Ireland Aid

Policy Guidelines on Water Supply and Sanitation

December 1999

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Water supply and sanitation

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List of abbreviations

DRWS	Department of Rural Water Supplies (Lesotho)
DWA	Department of Water Affairs (Zambia)
D-WASHE	District WASHE Committee
MoH	Ministry of Health
O&M	Operation and maintenance
PHE	Participatory Hygiene Education
POCMUS	Promotion of Community Managed Urban Services (Zambia)
PRA	Participatory Rural Appraisal
VWC	Village Water Committee
WASHE	Water, Sanitation and Hygiene education
WSS	Water supply and sanitation

Section 1

Introduction to the Policy Guidelines

1 Introduction to the Policy Guidelines

1.1 Why the Guidelines are needed?

Irish Aid is involved in the Water and Sanitation sector in varying degrees in its six priority countries, as shown in table 1. To ensure that support in the different countries follows the same principles, there is a need for guidelines to assist Irish Aid staff to understand the nature and scope of future involvement in this sector. The guidelines are also an opportunity to summarise the experience gained by Irish Aid and its partners over the past twenty five years, as well as sharing the lessons learned by other practitioners in this field. The guidelines will assist in assessing ongoing projects and in evaluating projects that are concluded and most importantly assist in identifying the type of involvement for Irish Aid in the future.

These guidelines form part of an effort to improve the operational capacity of Irish Aid programme, in which a series of sectoral and thematic policy documents have been and are being prepared. These will cover crosscutting issues: gender and environment and the other key sectors of health, education and roads. All these are available for Irish Aid on request.

1.2 How the Guidelines were developed

The development of the guidelines took place in the following phases:

Phase 1: Desk Review

The IRC International Water and Sanitation Centre was requested to undertake a documentation review of Irish Aid involvement in the WSS sector, and to have discussions with staff at Irish Aid headquarters. The objectives of the review were: to provide an overview and analysis of Irish Aid experiences in the WSS sector reflected against internationals trends and experience; and, to make recommendations for developing policy and policy guidelines for Irish Aid in the WSS sector. The outcome of the exercise was a two volume document that synthesised all reviews and evaluations to date and highlighted elements for a water policy.

Phase 2: Field Trips (Lesotho, Uganda, Zambia, Zimbabwe)

For the second phase, from February to May 1999, a field study was undertaken to complement the documentation review. The main reasons for the field study were: to reflect the review and experiences of the project stakeholders; to improve information available on project performance and impact; and, to involve key stakeholders in policy formulation. The countries that were finally selected were Lesotho, Uganda, Zambia and Zimbabwe based on the innovative characteristics of the WSS projects in these countries. The outcome of these trips was included in Volume II of the review, as an addition to the annexes on individual project reviews. A less tangible output was to familiarise the IRC consultant with Irish Aid programmes and to prepare her for the facilitation of the workshops.

Phase 3: Guideline Workshops and Document

Workshops on issues to be covered in the guidelines were held in each country visited, except Zimbabwe, and were attended by project staff, government officials and Irish Aid staff. A final Workshop was held in Lusaka in which representatives from all Irish Aid priority countries (except Tanzania) were present (a list of participants is enclosed as annex 1). During this workshop, presentations on Irish Aid approaches in each country were given and discussions were held on selected topics where experiences were exchanged and compared. In addition, the objectives and principles of the sector policy were discussed at length as these form the basis of the policy. The key outcome of the meeting is this document that has been circulated for comment and will be adopted as the first set of WSS guidelines for Irish Aid.

1.3 How to use the Guidelines

The guidelines aim to be useful at all levels of Irish Aid and should provide clear and practical guidance to our staff on future funding and policy in this area. Section two provides some background and emphasises the key lessons that have been learnt in this sector, which should be useful to those who are new to the WSS sector. Section three is more operational and should assist Irish Aid programmes to assess which activities they wish to assist at a project, programme or national level. The guidelines are suggestions and in some cases will be more relevant to our partners as Irish Aid adapts a more supportive role. However in order to share the value of our experiences, clear indications of best practice will be useful.

Section 2

The Water Supply and Sanitation Sector

2.1 What is the water supply and sanitation sector

The water supply and sanitation sector comprises water supply for domestic use; small scale productive use; the disposal of waste water, excreta and solid waste; and , hygiene behaviour to support the benefits of water supply and sanitation (see Annex 2 for a more elaborate description).

2.2 Why is Irish Aid in the WSS sector?

Drinking water in sufficient quantity and quality is a **basic human need** and is also one of the major determinants of sustainable development. The immediate benefits of an improved water supply range from increased access to water in greater quantity and closer to home to a better water quality. The immediate benefits of improved environmental sanitation range from the convenience and privacy of a nearby latrine to generally improved environmental health conditions.

These improvements often create a situation where greater and longer-term benefits can be achieved in the framework of **poverty alleviation**. These are benefits to health, savings in time and effort and possibilities for productive use, leading to economic and social benefits as well as improving food security.

Apart from its importance as a contribution to poverty alleviation and the improvement of quality of life, the water and sanitation sector can contribute to the **improvement of health**. Insufficient or contaminated drinking water and the absence of hygienic sanitation are to a large extent responsible for the high morbidity and mortality in developing countries.

2.3 International developments in the sector

A detailed discussion on the historical trends in the sector is given in the 'Synthesis R', but a summary on the developments over consecutive decades is given below:

1960's The establishment of drinking water supply and sanitation provisions was approached with an engineering view. The focus was on water supply facilities, with imported technologies which led to a lack of spare parts and non functioning water systems.

1970's Social aspects become important with the introduction of community mobilisation and participation strategies. The importance of also providing safe waste disposal and changing hygiene behaviour were recognised as key to improving health. Water was recognised as an economic good and the need for cost recovery became an issue.

1990's The environmental aspects came to the forefront particularly in relation to sustainability. The importance of using local expertise, skills and institutions has been recognised. The provision of safe and sufficient WSS facilities has to be placed in the wider context of integrated water resource management. Finally, sustainable use and functioning of WSS provisions requires a demand responsive approach with full participation of the societal and public sector actors.

A number of international conferences and meetings have influenced policies and practices in the WSS sector over the last decades. Below, a few of these are mentioned with the main outcome with respect to international policy in the sector.

International event	Date	Outcome
Mar del Plata Conference	1977	• Recognised the need for reliable drinking water and sanitation
Water Supply and Sanitation Decade	1980 - 1990	• 1.2 billion more people access to adequate and safe water supply facilities • 770 million more had sanitary facilities • development, promotion and acceptance of modifications in technology, allowing for simple and low-cost options • Acceptance of the role of users at all stages in the project cycle also increased • hygiene education became a part of WSS programmes.
Global Consultation on Safe Water and Sanitation for the 1990s (New Delhi)	1990	• water development and management should be based on a participatory approach • women play a central role in water management • decentralisation to the lowest levels possible
International Conference on Water and the Environment (Dublin)	1992	• cost recovery • the need to regard water as an economic good • the application of appropriate technologies • the integration of water and sanitation with environmental management and health
United Nations Conference on Environment and Development (Rio de Janeiro)	1992	• 'new' focus on water resources management.
Ministerial Conference on Drinking Water and Environmental Sanitation (Noordwijk, the Netherlands)	1994	• focus on more effective and efficient use of natural resources and existing water and sanitation facilities in order to benefit as many users as possible • "Some for all rather than more for some".
World Summit for Social Development (Copenhagen)	1995	• 20/20 initiative: Donors reserve 20% of their development co-operation budget for basic social services, and the recipient countries do the same with 20% of their national budget. Water supply and sanitation are considered a basic social service.
World Water Partnership and the World Water Council	1996	• established as international water policy think tanks, advocacy instruments and fora for discussions and exchange of experiences. • The focus of these two institutions is on water resources management, and includes drinking water supply and sanitation concerns.

2.4 Irish Aid in Water Supply and Sanitation

An overview of the Irish Aid programme is given in box 1. Ireland Aid has made a commitment to aim at maintaining a high level of expenditure to meet basic needs such as clean water supply, health care, and primary education of poor populations. Ireland Aid has been involved in a wide range of activities within the WSS sector, ranging from community based activities to national level institutional development initiatives, through varied modalities of implementation, and covering a wide range of technology options particularly for water supply systems. Therefore, Ireland Aid activities in water supply and sanitation have often been supportive to complement health and education activities, such as providing water for schools and hospitals. On the other hand, involvement in the WSS sector has been in response to needs and requests identified in the various countries themselves.

Through its Bilateral Support Programme, Ireland Aid is or has been involved in 29 drinking water and/or sanitation projects in 10 countries, namely Ethiopia, Lesotho, Mozambique, Tanzania, Uganda and Zambia (the priority countries), and Kenya, South Africa, Sudan and Zimbabwe. Usually support through the Bilateral Support Programme is in the form of funds (often for hardware) and (Irish) technical assistance. Furthermore, Ireland Aid is funding NGO activities in the WSS sector through the NGO Co-financing Scheme.

Box 1: An overview of Ireland Aid

Principles of Ireland Aid

Ireland Aid's policy, as laid out in the 1993 strategy paper was based on the following priority issues and principles:

Need/Poverty Focus, Self Reliance, Partnership, Gender and Environment, and Loans versus Grants

Additional issues identified by the 1996 White Paper on Foreign Policy, were:

Human Resources and Food Security

Instruments of Ireland Aid

In order to implement its policy, Ireland Aid employs a range of instruments through which it administers its aid activities. These include:

- Direct bilateral support for development projects; sectoral budget support and debt relief in developing countries;
- The provision of technical assistance;
- Co-operation with NGOs;
- Support for the activities of international organisations;
- Co-financing with a number of international agencies (principally the World Bank Group);
- Provision of emergency humanitarian assistance in response to natural and man-made disasters in the developing world

Budget

Ireland Aid's budget has grown from £40 million in 1992 to £137 million in 1998. Bilateral aid, which focuses on basic needs in the least developed countries is more than 50% of the budget, of which around 15% is committed to the WSS sector.

Budget for WSS

The Ireland Aid budget for water supply and sanitation has gone up from US$ 0.8 million in 1986/7 (3.0% of the budget) to US$ 1.1 million (3.8%) in 1995 (Development Assistance Committee, 1995). At Ireland Aid headquarters, it is estimated that the WSS budget will continue to grow because of the increase of the total ODA budget. However, as percentage of the total budget it is not expected to change significantly. A breakdown of budget expenditure by country is given below.

Table 1 Percentages of country budgets for the WSS sector

Priority countries	% on WSS of Country total for 1998
Ethiopia	12.1
Lesotho	17.5
Mozambique	3.6
Tanzania	13.1
Uganda	4.2
Zambia	32.9
Other countries	
South Africa	12.7
Sudan	34.1
Zimbabwe	68
NGO (for 1997)	5.3

Source: Review of WSS Sector

2.5 Key lessons from Ireland Aid experiences in the WSS Sector

2.5.1 Integration of water, environmental sanitation and hygiene education

1. Ireland Aid and international experience has shown that improvements in water alone do not necessarily result in improvements in health and that a **simultaneous improvement in sanitation and hygiene behaviour** optimises the effect of the intervention. In the newer programmes such as in Uganda and Ethiopia, integration of water, environmental sanitation and hygiene education is already taking place, but in some older programmes this is more difficult as the interdepartmental co-ordination necessary for such integration does not exist in all countries.

2. **Effective hygiene education** requires knowledge and understanding of possible barriers and resistance to behavioural change and factors that may facilitate the adoption of new behaviour.

2.5.2 Community participation and management

1. **User participation** is the cornerstone of all interventions supported by Ireland Aid. There are different degrees of user participation between and even within the countries supported. Experience has shown that the objective of the participation has to be clear right from the start and that user participation needs to be incorporated in all phases of the programme cycle.

2 **Community management** is a form of user participation in which the community takes the final decision on all aspects in the planning and implementation of the water supply system and in which the responsibility for operation and maintenance of the constructed system lies with the community. Key elements in community management are information and capacity building.

3. **The role of Ireland Aid** has changed from top down implementation, to a more demand responsive and integrated approach.

2.5.3 Gender

1. In all present programmes, **the pivotal role of women** in water and sanitation is being recognised, as well as the different roles of men and women in the implementation, operation and maintenance of water and sanitation systems, in accordance with the Ireland Aid Gender guidelines. In all programmes, considerable effort has been put into increasing gender awareness with programme staff and committees and to operationalise this.

2.5.4 Institutional arrangements

1. In most of the countries where Ireland Aid is active, **decentralisation** of planning and decision making is government strategy. The approach of Ireland Aid to assist local governments in financing their integrated package of development, based on their development plans is important for these governments. However, in the long term, neither projects nor the sector as a whole are sustainable if they depend almost exclusively on donors for long-term support.

2. A second key lesson in decentralisation has been the need to increase the **capacity of the local governments** to plan, implement, supervise and monitor the development activities and to support the communities in the management of their infrastructure.

3. Decentralisation goes hand in hand with **inter-departmental participation and co-ordination**. Success in this area has depended on strong district administrations; where this has been weak, it has led to the marginalisation of the social side of the activities with consequent implications for the sustainability of the interventions.

4. The private sector brings potential advantages of **flexibility and cost effectiveness** to both construction and operation and maintenance activities as it often has a far greater incentive to complete a job well and in time than government: they need to make a profit. At the start of this process, there are many difficulties such as lack of manpower, funds, quality and competition, but the trend away from government has been positive.

5. In more **remote districts or low-income urban areas**, the private sector has not always viable and NGOs have been used.

6. National water and sanitation agencies must retain **regulatory control** and monitor the activities in the water and sanitation sector. Experience shows that if the private sector activities need to be promoted, safeguards must be instituted to ensure cost-effective minimum standards of work.

2.5.5 Financing and cost recovery

1. In its countries of support, **Ireland Aid funds basic communal water supply** and (institutional) latrine coverage. All service levels above this have to be paid for by the users. In funding, a distinction is made between funds for capital costs and funds for recurrent costs, which are not provided by Ireland Aid. In all countries, traditionally governments and/or donors have been the sources of capital funds, but there is now a trend towards asking the community to contribute as well.

2. As a matter of principle, **recurrent cost** such as the direct and local-level cost involved in the operation and maintenance of water supply and sanitation systems are paid for by the users in all countries.

3. The selection of technology for a water and sanitation system is based on what **users can afford and are willing to pay**, as well as what is reliable and proven.

4. With regard to household **latrines**, the approaches in the different countries vary quite a lot. But in all sanitation has lagged behind considerably. Therefore, targeted subsidies may have to be given in very poor areas where the cost of cement or the environmental conditions prevent people from making an improved latrine.

2.5.6 Technology choice for water and sanitation

1. In all countries, the **use of simple, low cost and appropriate water supply technologies** is promoted in Ireland Aid supported programmes. Wherever springs are available, and can be protected from contamination, they are the first source to be considered because it is a relatively cheap technology, and it is easy to operate and maintain, while acceptability is generally very high because people have always used the springs.

2. Hand-dug or hand-drilled wells are the next option in terms of **technology level** but in some countries, like Zambia, groundwater conditions appear to be changing and water levels may be dropping not just seasonally, but over long periods of time. Thus, the life expectancy of wells is now being considered both in the choice of technologies for the future and in plans for major future investments. In Zambia this situation is leading to an increase in the drilling of boreholes.
3. All types of **water lifting systems** are found in the different countries, such as windlass with bucket and chain, bucket pumps and hand pumps. In general, the programmes follow the standardised technology promoted in the country.

4 In remote, dry, sparsely populated areas, often **open-air defecation** is practised and the need and demand for sanitation systems can be very low. In such cases, promotion of latrines can better be replaced with promotion of hygiene behaviour.

5 In Lesotho and in Zimbabwe, government promotes the VIP **latrine technology** and in Zimbabwe also gives a subsidy for this system. Because the technology is expensive, the people do not construct systems outside a subsidy programme. Since none of the countries has the funds to subsidise all rural areas, it is debatable if these systems should be promoted exclusively. In Uganda and Zambia, the much cheaper san-plat system to improve traditional latrines is quite well accepted and people also build these systems outside the government subsidised programmes.

6 **Solid waste disposal** has been incorporated in the hygiene education programme in all rural programmes in the form of digging of waste pits and burning of waste. Community based activities in solid waste disposal have only been carried out in the urban upgrading programmes when it became a priority for the community and was done in connection with other programmes.

2.5.7 Sustainability

1. In most Ireland Aid programmes, sustainability is addressed as **technical sustainability** focussing on operation and maintenance (O&M). But experience (both Ireland Aid and international) shows that a focus on operation and maintenance does not guarantee sustainability. Also social and behavioural sustainability, financial sustainability, institutional sustainability and environmental sustainability have to be taken into account.

2. A system is likely to be sustainable when it is selected on the premise that it has to be low-cost, simple and appropriate and is moreover in accordance with what a community wants and based on what a community can afford in terms of keeping the system in operation. The presence, training and paying of **people to maintain the system** is crucial.

3. Where more complicated water supply systems are in operation, the issue of maintenance and **spare part availability** becomes even more crucial. All countries supported are in the process of establishing means for communities to obtain spare parts relatively easy and affordable, but in all countries this is a major difficulty, especially where districts are large and access is difficult.

2.5.8 Management

1. **Capacity building** in most programmes is looked at in terms of human resource development but also in terms of facilitating government/ institution staff to carry out their responsibilities. This is necessary because of the focus on relatively neglected and remote areas, which have limited access to vehicles, motor cycles and office equipment. The operation and maintenance cost are borne by the government agency, but in some places already this is a responsibility that the agency finds hard to carry, as income is very limited.

2. **Training of staff** is being done at different levels and as much as possible within the country or the region. With decentralisation the need for training support is becoming very clear. One of the problems experienced with this, is the lack of training capacity in the country itself. The assumption that district level staff trained in certain technologies or methodologies, are automatically able to train lower level staff in turn, does not hold.

3. **Technology transfer,** such as training a mason in protecting a water source is rather effectively being done in all countries covered, through the lower level district engineer staff. But, the training in a **certain approach,** such as Participatory Rural Appraisal or Participatory Hygiene Education requires much more effort and much more follow-up and monitoring.

4. **Training of water committees** is part of all programmes, but does not get sufficient emphasis and again is often done through staff that has not undergone sufficient training themselves or do not have sufficient time to carry out the training well. This makes the monitoring of the training efforts a crucial issue.

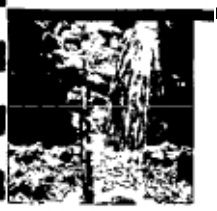
5. **Management information systems** were not part of any of the programmes in the past. However, this is rapidly changing and in Lesotho, Uganda and Zambia more emphasis is being put on monitoring the ongoing activities through different kind of systems.

6. In the past, Ireland Aid activities have been concentrated on implementation at district or provincial level without being much involved in **sector reform** activities. This is now changing, especially in Zambia where Ireland Aid has built up so much experience over such a long period.

7. Donors now have much more interaction and co-ordinate their activities and support to the national government. Where Ireland Aid is a major donor, like in Lesotho and Zambia, they have a distinctive role in this **donor co-ordination.**

2.5.9 Integrated water resources management

1. More attention is being paid in Ireland Aid programmes to **water resources management** as a result of changing environmental conditions. The use of **alternative sources for water supply** to protect the environment is also gaining ground in some Ireland Aid programmes.



Section 3

Policy for the Water Supply and Sanitation sector

3 Policy for the Water Supply and Sanitation sector

3.1 Principles for the Water Supply and Sanitation sector

Poverty reduction

1. Ireland Aid recognises access to adequate water and environmental sanitation as a basic right, a basic need and as a key input for social and economic development.
2. Ireland Aid recognises that scarce resources in the WSS sector have to be directed towards areas that are disadvantaged and towards those who are shown to be in greatest need
3. In accordance with Ireland Aid Health Guidelines, the health and quality of life of people in developing countries will be improved through providing support to water and sanitation initiatives (see Health Sector Guidelines)

Partnership

4 In all countries Ireland Aid will follow the national policy in place for the water and sanitation sector

5 Any activities supported directly or indirectly by Ireland Aid will take place through partnerships both public and private and at all political levels

6 Community participation is a cornerstone of all supported interventions and is seen as a process of empowering a community

7 The use of participatory tools and an information and communication strategy will have to ensure that all target groups are reached in an effective manner

Sustainability

8 Ireland Aid assistance will be provided through local institutions, in line with available capacity and in response to demand. All supported programmes will give attention to capacity building for long term sustainability within the framework of a co-ordinated approach

9 Technologies promoted in the programmes have to be affordable, acceptable, accessible and appropriate

10 Water, environmental sanitation and hygiene education are interrelated, have equal importance and cannot be addressed in isolation

Environment

11 Drinking water supply and environmental sanitation are integrated in a holistic approach to water resources development and environmental management

Gender

12 Supported projects will follow the Ireland Aid gender guidelines on WSS. The thrust of the guidelines are that women have to be specifically targeted and enabled to have key positions in the management of WSS facilities but that men should not be excluded

3.2 Objectives

Development objective

To support the development of water supply and sanitation in developing countries in a manner that conforms with national policies and that facilitates access to these resources by those who are disadvantaged

Specific objectives

1 To promote the development of structures, processes and policies for WSS at national and at local level
2 To strengthen the capacity within the government to support communities in WSS developments
3 To increase the financial organisation capacity at government and community level
4 To strengthen the awareness on the environmental impact of water supply, sanitation and waste water and on long-term sustainability of water resources for all uses
5 To support communities in establishing priorities and making informed choices on the type and level of services
6 To promote changes in hygiene behaviour
7 To support operation and maintenance systems at community level

3.3 Guidelines to achieve the objectives and implement the policy

3.3.1 To promote the development of structures, processes and policies for WSS at national and at local level

Most of the countries that Ireland Aid supports either already have a water and sanitation policy, are in the process of formulating such policy or are adapting the policy to meet international trends. While this process in itself is to be supported, attention needs to be given to the translation of policy into practice. Too often, the paper policy is invisible at the field level. For this political support is needed, while structures and legislation may have to be adapted to enable the operationalisation of the policy.

If the national policy in place for water and sanitation in a country is not in line with the Irish Aid policy for the sector, there are two possibilities. The first is not to support the water and sanitation sector in the country. The second is to concentrate on certain aspects in the national policy that are in line with the Irish Aid sector policy. Irish Aid will not implement programmes that clash with the national policy.

The potential for developing sectoral programmes in this area should also be explored. At a national level there will be a need to monitor what resources are being given at a national level, both in terms of skills and budget allocations. It is recognised that the potential, due to a lack of policy or absorptative capacity, to promote investment in the sector will vary from country to country.

The enforcement of the policy equally needs attention as lack of compliance with the policies by, for instance, donors frequently occurs. This leads to confusion and difficulties in following the policy with regard to technologies, cost recovery, management practices or institutional support at local level.

Approaches and technologies in the water and sanitation sector are constantly being changed and adapted. This means that sector monitoring and evaluation deserve emphasis. Systematic but simple and easily implementable monitoring is proving to be an indispensable management tool at key stages of water and sanitation programmes. Monitoring supports a process of assessment, analysis and action and can include use, hygiene and O&M indicators. Communities can effectively play an important role in monitoring, bringing significant benefits. In this context there is a shift from monitoring only on the basis of budget disbursements and achievements of physical targets to the assessment of also efficiency, effectiveness and the benefits of programmes.

These monitoring and evaluation activities can also indicate that technologies available are not appropriate. In such cases, research and development needs to be stimulated for the development of appropriate products and systems and the adoption of new technologies. The exchange information and research outputs will enhance this development and this has to be done as much as possible within the country, within the region and between regions. The involvement of local research institutions and the establishment of networks of research and information exchange will stimulate the use of the results directly in the country.

Guidelines

Ireland Aid will:

- Stimulate the establishment of an advocacy policy to create awareness among policy makers, politicians and civil servants of the importance of the sector for the development of the country and to raise its profile
- Support the development of an enabling policy and legislative environment, such as guidelines on drinking water quality, but also legislation that supports community ownership of water and sanitation systems
- Promote national coordination among donors and between donors and the country to ensure that support is harmonized in terms of types and conditions for support
- Support the standardization of technologies applicable in a country, but based on the premise that these have to be affordable, acceptable, accessible and appropriate
- Provide assistance to the establishment of monitoring systems that include assessment of efficiency, effectiveness and benefits of programmes at different levels, with indicators that are formulated and monitored at the lowest possible level
- Regularly evaluate the programmes with the aim to also transfer positive experiences from one programme to another within the country or within the region
- Support the establishment of information networks among agencies, resource centres and sector professional organisations.
- Facilitate research and development of appropriate products and systems and the adoption of new technologies, based on need and demand identified in the field.

Examples of best practice

Influencing national policy

Many of the Ireland Aid staff, expatriate and local, feel that they have to become much more involved at the policy and sector reform level to ensure that the experiences at field level get properly transferred to the policy level. Indeed, it is much more difficult for district staff to get such influence at the national level and therefore Ireland Aid staff feels that they can carry out this role.

Monitoring for effectiveness

In Zimbabwe, systems are being rehabilitated in a 'community based way' and it is expected that the communities will feel ownership and the responsibility and ability to take care of operation and maintenance after the rehabilitation. However, when a district was visited, it became clear that rehabilitation had been top-down and that, like before, the community was unlikely to carry out operation and maintenance themselves. Neither the district staff, nor the community had ever thought of monitoring for effective use and maintenance.

3.3.2 To strengthen the capacity within the government to support communities in WSS developments

Water supply and sanitation problems are mostly local. When it is accepted that water and sanitation interventions have to be based on community demand and community management, then the role of the government has to change from provider of services to facilitator of planning, management and service support. The management of this facilitation also has to decentralise to the lowest possible level to enhance efficiency and effectiveness.

However, these lowest government levels (district or sub-district), often do not have the financial autonomy and capacity (in terms of transport, equipment and human resources) to carry out this role. This situation is exacerbated by the fact that often the higher government level (such as provincial level authorities), which is supposed to guide the performance of the lower level, is over-stretched and under-trained and basically facing the same problems. Training activities are thus required at all different government levels, keeping in mind that cascade training cannot be applied to all kinds of training activities (for instance not for PRA). Training at different levels, including refresher courses can be used very well as an incentive for staff to perform well and/or to remain in government service, even if this is lower paid than private service. The same applies for exchange visits to different parts of the country or other countries in the region. The effectiveness of guided exchange visits from similar level staff from one district, province or country to another is not to be underestimated. It not only enhances the capacity in a very effective way, it also gives a stimulus for staff to perform well in order to qualify for such visits.

Where local institutions are weak or skills gaps exist, capacity building and backstopping may be required. The nature of assistance provided should be clearly outlined. The key areas for capacity building are: creating an enabling environment with appropriate policy and legal frameworks; institutional development at all levels; and human resources development at all levels.

With respect to all training activities, structured monitoring for effectiveness is essential. The monitoring indicators can best be established in coordination with the trainers and the target groups. With decentralisation to local government level and the establishment of integrated district development plans, rather than sectoral plans, inter-sectoral linkages, inter-departmental participation and co-ordination become a must.

With the changing of role of the government from provider to facilitator, the private sector can play a major role in service delivery and represents a largely untapped potential of resources. They can implement the activities that the community either cannot or does not want to carry out, but is willing to pay for. It is crucial that the government stimulates rather than hinders the involvement of the private sector in water and sanitation programmes, but at the same time guides this involvement with rules and regulations and possibly technical supervision.

Guidelines

Ireland Aid will:

- Assist government agencies at different levels to develop capacity of male and female staff to adapt and implement their new role as facilitator of service provision through technical assistance and on-the-job training
- To promote the involvement of female government staff in activities at community level
- Provide support to the establishment of mechanisms that stimulate stakeholder participation and public-private partnerships
- Assist government at different levels to give technical support to the lower level governments and at community level
- Provide assistance to support local governments in formulating integrated development plans, that are based on priorities identified at community level
- Stimulate and assist in the development and execution of appropriate (participatory) training activities at different levels (provincial, district, sub-district and community)
- Assist in establishing a structured monitoring for effectiveness mechanism as part of all capacity building activities
- Provide support to the establishment and/or development of local institutions that carry out training to improve planning, implementation, management and monitoring of community based water and sanitation services
- Use training as an incentive for government staff to improve their performance
- Provide support to NGOs that assist the government in providing services to target communities

Examples of best practice

PRA training for Technical Staff

In Kibaale, Uganda, all district staff of the District Technical Planning Committee and the heads of sections were trained in PRA to ensure that they really understood the requirements and effects of community based planning. They were very enthusiastic about the approach and other department staff and sub-county level staff will be trained at a later stage.

Community Based Management

In Zimbabwe, pumps have been rehabilitated in the district programme and communities have been involved in the rehabilitation. The programme aimed to promote Community Based Maintenance through the rehabilitation programme, but so far this has had no effect. Main reason is, that the district WSS subcommittee has insufficient capacity themselves (both in terms of training as in terms of time and transport) to spend time enough with the communities to generate the sense of ownership necessary for community management.

3.3.3 To increase the financial organisation capacity at government and community level

The aim of Ireland Aid with respect to the financial aspects of water and sanitation programmes, is financial sustainability while at the same time priority is given to enabling the poor to gain access to affordable water and sanitation services. Ireland Aid funds basic communal water supply and (institutional) latrine coverage. In principle, all service levels above this, will not be subsidised and have to be paid for completely by the users.

Funding concentrates on those districts, regions or provinces that are unable to provide their populations with a basic level of water supply. While it is accepted that different levels of government may have a lack of capital funds to construct new water supply systems at present, the users of the system are expected to contribute to the construction cost. At the same time, the government has to start managing all existing and newly constructed water and sanitation systems in such a way, that the cost of operation and maintenance are covered by user fees. This can only be realised if water and sanitation institutions at all levels have the autonomy and authority to establish and collect their user fees. And it means that these local governments have to take their own absorption capacity into account in planning for new systems.

In principle, tariffs also have to cover the cost of future rehabilitation and extension and the cost of training, mobilisation and hygiene education, but in the poor districts where Ireland Aid is working, this may as yet not be possible. Effective and efficient financial management will have to be based on the principles of water as an economic and a social good, and this means that within districts or municipalities, some cross-subsidising may be necessary to ensure access to water supply for the poor. This may be easier in towns and cities than in rural areas where the aim is for communities to manage autonomous community based systems.

Already all Ireland Aid supported rural systems are supposed to function in such a way that communities manage the operation and maintenance. Thus, selection of a certain type of system has to take into account not only the willingness and capacity of community members to pay for the establishment of the system, but also for its operation and maintenance. Therefore, it needs to be very clear to the communities what these cost will be and how they are expected to cover these out of the user fees.

This, however, is easier said than done as keeping a maintenance fund can be very difficult in a remote area. First of all, the communities have to decide on the collection of user fees if this is to be done per unit of consumption, per week, season or year and whether to apply different tariffs or a uniform tariff. Secondly, innovative ways of management of community funds need to be explored together with the communities, for instance by using the fees as a starter fund for community development schemes. These schemes then generate income that can be used for major repairs.

In very poor regions, the government may subsidise major repairs or rehabilitation and extension of rural systems. In addition, in areas where low cost sanitation is not viable because of environmental conditions, subsidies may have to be made available even for household latrines. For this, it is conceivable that a 'water and sanitation fund' is established to which central government and Ireland Aid (and other donors) contribute. This fund could operate to handle subsidies, but it could also facilitate access to credit as a type of guarantee fund. For instance, for a community that wants to extend its system and can pay this back out of user fees over a period of time and that has difficulty to obtain credit as a 'community'.

Guidelines

Ireland Aid will:

- Support the development of autonomous water and sanitation agencies/sections, which still ensure that also the poorest people have access to basic services
- Support the establishment of mechanisms that ensure that cost of operation and maintenance can be covered through user fees, with or without cross-subsidies
- Support the development of future tariff setting to be based on replacement cost and cost of O&M
- Support the establishment of a 'water fund' to act as a guarantee fund for rehabilitation and extension of community systems
- In principle restrict funding of sanitation activities to the establishment of institutional and demonstration latrines and to develop social marketing and hygiene education activities
- Support a mechanism to give subsidies for low-cost household sanitation if the most simple and low-cost technologies are not appropriate because of environmental conditions
- Promote the notion that all communities have to contribute to construction cost in form of cash, labour and/or materials
- Support construction of major water systems only when this facilitates access to water supply to the poor
- Support assistance to communities in establishing the most appropriate cost recovery system (monthly fees, seasonal fees, reserve spare parts) and in carrying out their tasks in the management of cost recovery

Examples of best practice

Community bank accounts

In Lesotho, minimum down payment (M500) for opening a bank account and minimum deposits for keeping them active prevents many village accounts being operational. Villages are also too far away from banks for opening a bank account. The funds collected from 'seabo' (down payment of M10 per household) are lying idle in accounts and with inflation lose their value. These issues were brought up during the workshop and in discussion with villagers. (M10=US$1.5)

Subsidies for low-cost household sanitation

In Southern province in Zambia, a woman had built a very nice latrine, with support from the district WASHE. However, already after half a year, the latrine collapsed during the rainy season because the sandy soils were not firm enough. The suggestion to build a shallow pit and move the superstructure when it was full was culturally not acceptable. It was unlikely that the woman would rebuild her latrine without lining, but at the same time she had no funds to pay for a lining, nor the technical know-how.

3.3.4 To strengthen the awareness of the environmental impact of water supply, sanitation and waste water and on long-term sustainability of water resources for all uses

Water supply and sanitation interventions are directly linked to the environment because they mutually influence each other at different levels. The yield of a water source at catchment level is dependent on the absorptive capacity of land to retain and slow the drainage of water, calling for protection of the catchment with respect to deforestation, the burning of grassland and human settlement. When water is not retained at catchment level, groundwater recharge is reduced which in turn can cause water sources to dry up. At the same time, also over exploitation of groundwater sources by both manual and motorised pumping for domestic and/or agricultural purposes can result in declining groundwater levels. This calls for a regulatory framework in which criteria and measures for environmental protection are established at national level.

It is the responsibility of authorities at catchment level (be it district or sub district level) to ensure that water extraction is considered in the context of watershed management rather than as water source management. It is also their responsibility to monitor the groundwater levels at regular intervals and to monitor pollution of these water sources. In few countries, the local authorities have the capacity or interest to carry this out and therefore capacity building activities are necessary, not only in the form of training, but also equipment and tools to collect and store the information and to channel it up for use at higher levels. The monitoring information of Ireland Aid in Northern Province in Zambia shows the importance of these data as groundwater levels there are dramatically falling, causing wells and boreholes to run dry and necessitating the use of different technologies.

At local level, communities need to be made aware of the impact of pollution and non-protection of the catchment areas for their own water supply quality and quantity. Instead of only regarding communities as a source of pollution, they can be seen as a source of information for pollution control. Often community members are aware of environmental problems that political leaders and the government know nothing about while many environmental problems can be solved only through active public participation and advocacy. Therefore a strategy for information, education and communication at this level has most impact if it is done in a participatory way with the communities themselves assessing the environmental conditions affecting their source of water supply. Similarly, environmental management at that level can be done most effectively through community management and community based monitoring.

Ireland Aid should encourage environmental impact assessment of proposed sector activities as a routine activity with special reference to water quality and water quantity aspects and with an implicit requirement to incorporate appropriate preventative or remedial actions as part of the investment proposals.

Guidelines

Ireland Aid will:

- Promote and assist in the establishment of a regulatory framework for environmental protection of water sources
- Promote the use of environmental impact assessment by local governments in the decision making on the use of sources of drinking water
- Promote the development and use of technologies that are environmentally friendly
- Ensure that in the design of water supply systems sufficient attention is given to the drainage and disposal of waste water
- Assist communities in low-income urban areas to develop and implement low cost, community based solutions for environmental sanitation
- Assist and motivate local governments to develop information, education and communication strategies and materials for use with communities with respect to environmental management
- Assist local governments to establish a community based environmental monitoring system that feeds into district and provincial level monitoring systems

Examples of best practice

Water Resource Management

In Uganda, the selection of the springs to be protected is now done on the basis of watershed assessment rather than as a point source. The spring levels are measured over a period of time to assess yields year around. In addition, in the hygiene education sessions and during construction, the community is made aware of the need to protect the surroundings of the spring and to prevent pollution by fencing and planting of the intake.

Prevention of faecal pollution

The villages in Lesotho visited by the mission had very low latrine numbers. The communal defecation grounds are considered to be sufficient. These grounds are located in such a way that with rain the faeces is not washed into the protected spring area or the (unprotected) river. Rather than promoting expensive latrines, it is much more important in these villages that high-risk are identified and appropriate hygiene behaviour to counteract these practices discussed and promoted.

3.3.5 To support communities in establishing priorities and making informed choices on the type and level of services

In line with the principles on community participation and the internationally accepted demand responsive approaches, communities have the responsibility to decide if they want water and sanitation improvements and what type and level of improvements they can and are prepared to pay for. One of the most difficult aspects of this approach for the local government, is to ensure that the information on a water and sanitation programme is effectively conveyed to the communities and within the community.

Especially in the kind of remote areas where Ireland Aid is operational, conveying of this information is essential and time/cost consuming. Therefore, in such places government tends to apply an area-based approach, that is the concentration of activities within one area for a specified period of time with the aim to reach full coverage in water and sanitation provision. From the perspective of the government this is indeed very efficient and practical, as it also ensures that follow-up visits can be made regularly and easily. But, this approach can have an inherent contradiction with respect to the demand of the communities: if water and sanitation is not a priority, they may not want the improvements. This results in a not-full coverage of the whole area and in a lost opportunity for the community to get these improvements, even at a later stage, as the government may then have moved to an other area of concentration. Thus, it increases the burden of motivation, information and education to stimulate and motivate the communities and this requires well trained and committed staff. If done well, an area-based approach can actually strengthen the demand in a specific area.

Within the communities, information means power. While traditionally, information was given to the village chief only, the current approaches for development require information to be available to men, women, rich and poor as all are expected to contribute to the construction as well as to operation and maintenance of the system. The process of decision making, election, formation and training of the (water) committees is crucial for the sustainability of community management and again requires the support of well trained and committed staff.

Within the committees, a balanced gender representation is essential as women are the main users of water and sanitation facilities and therefore have most to gain by a well operating system, for which they also feel ownership. In addition, men and women have different concerns with water as they may well use the water for different purposes, and this makes it mandatory that both are represented and effectively participating in the decision making in the committee. The different roles of men and women may be based on existing socio-cultural conditions, but this does not mean that burdens and benefits have to unequally divided, as is often the case. Careful monitoring at community level, can give insight in this balance.

Proposals for funding have to be submitted with a logical framework in which the indicators are explicitly stated especially with respect to the effects on empowerment and capacity building at community level and separated out for men and women. The use of elaborate indicators not only shows what impact is expected from the intervention, but also facilitates the monitoring of the interventions at embassy level.

Guidelines

Ireland Aid will:

- Support and promote the use of participatory approaches and tools that facilitate decision making at community level
- Give support to establish mechanisms that ensure that men and women are participating in decision making processes in all stages of the programme cycle through the use of effective, gender specific information and communication systems
- Provide assistance and support to the establishment and training of community level (water and sanitation) committees
- Ensure that the analysis of gender issues/effects is part of socio-economic appraisal
- Support the development of methods that involve communities from the start in the monitoring of programme activities at the community level to ensure a sense of ownership and responsibility over the system
- Support the use of monitoring tools to ensure that benefits and burdens of improved water and sanitation systems are balanced between men and women

Key Gender Aware Actions in Water and Sanitation

(Ireland Aid policy on Gender, May 1996)

Since water and sanitation are traditionally a female responsibility, then women should be specifically targeted in such projects. This should not be to the exclusion of men who should share responsibility for water and hygiene in the family and community.

- Consult and involve women as well as men at the earliest stages of water and sanitation project identification
- Train women to undertake non- traditional tasks such as pump maintenance and seek ways to gain men's support for changed roles
- Provide leadership training to women which will promote equal participation to men in decision making on water and sanitation committees
- Ensure that technical experts engaged in water and sanitation projects have an understanding of gender and capacity to incorporate women's as well as men's needs
- Consider how to ensure women's on going control and involvement once physical structures are in place. This will involve strengthening gender aware local institutional capacity
- Monitor and report on progress on impact on and benefits to women and men.

Examples of best practice

Participation as an Output

In Zambia, Southern province, participation is meant to ensure that facilities or services provided are tailored to demand in terms of quality, level of service and cost and to ensure that the communities will take care of the operation and maintenance of the facilities. But user participation can also be seen as a form of capacity building and empowerment and therefore an end in itself as is happening in the POCMUS project in Northern Province.

Gender representation in water committees

In all water committees in Uganda, it is mandatory that women are represented in the committee. Yet, this in itself may not be a guarantee that the demands and needs of women are taken into account. In Kibaale district, women traditionally keep a very low profile in matters outside the household and it is quite hard for the district staff to ensure that the voices of women are heard and they participate in the decision making process in the water committee.

3.3.6 To promote changes in hygiene behaviour

Greater emphasis on sanitation, hygiene education and social mobilisation in support of sector improvements are essential. Experience has shown that health and other socio-economic benefits will not be realised fully unless behavioural change is actively promoted and achieved. The aim is to create a demand for, and ensure the use of, water and sanitation facilities as well as to promote hygienic attitudes and practises through participator investigation, education and communication.

Because the improvement of household sanitation is rarely a priority at community level, it is unlikely that demand for such improvements will come forward. But, at the same time, improvement of sanitation has more influence on the decrease of water and sanitation related diseases than improvement of water supply. Therefore special efforts, in the form of participator hygiene education, are necessary to increase awareness of the importance of sanitation and to create a demand for sanitation. As this may take more time in some places than in other, planning and implementation need to be flexible. Sanitation facilities at household level are as hygiene enabling facilities rather than as an end in itself.

Institutional and school sanitation is supported because good quality and well used and maintained facilities have a demonstration effect and such can influence household sanitation behaviour. Similarly, incorporation of hygiene education in the school curriculum, can influence hygiene behaviour in children for a lifetime and may make children change agents in their families and communities.

To ensure that the Ireland Aid objective of poverty alleviation and improvement of quality of life is also reached, special attention needs to be given to the use of water for productive purposes. This implies that the design of the water supply systems is based not only on the minimum requirements of an average of 25 litres/cap/day for personal and domestic use, but on the requirements for productive use in the community

In all sector activities, attention has to be given to the integration of water, sanitation and hygiene education activities and all programmes are required to formulate an elaborated strategy with a separate budget for hygiene education and promotion or marketing of sanitation interventions. In addition, there has to be attention for incorporation of specialised staff or training for staff to be specialised in participatory hygiene education approaches. As motivating and changing of behaviour takes only place over long periods of time, the schedule of project implementation has to be flexible and adapted to the pace of the communities.

Guidelines

Ireland Aid will:

- Promote incorporation of hygiene education activities and specialised staff, with an elaborated strategy and budget in all water and sanitation interventions
- Support the development of local participatory hygiene education tools
- Support capacity building of technical staff in participatory hygiene education and of health staff in water and sanitation
- Support the introduction of theoretical and practical hygiene education in school curricula
- Support the establishment of adequate school sanitation facilities for boys and girls, male and female teachers. This includes hand washing facilities and incorporates a plan for operation and maintenance of all facilities
- Encourage the use of competition between schools and between classes to stimulate interest in hygiene with pupils and teachers alike.
- Devote a fixed percentage of the budget available for water and sanitation, to be determined at country level, to promote and support environmental sanitation improvements
- Encourage the establishment of a separate strategy for environmental sanitation with all water and sanitation supported interventions
- Promote the use of water for productive purposes by incorporating water supply needs for these purposes already in the planning phase

Examples of best practice

Water or health as the final output?

In Zimbabwe, the Ireland Aid supported hygiene education programme has shown what careful hygiene education planning, a participatory hygiene education programme and trained staff can do. In one district where the pilot project took place, villagers became highly motivated to embark on improvement of their water and sanitation facilities as they were promoted as hygiene enabling facilities.

Changing behaviour early

In Zambia, in Northern province, in the district WASHE of one district is realised that the greater part of the socialisation process takes part in a school environment and that it is therefore important to try and change behaviour at this stage. If the children are involved in a development process such as hygiene education, they may become change agents within their families and community. Thus the WSS programme is involved in setting up a curriculum for hygiene education in school, based on practical exercises.

3.3.7 To support operation and maintenance systems at community level

In line with the decentralisation policies pursued in the priority countries of Ireland Aid, communities are supposed to have the responsibility for operation and maintenance of the improved water supply and sanitation systems. This responsibility, however, does not come automatically and is dependent on a number of conditions of which the most important is, that the communities have made the decision on the selection of a certain type of system, based on adequate understanding of the requirements for operation and maintenance.

These requirements pertain firstly to technology. The simpler the technology, the more likely is the ability of the village or community caretaker to operate and maintain the water supply system or of the household to maintain the latrine. Simplicity also has to do with what people already know and understand and a technology based on traditional or familiar systems has therefore advantages. Simplicity also refers to autonomy: a system that can function within one household or one community is not dependent in its functioning on systems beyond their control and therefore more appropriate. This applies, for instance on drainage and solid waste collection in low-income urban areas. Another important aspect of the technology is local manufacture, which minimises dependency on external sources, ensures relatively easy availability and ensures availability of spare parts needed for maintenance.

A second requirement pertains to the cost of operation and maintenance. These costs have to fall within the capacity and/or willingness to pay of the community, if the system is to be maintained well. Thus, systems which depend on expensive chemicals or energy for operation, may not be appropriate for poor communities. Similarly, systems for which the spare parts are to be imported and that are therefore expensive, are also not considered appropriate.

A third requirement pertains to the support system in place. It is not realistic to expect that communities are able to operate and maintain their systems completely by themselves. Sometimes, repairs have to be carried out beyond the capacity of a caretaker or local repair person. This will have to be done by the government or the private sector, but it is the government that has to ensure that such system is in place. Too often, systems fall into disuse because of lack of back-up support.

A fourth requirement is associated with the management of the organisation of the community for operation and maintenance. This applies to establishment of management structures, the selection and election of water committees, the organisation of community contributions and the logistics of maintenance. For all aspects of this requirement, training and retraining will be necessary.

Guidelines

Ireland Aid will:

- Support the use and application of technologies that are appropriate for low income communities, not only in terms of cost, but also in terms of operation and maintenance
- Support approaches that ensure that communities can make choices on technology and service level that are based on complete information on the requirements for operation and maintenance
- Support the promotion of low-cost sanitation technology as a hygiene enabling facility
- Support the development of systems that are autonomous and minimise dependency on external factors
- Provide assistance to the development and establishment of support systems for village level operation and maintenance (VLOM), both in the public and private sector, in which the roles and responsibilities of all stakeholders are clearly defined and agreed
- Provide assistance to the establishment of systems that ensure that community committees are trained for the management of operation and maintenance
- Provide assistance to develop and establish systems that enable local government and communities to monitor and guide the operation and maintenance performance of their water and sanitation systems

Examples of best practice

Local Maintenance

In Uganda, local masons are trained by the staff of the District Water Engineer right from the start of the activities in a sub-district. They live in the sub-district and the aim is that once the system is operational, they will be hired by the water committee to carry out maintenance activities that they themselves cannot do. At present, the more difficult maintenance and repairs are carried out by the district staff, but this is going to stop in the near future.

Spare parts availability

In Zambia, procurement of spare parts has been handled by Ireland Aid in the past and spare parts (for instance the buckets) have been sold through the DWA to the communities at a very subsidised rate. This has influenced the coming up of private sector manufacture or procurement of spares and also has had the result that people are not aware of the real price of the spares. In addition, it has increased the dependency of communities and even D-WASHE on DWA (or Ireland Aid). Now that Ireland Aid is changing its support and also DWA is aiming to move away from direct implementation and handing this over to D-WASHE, the pressure to find solutions to the maintenance and spare parts problems are enormous

Annexes

The Water Supply and Sanitation Sector

What is the water supply and sanitation sector

The water supply and sanitation sector comprises water supply for domestic use and small scale productive use (gardening, livestock watering, beer brewing, brick making), the disposal of waste water, excreta and solid waste and hygiene behaviour to support the benefits of water supply and sanitation. Generally , the objectives of water supply and sanitation interventions are to help prevent water and sanitation related diseases and to help improve living conditions.

1 Water supply

There are many water supply systems found in developing countries. A first distinction can be made between unprotected sources such as springs, rivers, lakes, ponds and shallow wells and protected sources which make use of groundwater, such as bore holes and protected wells with hand-pumps. Improved systems can also be made using rainwater catchment, gravity flow or pumped systems from protected sources. These systems can supply water at different service levels. In rural areas, service level is usually communal use through public tap connected to a protected spring or piped system or a hand pump on either a bore hole or a hand-dug well. A higher order service level is a yard or compound connection and finally there is a house connection. With a demand responsive approach, agencies are expected to adapt the service level to what communities want and are willing to pay for. This new approach may well lead to more yard connections being established in rural areas.

In low income urban areas, water supply systems are often also communal, commercial or community based, but in addition there are different types of vending systems through hand carts or water supply trucks. These in turn may sell to individual houses, but can also supply community tanks. The selection of a system and service level depends on a large number of factors:

- the quantity of water at source;
- the distance from the source to the population;
- population density;
- user preferences (men and women);
- capacity and willingness to pay;
- capacity and willingness to take responsibility for continued operation and maintenance with the community;
- capacity for back-up support from the agency or the private sector
- objective of water supply improvements (domestic use, small scale productive use, irrigation and/or food security, watering of animals)

The consumption levels and construction costs increase by service level. Generally, operating cost are expected to be paid for out of user fees. The funding of the capital cost in case of rural systems or systems in low-income urban areas comes to a large extent either from the government or from a donor, the users contribute in the form of labour, materials or food and sometimes with a 'connection fee'.

2 Sanitation

Sanitation is the process of collection, treatment and disposal of human excreta in a safe and hygienic manner which is affordable and sustainable. Like in water, there is a large range of options for the disposal of excreta, varying from open air defecation to conventional sewerage. A first distinction in systems is between on-site sanitation systems and off-site sanitation systems.

On-site systems are systems where the excreta is deposited directly in a pit near the house such as traditional latrines, san-plat systems, VIP latrines, compost latrines and systems using water for operation such as pour-flush latrines and septic tanks. These systems can have a single pit or a double pit. The single pit latrines have to be abandoned when they are full or have to be emptied hygienically (this always has to be mechanically, as handling of fresh faeces is dangerous to the health). With double pit latrines, the full pit is left to dry out, while the second pit is in use. After a year, the full pit can be emptied manually because all pathogens have died in that period. A different form of on-site system is the bucket latrine where the excreta is collected in a container which is emptied off-site in a central disposal site or used in agriculture.

Off-site systems refer to systems where water acts as a vehicle and the excreta is transported away from the house through a network of pipes to a central discharge point or a treatment plant. The system also collects waste water. A distinction can be made between small bore sewerage, reduced cost sewerage and conventional sewerage. The first two systems basically collect sewerage at neighbourhood level. The sewers are located in small streets or backyards away from vehicular traffic and therefore at reduced depths. Because the volume of sewage at neighbourhood level is not very high and does not have to be carried over long distances, small diameter pipes with low gradients are sufficient for the transportation. The minimum service level of water supply needed for these systems is yard connection. In addition the level of water supply needed for these systems can be yard connection. Conventional sewerage requires a house-connection service level and are very expensive.

Finally, in densely populated low-income urban areas, communal latrines may be the only sanitation system possible. The technology of the latrines depends on the factors mentioned above and the viability of community latrines depends on the management. This can be either community management or private sector management. Public latrines managed by the government rarely function.

Apart from the level of water supply available, the selection of a sanitation system first of all depends on social and cultural factors. Environmental factors such as stability and permeability of the soil, groundwater level, availability of space/densities, local construction materials available will influence the technical choices available. Finally the cost and capacity and willingness to pay are very important. Since most sanitation systems are constructed and managed at household level, households are in principle responsible for payment of full cost of the system. However, in many of the Ireland Aid priority countries, some form of subsidy is given as an incentive to construct latrines.

3 Hygiene education

Hygiene education is defined as all activities aimed at encouraging behaviour and conditions that help to prevent water and sanitation related diseases. To meet the general objectives of water and sanitation interventions, it is not sufficient to just construct the improved water supply and sanitation facilities. New facilities have to be used, continuously by everybody in a safe way and need to be maintained so as to ensure continuous functioning. Hygiene education helps in this process and in addition helps to establish the link between improved facilities and user practices.

4 Drainage

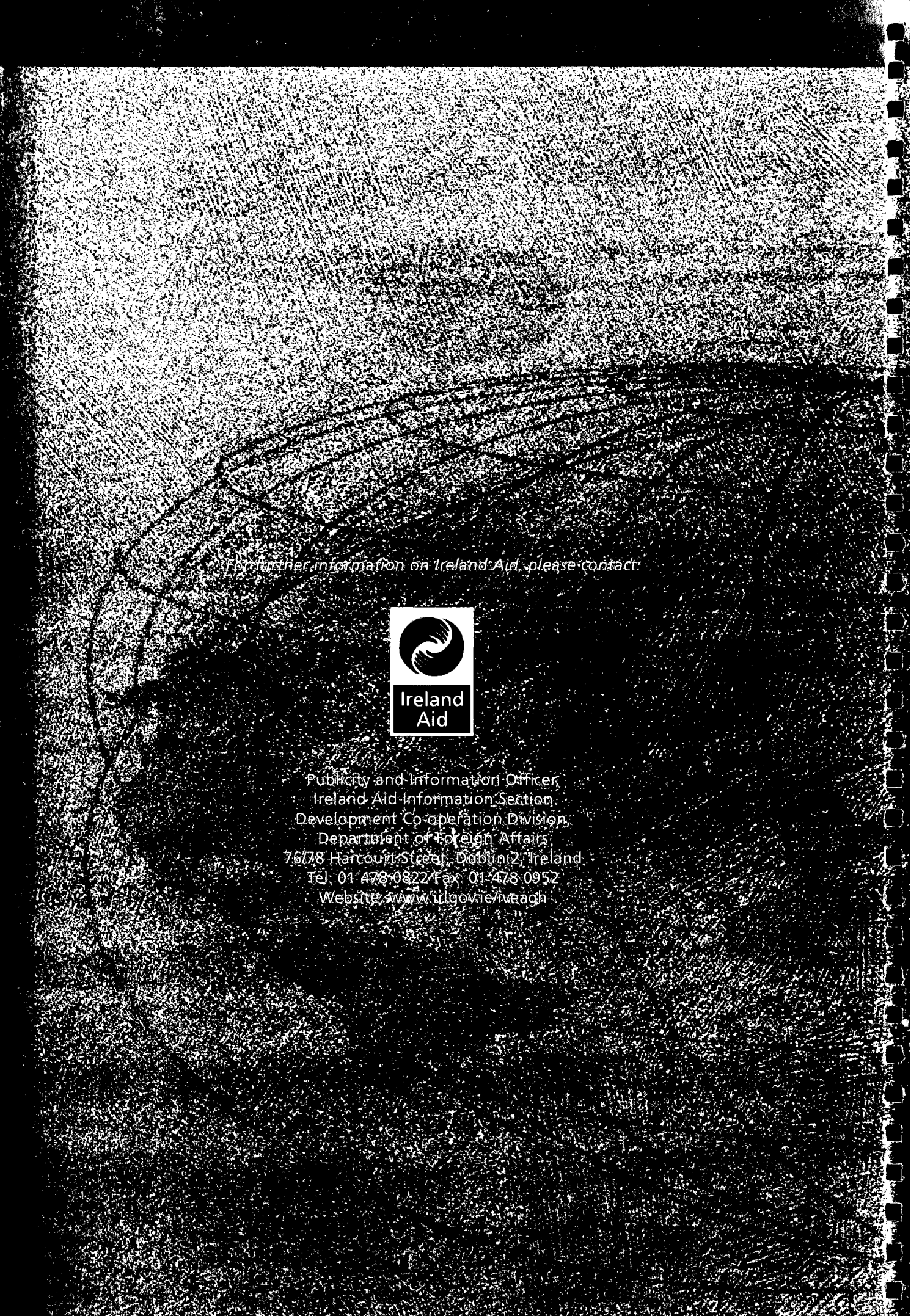
An integral part of water supply and environmental sanitation is drainage. In rural areas, the waste water from communal systems can be used for watering animals or garden/vegetables or is drained into a soakage pit. It forms part of the water supply system. In low-income urban areas, drainage is much more of a problem. Usually yard taps or public taps do not have a proper drainage system, resulting in standing pools around the water point. Surface water drainage is a problem because proper drains seldom exist or are full of garbage and room for a soak-away or a garden patch may be scarce. An additional problem in urban areas is the hierarchy of systems which means that area based drainage systems still have to drain into city level systems and the making of this connection, both technical and institutional, has proved to be a major hurdle in environmental improvements. This situation is exacerbated by the fact that often these low-income areas are located in swampy, low-lying or steep location where drainage is difficult to realise.

5 Solid waste disposal

Solid waste disposal comprises collection, discharge and, where appropriate, processing and recycling of solid waste. Public refuse disposal involves the collection of waste from individual houses or a community collection point to a disposal site.

In rural areas, the issue of solid waste disposal is solved at household level and comes up in hygiene education and the most hygienic way to dispose of the waste is in a waste pit in which the contents are regularly burnt.

In low-income urban areas, waste disposal is one of the main issues affecting environmental conditions and is very important. Community based systems of solid waste disposal include wheel barrows, donkey drawn carts or other human-powered systems. Individuals or co-operatives are contracted to provide this service at cost. In addition, communities can get involved in composting or recycling if there is a market for compost or the recycled material. If the waste is collected at community level, the main problem is the evacuation from the community to a disposal site. This is beyond the capacity of a community to organise and is dependent on the municipal services. In most of the priority countries, municipal solid waste collection is a very big problem and one of the most expensive items on the municipal budget.



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