have continued to develop infrastructure albeit on a limited scale and therefore the overall achievements of the water and sanitation programme in Zimbabwe has been considerably underestimated. The 1996 data were not disaggregated to separate NGO and IRWSSP achievements (NAC, 1996).

Sanitation

The output of latrines has been steadily increasing since the major decline in output of the late 1980's and if the NGO supported construction is added to the IRWSSP reports there are over 20,000 new VIP latrines being constructed annually.

The sector report on outputs has been underestimating the actual achievements of the rural water and sanitation programme for many years as is shown by the inclusion of NGO figure in the annual report for 1994/95 (Figure 3). Taking Masvingo province as an example, the MOHCW shows the following outputs over the last three years as compared to the annual sector report (Figure 4).

Figure 4. Annual numbers of latrines constructed in Masvingo Province as reported by the MOHCW and the IRWSSP.



The IRWSSP data for 1994/95 (Figure 3), where NGO contributions have been included, therefore show that in all aspects the outputs of the rural water sanitation programme have been significant and considerably above those reported previously in the annual sector report.

Investment

Figure 5 shows the amount of money being invested in the IRWSSP projects over the last 5 years as given in the annual sector report from the NAC. (NAC, 1995). The apparent increase in the amount of Z\$ invested is effectively countered by the rate of inflation.

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This figure of investment does not give a complete picture of the actual total investment as there is no value attributed to the government allocations for infrastructure or to the considerable NGO investment.

Attempts to identify the full extent of investment are not easy. The following table (Table 1) shows the investment through the IRWSSP and not through the IRWSSP obtained from the Provincial records for two Provinces over the last three years but excluding government.

Figure 5. External annual investment in IRWSSP in Z\$millions and corrected to a constant 1990Z\$.

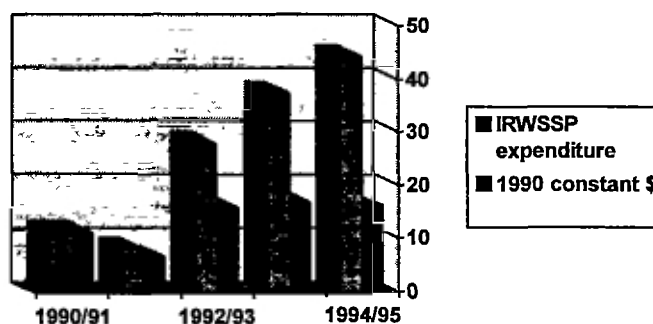


Table 1. Water and sanitation related investment in Mashonaland East and Matabeleland North through the IRWSSP and not through the IRWSSP (Z\$x1,000)

YEAR	MASH EAST		MAT NTH	
	IRWSSP	NON IRWSSP	IRWSSP	NON IRWSSP
1992/93	6,335	543	6,175	3,964
1993/94	5,187	310	6,329	7,947
1994/95	7,085	925	4,537	8,185

Some NGOs report only on materials supplied or outputs achieved. The annual report from the IRWSSP recognises these contributions, such as the World Bank assisted borehole drilling programme in 1993/94 and NGO activities but they are not quantified financially.

Subsidies

The level of subsidy provided for investment in the infrastructure to reach basic service levels for water supply and sanitation has only varied to a small degree over the last decade. It is interesting that whilst water is considered the most important need by most communities, they are requested to make a higher contribution to sanitation than they are to water and they make the highest contribution to the least reliable water technology (Table 2). This would suggest that there is room to change the subsidy system related to water investment.

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Table 2. Contribution of government and the community to infrastructure development.

TECHNOLOGY	GOVT/DONOR INPUT	Per capita subsidy	COMMUNITY INPUT	Per capita contribution
<u>Borehole</u>	Siting, drilling, casing, pump supply and fitting, headworks construction. Value Z\$36,500 (97%)	Z\$146	Siting, sand, gravel, labour for headworks. Value Z\$1,000 (3%)	Z\$4
<u>Deep well</u>	Siting, digging, blasting, lining well, supply and fitting handpump, headworks construction. Value Z\$11,500 (79%)	Z\$77	Digging first 3 m, housing well sinking team, sand, gravel and labour in headworks construction. Value Z\$3,000 (21%)	Z\$20
<u>Shallow well</u>	Handpump, cement, supervision. Value Z\$1,500 (20%)	Z\$30	Digging well, lining, installation of handpump, construction of headworks. Value Z\$6,000 (80%)	Z\$120
<u>Latrine</u>	Training local latrine builders, 3-5 bags cement, reinforcement, fly screen. Value Z\$300 (33%)	Z\$50	Digging pit, sand, gravel, bricks, full construction. Value Z\$600 (66%)	Z\$100

Service Coverage

Coverage is difficult to assess at any time and is made more difficult to assess by a lack of information on e.g. the number of latrines fallen into disuse or the number of water points broken down. Coverage in the Zimbabwe programme is estimated on the expected coverage from an individual facility as shown in Box 4 and whilst there has been no research to indicate whether these assumptions are valid, they nevertheless provide a valuable planning and monitoring tool. The latest estimates of coverage were given by the NAC in the progress report for the 1993/94 year as 77% of the rural population with access to safe water and 26% with adequate sanitation but the method of calculating this is not given.

None of the completed IRWSS projects have achieved their goal of access to primary water for all (50 people per shallow well unit) and 50% latrine coverage. Consultative inventories have recently been introduced such that all new projects should have a detailed inventory carried out before beginning implementation. This has allowed the coverage with water and sanitation services to be estimated for new districts but does not assist the districts already implementing.

SUSTAINABILITY: THE CHALLENGE

From a sample taken in 1995 of 28 villages covering 14 districts in seven provinces the overall sanitation coverage was 20.7% and the safe water coverage was 59.4%. These are not too much at variance with the national figures considering that the national figures can only be estimates until such time as inventories have been conducted in all districts.

The national census provides an alternative, and probably the most authoritative, measure of coverage as at 1992 and this is shown in the following table.

Table 3. The percentage of households in rural areas with access to a safe water supply and those with the safe supply within 1km. (CSO, 1994a..h) (Safe water is: piped water, communal tap, borehole or protected well)

Province	Percent H/holds using safe water	Percent. H/holds using unsafe water	Percent. H/holds with safe water within 1km
Midlands	56.2	43.8	41.1
Masvingo	64.5	35.5	46.0
Matabeleland South	67.8	32.2	52.0
Matabeleland North	72.0	28.0	53.0
Mashonaland West	69.7	30.3	62.4
Mashonaland East	55.6	44.4	49.9
Mashonaland Central	69.0	31.0	61.4
Manicaland	65.3	34.7	57.0

It can be concluded therefore that the coverage throughout the rural areas with safe water is in the order of 65% and if this is further reduced to take the acceptable situation as being access within 1 km then the average is in the region of 55%. As a rough calculation, a further 15,000 boreholes were needed in 1992 to reach the target of safe water for all within 1 km. A total of 4232 boreholes and 1251 deep wells have been constructed between 1992 and 1996 (Fig 2) leaving a requirement of about 10,000 boreholes to achieve acceptable coverage (not accounting for population growth). At the 1996 unit subsidy from government of Z\$36,500 per borehole, this equates to Z\$365m.

Similar census data are available for sanitation (Table 4) and these provide an insight into the relative occurrence of traditional pit latrines, no sanitation at all and the recommended Blair VIP latrine. Other data available from the MOHCW are significantly at variance with the CSO data and provide much lower coverage figures. The lack of reliable data is a major drawback of the present IRWSSP monitoring system.

Acceptable sanitation for rural communities is considered to be the Blair VIP latrine or a flush system. On this basis from Table 4 the coverage for rural areas with acceptable sanitation was 30.8% in 1992 leaving almost 270,000 latrines required to achieve the target of 50% coverage. This translates into a government contribution of Z\$81million at the 1996 unit subsidy of Z\$300 per latrine.

RURAL WATER SUPPLY AND SANITATION IN ZIMBABWE

Table 4. Percent of rural households with sanitation type in Provinces of Zimbabwe (CSO, 1994a-j).

Province	TECHNOLOGY						No of H/holds
	Flush	Blair	Pit	Bucket	None	no data	
Manicaland	4.01	30.15	26.79	0	39.03	0.01	277,087
Mashonaland Central	3.27	28.86	20.85	0.15	46.85	0.02	161,327
Mashonaland East	3.96	28.38	16.13	0	51.52	0.02	204,356
Mashonaland West	6.33	13.34	24.74	0	55.58	0.01	170,573
Matabeleland North	6.98	16.64	3.78	0	72.43	0.18	99,396
Matabeleland South	5.73	32.68	5.17	0.11	56.28	0.02	96,851
Midlands	4.23	17.46	12.95	0	65.34	0.03	177,527
Masvingo	7.47	32.78	8.68	0	51.03	0.05	207,546
Harare	37.42	15.87	35.67	0	11.04	0	4,920

Clearly a considerable amount of investment is required to continue the programme to reach the national planning target for phase 1 of 100% coverage with safe water and 50% with sanitation in the rural areas of Zimbabwe (Box 2). This emphasises the need for a strategic plan of action to be developed for the programme covering the next 20 - 25 years.

4. OPERATION AND MAINTENANCE

The District Development Fund, DDF, have held responsibility for the development of infrastructure in communal areas and maintenance thereof since its formation as the African Development Fund and from 1981 as the District Development Fund. In 1987 a special division was formed within DDF to deal with the growing water programme in rural areas and a three tier operation and maintenance system was adopted following the recommendations of the National Master Plan for Water (MEWRD, 1985). This system is described in the District Coordination Handbook (NCU/ MLGRUD, 1990). A pilot programme of Community Based Maintenance was introduced in 1992 as a way of trying to improve the efficiency of the operation and maintenance system.

Operation and maintenance is central to the issue of sustainability and presentations on the CBM project have been made in 1993 and 1994 at the annual sector review. A recent overview of Operation and Maintenance was given after the annual review of 1995 (Skaiaa & Hammar, 1995).

Three tier Operation and maintenance system

The three tier operation and maintenance system is described in Box 7.

Whilst the target for pumpminder coverage is one per ward, the financial situation has not allowed this and generally the coverage is one per three or more wards. Thus contact with the pumpminder is difficult for many communities who find it easier to report to the DDF at district level than the pumpminder. This difficulty in reporting will also affect the time from breakdown to repair. The operation and maintenance system used by pumpminders is one of repair of breakdowns and not preventive maintenance.

The number of water points being maintained by DDF have increased very significantly as a result of the emphasis on rural water supply by government and particularly as a result of the very successful IRWSSP. A major achievement has been the establishment and training of waterpoint committees at old and new primary water points in all districts where IRWSSP projects have been implemented.

Until the 1994/95 annual sector report (NAC, 1995) there was no information on operation and maintenance being reported outside the DDF and the focus of the NAC and the IRWSSP was more on construction of new facilities. The 1994/95

Box 7. Operation and maintenance The three tier system.

1st tier:

A well equipped and motorised district maintenance team (DMT) overall responsible for O&M in the district; supervising and training lower tiers; carrying out major repairs; providing spares and other backup services.

2nd tier:

A pumpminder employed by DDF with a basic set of tools and a bicycle; Carrying out repairs with communities in 1 - 3 wards; Reporting major breakdowns to DMT; Recording breakdowns and repairs.

3rd tier:

A pump caretaker who is an unpaid member of the water point committee; carries out basic preventive maintenance; mobilises community to assist pumpminder; reports breakdowns to pumpminder.

RURAL WATER SUPPLY AND SANITATION IN ZIMBABWE

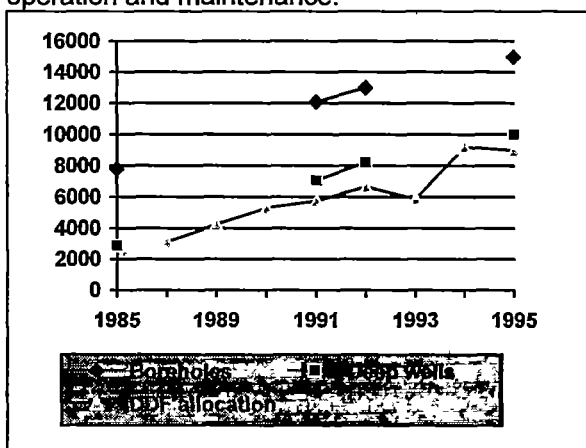
annual report gave information on down time of pumps from 29 reporting districts (from the total of 57 districts) which averaged 15 days (Table 5) and the average for 1995/96 was 14 days (NAC, 1996).

Table 5. District reports on the number of breakdowns and down time for bush pumps in 1994/95 (NAC, 1995)

Districts reporting	Province	Total No. bush pumps	No. breakdowns attended	Ave. down time (days)
5	Manicaland	1,426	1,794	14
0	Mashonaland C.			
5	Mashonaland E.	2,098	964	16
4	Mashonaland W.	2,107	1,330	10
3	Masvingo	1,545	533	10
2	Matabeleland N.	1,256	1,047	11
3	Matabeleland S.	1,958	861	24
7	Midlands	3,638	2,285	19
29	TOTAL	14,028	8,814	15

The total number of Boreholes and deep wells being maintained by DDF are shown in Figure 6. Also shown is the trend in financial allocations for DDF for operation and maintenance, which includes funds for dams and piped schemes as well as handpumps (Toriro, 1996). The operations and maintenance budget changed from \$300/ water point in 1991 to \$360/water point in 1995. When correcting for inflation this is an effective decline in funding of 55%.

Figure 6. Total number of boreholes and deep wells being maintained from 1985 to 1996 and the financial allocation to DDF (x \$1,000) for operation and maintenance.

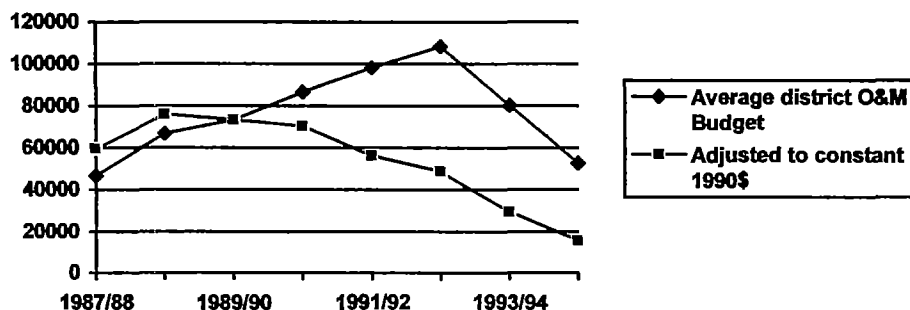


Critical to sustainability of the benefits of water and sanitation services is an effective operation and maintenance system. It can clearly be seen that the focus of the last decade has been on the development of new infrastructure with decreasing allocations for the maintenance of existing infrastructure. Experience from across Africa over the last two decades has shown the serious mistake of this approach where after only a few years new facilities are broken down and never repaired.

Taking the six districts of Matabeleland South as an example, the average amount allocated to each district from 1987 to 1995 is shown in Figure 7. It can be seen that there has been a decline in allocation in recent years and that taking account of inflation, the allocations for operation and maintenance have been dropping dramatically since 1990. This is despite the increase in facilities being constructed and added to the maintenance register.

SUSTAINABILITY: THE CHALLENGE

Figure 7. Average DDF district annual budget allocation (Z\$) for operation and maintenance in Matebeland South.



Despite these difficulties there are no reports of widespread pump breakdowns or a failure to repair large numbers of pumps. A field visit to 14 villages across seven provinces showed only 1 pump broken down of 33 seen (but see Box 8). This is quite an acceptable proportion although the sample is very small. It can only be assumed that the decrease in funding has been accompanied by an increase in efficiency on the part of DDF. However a contributing factor may be the increased amount of funding that has been channelled through the IRWSSP for pump rehabilitation and in some districts this will have improved the financial position of DDF as regards operation and maintenance (NORAD, 1994). A survey of 13 Districts showed spare parts to be in short supply in 9 districts, mainly attributed to a shortage of funds. Only in 5 districts were spare parts also available from organisations other than DDF (such as shops).

Box 8. The other side.

Handpump breakdown data from 2 study villages in Mutare District show high frequencies and some sources even going for 6 months without being repaired. The nature of breakdowns, however, varies from minor (simple leather cup replacements) to total rehabilitations. Two out of four deep wells in the communal village were out of order for five months as at the time of study. The two non functional deep wells may remain non-functional for a long period due to the lack of transport needed to transport the materials required, i.e. cover slabs, pipes and handpumps. The District Development Fund Field Officer indicated that the only lorry they had overturned and is awaiting repair. The main difficulty is that there is no money for the repairs and there are no indications that the government will provide some. The wells that were being rehabilitated have been deepened and await the delivery of slabs, pumps, pipes and other materials required from District Development Fund Head Office in Makomwe, about 40 kilometres from the village. The materials have been stocked there since October 1995. The materials include pre-casted slabs, pipes and pumps, which were seen piled in the stores during time of field study (Nhamo, 1996).

Community Based Management

In 1992 the DDF commenced a pilot project of a Community Based Maintenance system in Chivi District. This was in recognition of the need to adapt the existing 3 tier O&M system in the light of decreasing budget allocations, a drive towards decentralisation and the great increase in the number of primary water facilities to be maintained. An evaluation of this programme was carried out (Munro,

1993) and subsequently the pilot was extended to Beit Bridge. A further evaluation of the Chivi pilot project was carried out in 1995 (ZIMDEV, 1995) and in 1995 the CBM was extended to include a pilot project of two or three wards in every Province.

Box 9. CBM in Shamva.

A participatory Rural Appraisal was undertaken on a small scale in Shamva. It was found that generally people expected to pay for their water and they would rather pay and have a good service than have a free but poor service. It was surprising how many people understood the workings of a bush pump. Most people were confused over ownership as they had been told the borehole was theirs but they knew it was not really. There were a few who stated that water was from God and hence not to be sold.

Successes in Community participation

- The Water Point Committee have successfully rationed water this season resulting in fewer water points drying up this year.
- The water users of Mushowani pipe scheme paid \$634 towards their electricity when District Development Fund withdrew their funding.
- Resettlement farmers have repaired their borehole using their own spares (including leather cups and footvalves) and their own skills as DERUDE failed to provide the service.
- Chizanga Water Point Committee has \$1 000 in cash contributions towards water point maintenance.
- Kamudyariwa Water Point Committee traced their stolen water point fence
- Hore BC borehole has stopped using their washing slab as it was polluting a nearby stream.
- Chichara village has agreed to be entirely responsible for the recurrent expenditure of the Chichera pipe Water Scheme which is being rehabilitated. This was agreed to in the planning stage. The community designed the piped scheme themselves and are contributing to its establishment.
- Goora community are trying to take over their piped scheme belonging to the DWR because of poor service.

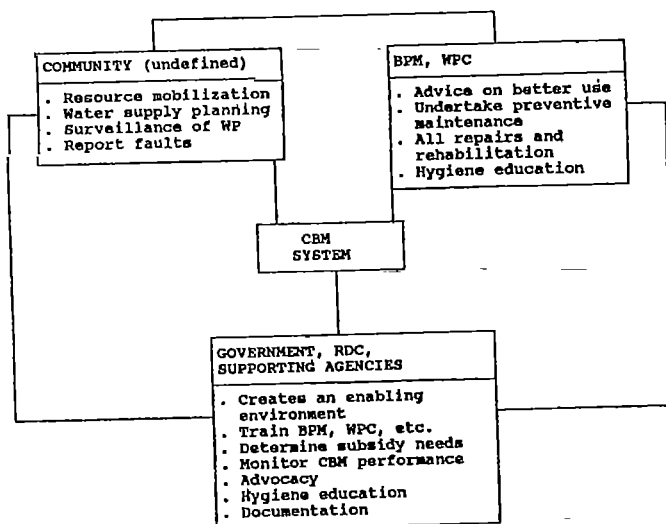
Failures

- work on the repair on Nkonkoni Dam was very slow due to the lack of participation by the community.
- some water points are in such bad condition it is not fair to hand them over to the community.
- there is a lack of uniformity in Community Based Maintenance - for example the World Bank funded emergency drilling programme completely ignored community participation and now there is no sense of ownership or responsibility.
- there is no formal policy which makes implementation difficult and implementors nervous.
- lack of co-ordinated approach due to a lack of policy
- some communities do not want the policy.

M Katsukunye

Aspects of CBM are shown in Figure 8. (ZIMDEV, 1995) however the actual roles and responsibilities of the different actors in the programme have never been clearly defined. The actual objectives of CBM, other than improved maintenance, have also not been clearly defined. This is evident in the continued shift in definition of the programme from Community Based Maintenance to Community Based Management which have quite different implications for the degree of community control and responsibility. However this also reflects the effect of the learning experience from the first pilot in Chivi and the willingness of DDF and the NAC to take on board the lessons to further improve the programme.

Figure 8. Relationship of the community, Pump mechanics, water point committees, government and Rural District Councils with the CBM system.



The findings of the evaluation of CBM in Chivi show very successful maintenance taking place, little attrition of the trained pump mechanics and finances being collected by the communities. On the other hand the report was critical of the organisational aspects of the programme which were weakening its effectiveness because of the following:

- inadequate provision of information on handpump maintenance and repair costs and its implication on CBM system. This incapacitated the community to make informed and rational decisions about CBM tasks and community's roles and responsibilities.
- lack of appropriate community education to facilitate community demand for optimum operational levels of handpumps and promote community willingness to take that responsibility.
- lack of CBM monitoring indicators in terms of content and process,
- little change in approach and support services from DDF who continue to operate in the CBM area in a manner similar to non-CBM areas. Bushpump mechanics are viewed by DDF as a replacement of the pumpminders. (ZIMDEV, 1995)

In reality at the present time the CBM programme has developed from a pilot project and is moving rapidly toward national implementation. Several Rural District Councils are taking the approach as the basis of the implementation of operation and maintenance for the decentralised IRWSSP which are being implemented through the RDC. The CBM is being freely modified and adapted in these circumstances and this may be a positive development. However, this approach runs counter to the very successful approach of the NAC in the past of assisting in the development of new policy, defining the framework of the policy

and assisting the implementors with supporting guidelines. The operation and maintenance strategy is central to the issue of sustainability and warrants more attention than is presently being accorded to it.

Box 10. CBM ON KEZI/MATOBO DISTRICT PIPED WATER SCHEMES

How it started

It all started when DDF maintenance funds could not cater for all the activities of a given piped water scheme. Communities in the various piped water schemes through their leadership (councillors) initiated the aspect of meeting Government half way by taking charge of certain activities within their reach. It was indeed circumstances that forced communities to chip in and take part in the sustainance of piped water schemes. Although there is up to now no policy on this issue by central Government the various communities having been faced with the situation of lack of funds to buy Diesel by DDF, found it necessary to pool financial resources and purchase the fuel since they badly needed water.

Prior to the introduction of CBM all the activities on each piped water scheme were in one way or the other borne by DDF. But after the introduction of CBM some form of partnership is in the division of responsibilities in the upkeep of the piped water scheme.

DDF:

- Purchase major spare parts not within reach of communities e.g. pumps etc.
- Do major repairs on engines
- Service of engines

COMMUNITIES:

- Collect maintenance funds through organised water point committees
- Purchase oil and diesel for engines
- Pay wages (monthly) to engine operator
- Purchase expendable minor parts like belts, nuts etc.

How they raise the money

Fund raising for the revolving maintenance fund is done by the elected water point committee through its treasurer. The contribution per month varies from place to place and ranges from \$2.00 per month per household to \$5.00. Defaulters are denied access to water and only the poor who can not afford the fee are exempted on humanitarian grounds.

A register of all subscribers is kept by the treasurer and the Ex-officio members of the water committees i.e. (councillors, headmen and kraal heads) all have access to such information so that they help strengthen the viability of such schemes. The traditional structure (chiefs and headmen) help to enforce by-laws concerning the management of piped water schemes.

D Luthe

DDF have been very effective in supporting districts with training for CBM and to a large degree this is contributing to the rapid adoption of the approach. Problems related to resistance to change from both DDF staff and communities may be partly allayed by the production of CBM operational guidelines which address issues of access to spares, future role of pumpminders, DDF financial support and major rehabilitation (NAC, 1996) amongst others.

Involvement of beneficiaries

Family owned facilities, such as the VIP latrine and the family well are maintained entirely by the family. There is considerable evidence within the family well programme of Mvuramanzi Trust of families maintaining their well. Various evaluations of the IRWSSP have shown that the latrines are being well maintained (TCWS, 1991, Mudege & Taylor, 1992, Jonga, 1996). The most common defects with latrines are the absence of a roof and broken or absent fly screen although the latrines are invariably in use.

A survey of latrine maintenance has shown that 84% of these receive some form of maintenance (Jonga, 1996). The same study showed that 52% of latrines were in good structural status, 24.4% were fair, and the remainder were in a poor state with over half of the examined latrines being constructed before 1989. There was no evidence that fly screen were being replaced when broken and privately constructed latrines generally did not have a fly screen fitted at all. The sanitation programme expects a family to replace a latrine once it fills and Jonga (1996) found that 68% of families expect to replace their latrine on their own.

Overall the sanitation component of the programme shows a high level of maintenance and willingness of communities to sustain the benefits by replacing latrines when necessary. A problem remains with accessibility to spares (fly screen), especially over the long term.

The difficulties being experienced in operation and maintenance are therefore associated with the communally used facilities such as boreholes rather than the family owned facilities. Primarily, this is likely to be associated with the ownership issue as family facilities are clearly family property whereas at the present time communally used facilities are not owned by the community. The moves toward community based maintenance are likely to require the transfer of the facilities to the community otherwise investment in improving and upgrading the facility will be lacking.

There are many examples around Zimbabwe where the community have taken responsibility for the maintenance of a community water supply. In the main these are piped schemes but there are valuable lessons to be learned from these as the NAC moves toward the development of an operation and maintenance strategy for the future.

Financing

The continued decline in finance available from central government for operation and maintenance (see section on the three tier operation and maintenance system) suggests that a point will be reached when large numbers of pumps will breakdown and not be repaired. It is surprising, given the already significant cuts in O&M budgets that such a small proportion of pumps are reported as broken down in district surveys. Although we are aware of one or two localities where the problem is worse, it suggests that improved efficiency of the system, has compensated for the reduced money available. Many of the pumps have been

installed within the last 4-5 years and therefore may be considered relatively new so this situation can only be expected to worsen as the pumps age.

In terms of government reform under structural adjustment, it would be expected that government will reduce spending on implementation activities such as operation and maintenance and hand these over to the private sector. What we have seen in the reduction of government expenditure is in conformity with structural adjustment but there has not been the required identification of an alternative financing system. It may be assumed that CBM, if nationally adopted, will result in the community paying for services but this has yet to become policy. An examination of the actual cost of handpump maintenance (Box 11) suggests that it would not be an unreasonable burden on the rural population. Given that the present method of implementation of the CBM programme continues to provide free spares to the community, the actual cost to the community could be even less. The evaluation of the CBM system in Chivi and Beit Bridge (ZIMDEV, 1995) revealed that communities were contributing between Z\$6 and Z\$20 per household per year whereas in Matebeleland South contributions for the running of piped schemes varies from Z\$2 to Z\$5 per household per month (Box 10). Clearly, the process of cost recovery is already a reality in some communities and the expected contributions may not be beyond the reach of others.

Box 11. BIKITA Bush Pumps: Annual cost of repair. (Source: B. Matthew, ODA, Bikita, 26/2/96)

	Z\$
Wages for DDF staff	73,800
Wages for DDF pumpminders	56,040
Vehicle costs	24,000
Office costs	2,400
Spare parts	96,647
GRAND TOTAL	252,887

484 Pumps in Bikita

At 250 people / pump = Z\$2.09 per annum / person

These calculations do not take into account the cost of depreciation and it is essential that a detailed analysis of expected costs is carried out to include depreciation as well as operation and maintenance. It is unlikely that donor support, or even much government support, will be available when a pump needs to be replaced and this issue needs to be addressed in the context of a sustainability strategy.

What is lacking at the present time in relation to the O&M strategy is:

- policy and guidelines on community management of their own water supplies;
- clarity on the future role of DDF and the RDC;
- a system for access to spares in districts where they are not stocked in shops;
- community access to technical services; and
- proposed options for financing.

The finances currently allocated to the DDF for O&M may be channelled to the RDC, if they are expected to assume an important management function, with DDF in turn being paid for technical support given to the RDC.

5. CHALLENGES FOR SUSTAINABILITY

Sustainability of the programme

Management. The IRWSSP originally had an overall goal of reaching all of the rural population with phase one by the year 2000 based on the information and approaches outlined in the National Master Plan (MEWRD, 1985). What has been lacking has been any update of the strategy to address the water and sanitation needs of the rural population of Zimbabwe. With the changing and dynamic state of the country as it endorsed the economic reform programme, many sectors have been left behind in terms of planning and the larger vision. The water sector has been leading the way in many respects in addressing the requirements of the new thinking but has not translated this at the higher level into an overall strategy.

Recommendations have been made for the programme to shift from a centralised implementation model to a model where the RDC assumes responsibility for provision of water supply and sanitation (Wangen, 1993). This is in agreement with central government policy on decentralisation and as also articulated by the NAC but the failure to identify how this is envisaged to happen and over what time period has a serious effect on the sustainability of the programme. The direction of the programme, toward management at the local level, has been agreed since 1990 and *the challenge remains, as it did then, to define the management and support structures as a guide to the transition from central government control to local control.*

The opportunity exists to increase accountability within the IRWSSP by shifting the focus of central government to one of facilitation and regulation and leaving the RDC as the responsible agency for execution. *This will require a new look at the role of the NCU and addressing the issue of its assimilation into the public service system.*

The envisaged management role of the local authority has been relatively clearly addressed in the RDC Act. *What is further required is to address not only the monitoring system for RDC executed IRWSSP activities but also the larger scope of rural water supplies and sanitation to include piped water schemes and the confusing management situation in growth points and service centres for implementation and management of both water supplies and sanitation services.*

Investment. Since the IRWSSP started in the mid 1980's the scale of intervention has increased from 3 or 4 districts implementing to over 30. The difficulties of coordinating and managing such a programme from national level are obvious, especially when there has been virtually no

change in the size of the NCU over the last ten years. The gradual shift of responsibility for implementation of IRWSSP from central ministries to the local authorities is an important step in enhancing sustainability whilst also recognising the responsibility of the local authority in service provision, and needs to be accompanied with capacity building of the local authority. In terms of maintaining the investment in water and sanitation several questions need to be addressed.

- *Where will the investment in primary services come from?*
- *What will be the balance between donor and national investment?*
- *What mechanisms can be used to increase national and local financing of the programme?*
- *What is the expected rate of achievement of sector goals in relation to the sector financing strategy?*

Virtually all of the investment in the rural water and sanitation programme at the present time is from external support agencies. There is no strong indication that these funds are reducing and to some extent Zimbabwe is not maximising the use of available funds. However, the population of Zimbabwe continues to grow at a fast rate and the present access to safe water of about 60% and sanitation of 30% suggests that investment will be needed for the foreseeable future at a high level. Mechanisms for local investment need to be addressed urgently so that those districts completing an IRWSSP or not yet having access to IRWSSP funding will not just come to a halt in service provision as is the present case. *The basic challenge for sustaining the programme lies not in the project funding of IRWSP but in the continued investment needed before and after these projects.*

Some districts already have access to funds from CAMPFIRE which could be used as part of a grant/ loan fund and the proposed development levy on water should have a proportion of these funds used for grants and loans for primary services. The initiative for service provision is shifting from the centre to the local authority but a role for the centre is to *establish financing mechanisms to encourage and assist the local authority and to promote equity between local authorities with differing financial bases.* Targeted and scaled subsidies may be one of these financial mechanisms and it is likely that subsidies will be needed for a considerable time to come for many underserved rural communities.

Financing mechanisms will need to be adjusted to maximise the leverage from government subsidies whilst at the same time shifting the initiative to a local level. This may allow the programme to speed up thus overcoming current government capacity constraints.

SUSTAINABILITY: THE CHALLENGE

Alongside this can be asked how the impact of the programme can be improved. The decentralisation of implementation to the RDC has the potential to allow a considerable increase in the outputs of the IRWSSP. In the past most IRWSSP have been unable to achieve their targets and have annually had quite high carryover of financial resources to the next year. Also the slow approval process has meant that projects may be in the pipeline for several years. Are there mechanisms to build on the RDC and allow the local authority to source its development finance as do the larger local authorities of towns and cities? Development may then take place at the rate determined by the capacity of the RDC. Similarly, the thrust toward community management of the water and sanitation services requires that the community desire and accept responsibility for the infrastructure. Development at community level must therefore also take place at a speed which is commensurate with the capacity and demand of the local community. A sustainable programme which also moves at the fastest pace will therefore be one which uses strategies facilitating local initiatives through appropriate financing mechanisms and timely technical support. *The challenge here is to design a programme with a strategy which emphasises and facilitates local initiative, whether from the RDC or from the community itself.*

Sustainability of the infrastructure

Water supplies. A high proportion of piped and handpumped water supply systems are working despite the dramatic decrease in operational funds of DDF and the financial difficulties of DWR. The shift of an operation and maintenance strategy from one of centralised O&M to a decentralised, community based system is underway in DDF managed systems but not in DWR managed supplies. No clear policy has been adopted as to where this element of the programme is going. DDF have several "pilot" wards in districts throughout the country and several of the newly decentralised RDC implemented IRWSSP are implementing community based management throughout the district and not as a pilot. As DDF runs out of funds for piped schemes communities are being asked to contribute diesel and thus community contributions increase.

These examples are of change, of increased community responsibility, of payment for services but they are happening as a response to crisis or as the expansion of a pilot project, rather than in a planned programme to implement a defined operation and maintenance strategy. *The challenge is to define the operation and maintenance strategy in such a way that it is clear:*

- *what services the community are expected to provide*
- *what the community is expected to pay for*
- *what services government will provide*
- *what the role of the local authority will be*

and to implement this through all relevant agencies including DWR, local authorities and NGOs as well as DDF.

Rural District Councils are charged with the responsibility for the provision of water and sanitation services and therefore would be expected to contribute significantly to the definition of the operation and maintenance strategy.

There is no evidence that there are serious technological constraints affecting sustainability. The major technologies used in the water and sanitation programme are locally manufactured and spare parts are readily available, although not always at local level. Additionally, there have been new developments for more user friendly maintenance. The DDF training of pumpminders and more recently of pump mechanics, show that local people can readily be trained in repair of the infrastructure. Whilst technological support is an important element of a sustainable system, the most important elements requiring attention relate to management issues. It should be noted that the technology choice is likely to widen as communities assume more responsibility for determining their desired service level.

Sanitation. Sanitation coverage remains low and for various reasons such as limited supplies of cement, the programme has not succeeded in meeting the demand of those willing to construct a latrine. One specific concern of the donor community has been the lack of any identifiable measure of progress. When will the programme stop? How much of the country has been covered? The way the programme is implemented, no area is ever 'completed' and therefore progress is difficult to determine.

The slow rate of construction can mean population growth rate exceeds increase in coverage. Latrines may be filling or falling down, there is no system of removing these from the inventory and the same family may apply for a new subsidy in a later phase of the programme.

Operation and maintenance is left entirely in the hands of the family and in this respect this element of the water and sanitation programme is completely and successfully, community managed. Evaluations of IRWSSP have shown family latrines to be well maintained. Sustainability of the benefits of the sanitation programme would therefore not appear to be an issue and indeed more effort should be made to learn from the example of this element of the programme. If anything, *the sanitation component of the IRWSSP could be achieving even more if the constraints of access to the subsidy could be reduced.* This again points to a review of the financing and support mechanisms.

Community Based Management. Community Based Management is viewed by government as an opportunity for capacity building of communities both in terms of knowledge and skills transfer, and a sense of ownership. It is being applied to maintenance of small dams, handpumps and piped schemes and is being promoted widely. *The challenge for improved sustainability is to address the findings of the latest evaluation (ZIMDEV, 1995) and shift the emphasis from a pump repair system to more of a water supply management system.* This would imply adjusting the focus more in line with the vision 2000 of management of facilities at the local level and not just maintenance. As stated earlier *there is an urgent need to prepare guidelines for introducing, implementing, monitoring and managing water and sanitation services in the context of CBM.* The transition to a full community managed system may be over several years due to a variety of constraints, but these constraints should be identified in the sustainability strategy and the required compensatory measures proposed.

Management. The management of water and sanitation services in rural communities has been alluded to in several of the above points. However it is necessary that a specific section is devoted to this aspect. At the present time the RDC Act places the responsibility for the provision of water and sanitation services in the hands of the local authority. There are conflicting statutes which, for example, give DDF the responsibility for maintaining rural water services. There are also several agencies at the present time who are maintaining water and sanitation services under a variety of management systems. The Central Rates Fund operates and maintains water and sanitation systems in growth points and service centres; the DWR maintains water supply systems in growth points, service centres and some villages, as do DDF; the local authority itself operates and maintains water and sanitation systems; the community operate and maintain water and sanitation systems; and for government complexes the MPCNH also operate and maintain water and sanitation systems. Each of these agencies operate on different systems of management and tariffs with varying degrees of cost recovery and efficiency.

It is counterproductive to consider transferring the responsibilities for these facilities to the local authorities without first addressing the uniformity of the management and financing systems already in place as well as the issue of capacity building within the local authority. *The challenge therefore is to agree on basic principles to be adopted in the management of all water and sanitation services for rural communities.*

The present system of decentralising implementation and handover of existing systems, without addressing the operation and maintenance of

existing services, is likely to place the RDC in a difficult if not impossible situation as they try to implement cost recovery.

Monitoring

The annual sector review meeting of November 1994 (NAC, 1994) gave attention to the sustainability issue and recognised the need to develop national progress and impact indicators for sustainability. *The final strategy document on sustainability to be produced by the NAC should contain these indicators which should be built into the monitoring and reporting system for the national rural water and sanitation programme.*

It should be recognised that at the local level monitoring systems are even more important and attention should be given to assisting local authorities to develop an effective monitoring system. The present situation of unreliable data concerning achievements of the programme is only partly being addressed by carrying out consultative inventories and requires a more effective monitoring system.

Capacity building.

A cross cutting issue to be addressed is capacity building to deal with the changed roles and responsibilities accompanying the decentralisation process and the movement toward enhanced sustainability. Capacity building needs are not limited to the RDCs who require skills in technical areas as well as management, but also includes government personnel. The changed role of Government with increased attention to the regulatory function and the facilitation role, is likely to be associated with institutional reform as well as a reorientation of existing staff. *Within the process of developing sustainable systems therefore, the implications of reallocation and redefinition of roles and responsibilities should be explored and a programme developed to address the consequential capacity building needs.*

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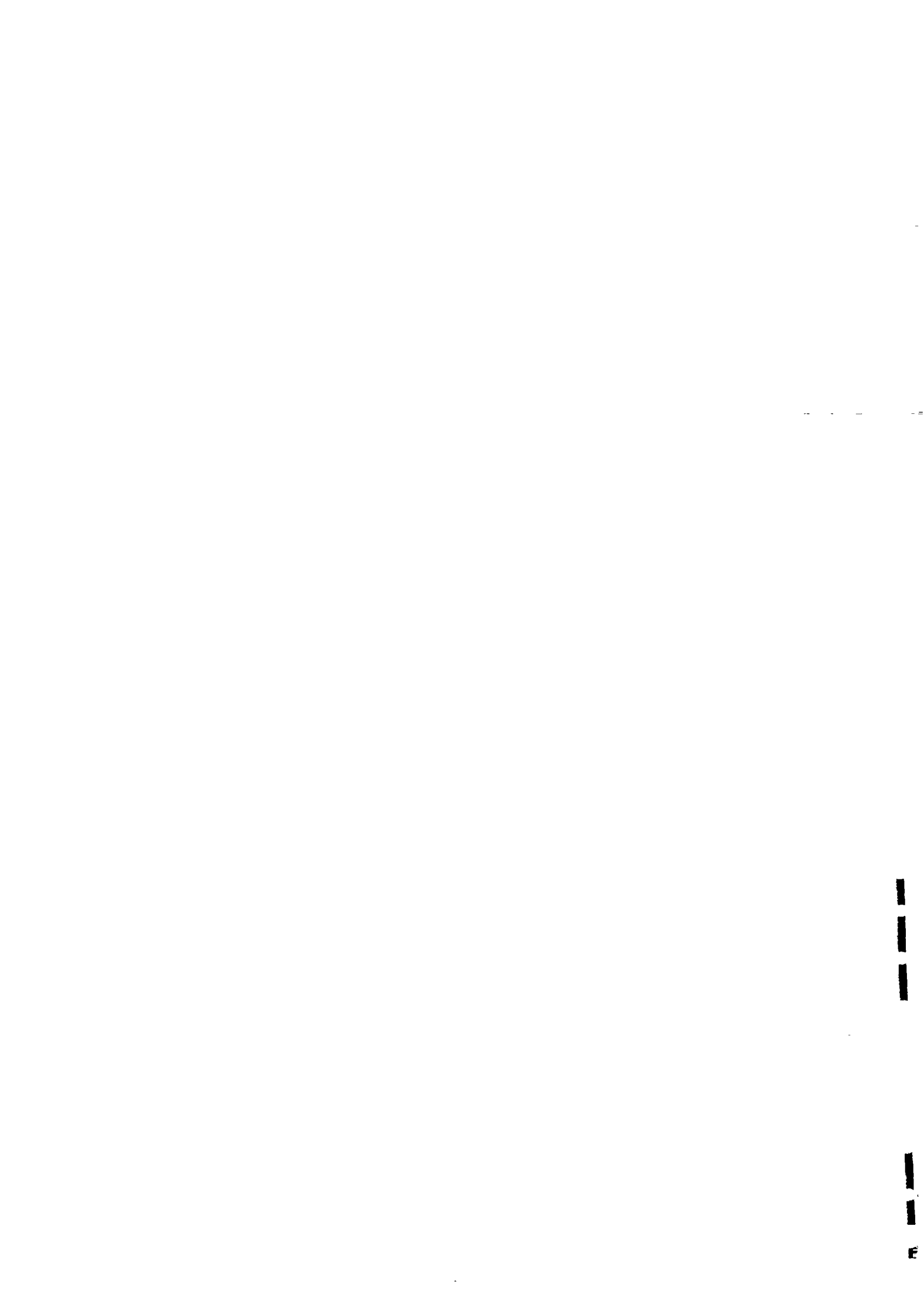
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Abbreviations

CBM	Community Based Management
DDF	District Development Fund
DWR	Department of Water Resources
IRWSSP	Integrated Rural Water Supply and Sanitation Programme
MOHCW	Ministry of Health and Child Welfare
MPCNH	Ministry of Public Construction and National Housing
NAC	National Action Committee for Rural Water Supply and Sanitation
NCU	National Coordination Unit
NGO	Non-Government Organisation
O&M	operation and maintenance
PSIP	Public Sector Investment Programme
RDC	Rural District Council
SWU	Shallow Well Unit
VIP	Ventilated Improved Pit (latrine)
W&S	water and sanitation
WSSC	Water and Sanitation Sub-Committee



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