

1. Basic Concepts

Documentation services are one of the basic services which should be provided by resource centres in the water and sanitation sector. They reflect the complexity of the sector in terms of the subjects covered, the kinds of institutions in which they may be established, and the professional interests and needs of their users. They may be provided either by a single documentation service or by a co-ordinated network of services serving one or more institutions.

Documentation services and resource centres

The IRC Resource Centre Development Programme defines a resource centre as:

an organisation or a network of organisations that provide support services to the water and sanitation sector, geared to making knowledge available to various target groups in a format they can use and tailored to specific information needs.

These support services may include:

- documentation services
- collection and analysis of local and international field practices and experiences
- packaging and dissemination of information
- publication of a newsletter and technical papers
- training and capacity building
- thematic research
- advocacy for sector development
- advisory and consultancy services
- acting as a facilitating forum for knowledge sharing and information exchange.

Some of these support services are concerned with the development of personal knowledge and skills rather than only with the transfer of information. Resource centres are thus concerned, not only with information management, but also with knowledge management; that is,

creating an organisation in which everyone is stimulated to handle his personal knowledge with care and to share it with others¹.

Information management is an important component of knowledge management, dealing with explicit knowledge which is recorded or communicated using a variety of different media.

¹ Keuks, W. (2003) Knowledge value chain: Introducing a methodology for incorporating knowledge management into organisational processes. [6th WIS, 12 September 2003.]

Note that the IRC definition of a resource centre is broader than that used in the Healthlink Worldwide Resource Centre Manual, where the functions of a resource centre are similar to those of a local documentation service as described in these guidelines.

Essentials of information management

Information management is concerned with the management of recorded communications, or documents. Information management is complex because it involves dealing with large numbers of:

- different producers of documents
- different documents from each producer
- different users of each document
- different occasions on which each document may be consulted and used.

Box 2A: Some subjects or disciplines in the water and sanitation sector

Community participation	Land survey
Computer science	Land use
Construction of water and sanitation schemes	Management of water schemes
Dam construction	Media design
Drilling	Operation and maintenance
Education	Planning and design
Food and agriculture	Plantation
Groundwater	Pollution control
Health	Project design and documentation
Housing	Remote sensing
Hydraulics	Sewerage
Hydrogeology	Social services
Hydrology	Social welfare
Implementation of water schemes	Soil mechanics
Industry	Surface water
Irrigation	Water quality examination

Box 2B: Some types of institution in the water and sanitation sector

Colleges	Non-governmental organisations
Community organisations	Private firms
Donors	Professional associations
Government ministries and departments	Universities

Box 2C: Some professions and occupations in the water and sanitation sector

Administrators	Librarians
Accountants	Managers
Automobile engineers	Meteorologists
Builders	Planners
Chemists	Plumbers
Drivers	Policy makers
Electrical engineers	Researchers
Hydraulic engineers	Social scientists
Hydrologists	Students
Lecturers	Trainers

All the above were identified by participants in an IRC information management course.

Information management essentially comprises:

- three basic elements
- information producers (individuals or institutions)
- information media (such as documents, maps or electronic media) by which information is recorded and transmitted)
- information users
- two basic mechanisms
 - production of information media
 - provision of access to information media (e.g. through databanks, documentation services, etc.)

Information management in the water and sanitation sector

Information like water

For water sector workers, many characteristics of information should be familiar. In many ways, information is like water, because:

- it comes from many different sources
- it may be easy to obtain, or difficult
- before it can be used, it has to be
 - collected
 - processed
 - stored
 - distributed
- it may be used for many different purposes
- it may be 'polluted' through distortion or inaccuracy
- it may be lost through 'leakages'
- it flows and, as with water, the flow has to be managed if it is to reach those who need it, when they need it

Just as there is a hydrological cycle, so there is an information cycle, which operates as follows:

- data are used to produce information
- this information is recorded in various ways
- the recorded information is collected
- collected information is processed (e.g. through indexing, physical formatting, etc.) to prepare it for storage and retrieval
- information can be retrieved on demand
- information can be disseminated to meet anticipated demand
- the information is used for various purposes, including
 - adding to knowledge
 - making decisions
 - producing more information.

Information unlike water

Information is also different from water (and from other resources), because

- it may be transferred without being lost to the original owner
- it may be used without being consumed

Information as a resource may be used to create new information, which in turn may be used to create still more new information. Since none of the information is actually consumed, its volume continues to grow – hence the 'information explosion'.

A key resource for development

Information is the key to exploiting other resources, including water resources. Society cannot use resources it knows nothing about, nor make effective use of those about which it knows too little. The effective use of resources is crucial to development. Information is therefore a basic resource for development.

What water sector managers need to know

Managers in the water and sanitation sector need to know about information for the same reasons that members of community management organisations need to know about water supply and sanitation. They need to know:

- what range of possibilities and choice of technologies or methods exist
- how to identify those most appropriate to the needs of their own organisation
- what resources are needed to ensure sustainability
- how to maintain supplies of the required quality and quantity
- how to determine the nature and level of demand and measure consumption

In the water and sanitation sector, a multiplicity of subject areas, institutions and professions leads to problems of:

- identifying sources of information
- selecting appropriate media
- identifying target groups of users

Some key characteristics of the sector are outlined in boxes, specifically:

- subject fields and disciplines (Box 2A)
- institutions active in these fields (Box 2B)
- professions and occupations represented in these institutions (Box 2C)

Organising information

One approach to organising information in the water and sanitation sector recognises four main categories of information:

Project and sector information

This kind of information is used mainly by planners and policy-makers, in institutions within a country and in external support agencies, international organisations and research institutions in other countries. It relates to the water supply and sanitation sector in a country as a whole, as well as to completed, ongoing and proposed projects in the sector at all levels.

Management information

Project and sector information must be linked to efficient management information systems in individual institutions. Management information consists mainly of internally-generated information and data for use in the planning, administration, day-to-day operation, management, performance and evaluation of specific institutions, organisations, programmes and projects. These systems may be concerned with:

- Operational information related to the management of the resource; including hydro geological, meteorological and hydrological data, service coverage data, records of consumption, cost recovery data, health impact data, borehole records, well records, design and construction records, operation and maintenance data and water quality data.
- Administrative Information related to the management of the institution; including records relating to personnel, equipment, stores and finance.

Technical information

Technical information is related to technical and managerial problems and solutions, methods and techniques, the results of research and field studies, sources of equipment, expertise and materials, best practices, and so on.

Advocacy information

Advocacy information aims to develop awareness, improve motivation and change behaviour in relation to water supply and sanitation, rather than provide information for use in carrying out technical or managerial activities.

These four categories of information are not mutually exclusive. For example:

- project and sector information may be partly derived from the output of management information systems

- performance indicators and growth forecasts produced by a project and sector information system may serve as inputs to management information systems for planning purposes
- data derived from a management information system may be made available in a report or periodical article as an item of technical information
- a report or periodical article may provide the basis for a radio broadcast, a brochure or a poster for use as advocacy information

The same source of information may thus be used in different ways and for different purposes.

Information management and documentation services

Documentation services are only one of a number of resource centre activities concerned with the collection, organisation and dissemination of information and the transfer and development of knowledge. Other support services need access to information contained in documents as a basis for their own activities, and produce documents of various kinds as a result of those activities. Documentation services are therefore:

- a source of information for other support services
- an outlet for information produced by other support services

Many water and sanitation institutions already have collections of documents of various kinds, often located in different departments and held in isolation from each other. Collections of documents tend to accumulate gradually, in an unplanned way, often in the offices of individual staff members.

A lack of overall co-ordination and the absence of a central record of these documents means that the information they contain – which may have cost a lot of money to produce or obtain – is, for all practical purposes, lost. Time and money are wasted in repeating expensive studies and proposals.

To avoid this problem, it is necessary to:

- merge individual document collections into a single documentation service, or
- establish a coordinating mechanism and a central record of these collections

As part of the services of a resource centre, documentation services may, like the resource centre itself, be provided by:

- a single organisation, or
- a network of organisations

Such a network may comprise:

- different documentation units within a single institution, or
- units serving different institutions which themselves form part of a resource centre network

The term 'documentation service' will be used in these guidelines to refer both to single organisations and to networks as described above.

Documentation services in the water and sanitation sector are often concerned mainly with technical information. However, both project and sector information and management information may also be issued in the form of reports and statistical publications, while public information campaigns may use documents such as posters, leaflets, videos and slide shows to disseminate information to communities. A local documentation service may collect and make available all these kinds of documents.

Functions of a local documentation service

The main functions of a local documentation service are to:

- identify the potential users of the service and find out what kinds of information they need
- identify the main sources from which these kinds of information may be obtained
- to provide users with access to these sources by:
 - selecting the best information sources for specific target groups
 - establishing, developing and maintaining well-organised collections of documents containing the kinds of information needed
 - establishing facilities for users to access appropriate external sources of information through electronic channels, including the Internet
- provide users with information about the document collections and appropriate external sources by producing lists of new acquisitions, catalogues, indexes, lists of useful web sites, etc.
- provide users with access to the service and its document collections by:
 - opening the service at convenient times
 - making arrangements for users to be allowed to use it
 - providing facilities for users to consult, borrow and make copies of documents in the collections
- maintain the accommodation, equipment and document collections in good physical condition
- find out which other libraries and documentation services have collections of documents relevant to the needs of users
- make co-operative arrangements with other libraries and documentation services to help users to obtain documents
- form or participate in library consortia to get discounts on subscriptions to information media and information management software
- provide information on other activities in the water and sanitation sector likely to be of interest to users of the service
- advise on the quality and usefulness of information sources for specific target groups
- promote the effective use of the service and its information resources

See also the Checklist 'What a resource centre can do' in Box 2D.

Effective performance

To perform these functions effectively, a local documentation service needs to

- be effectively managed in terms of:
 - diagnosing the existing situation
 - formulating policy
 - planning the development of the service
 - establishing an organisational structure
 - co-operating with other institutions
- be provided with adequate resources of:
 - trained staff
 - physical facilities
 - finance
- develop and maintain its information resources through:
 - identifying, selecting and acquiring documents and other information sources
- organise its information resources for use by:
 - cataloguing, classifying and indexing documents and other information sources
 - processing and repairing documents
- use its information resources to provide users with information products and services, including:
 - current awareness
 - literature searching
 - document delivery
 - query answering
 - information repackaging

Box 2D: Healthlink Worldwide Resource Centre Manual

Checklist: What a resource centre can do

A resource centre can:

1. Make information accessible
 - collect and organise materials
 - provide access to materials that are up-to-date and relevant to users
 - provide a pleasant environment for learning and training
2. Encourage the use of information
 - assist users to find relevant information and suggest how they can use it in their work
 - provide materials to support training and health promotion
 - provide information to those responsible for planning, managing and implementing health programmes, including district health management teams and community groups
 - produce information packs and resource lists
 - organise participatory workshops that use materials as tools for problem-solving work with teachers and trainers to identify resource materials for training activities
 - offer an information and enquiry service
 - develop ways to reach potential users
3. Produce materials
 - work with health teams and community groups to document their experience
 - adapt, translate and produce health learning materials
4. Strengthen links with other organisations
 - list local, national, regional and international organisations working in health and related fields
 - develop contacts between organisations working in similar fields, such as the Ministry of Education, Ministry of Water and Sanitation, nongovernmental organisations (NGOs) and community organisations
 - identify other sources of information.