**ASSESSMENT OF NEEDS AND RESOURCES**

- Defining Target Users
- Assessing User Requirements
- Identifying Information Sources

**PRODUCT DEVELOPMENT**

- Product Definition
- Product Delivery

**CAPACITY BUILDING**

- Organizational Strengthening
- Improving Use of Facilities
- Staff Training
- Automation

**PROMOTION**

- Raising Awareness of Need
- Promoting Availability of Services
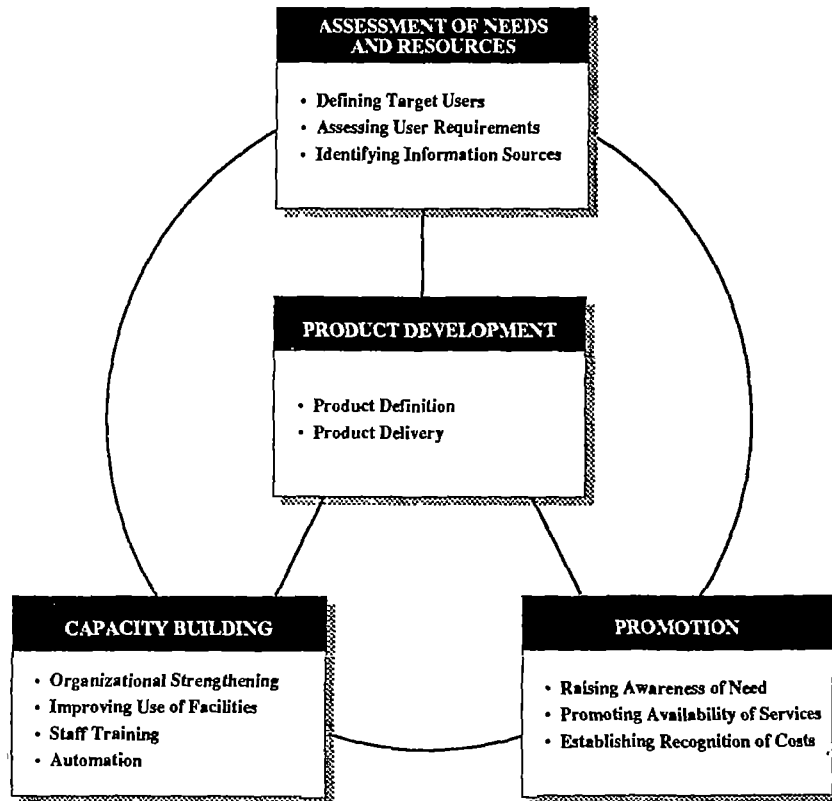- Establishing Recognition of Costs

# IRC
# International Water and Sanitation Centre

WHO Collaborating Centre

The Hague, The Netherlands

# TECHNICAL INFORMATION EXCHANGE IN WATER SUPPLY AND SANITATION

# A Strategy for IRC Support Activities

October 1988

# KEY ELEMENTS OF THE IRC SUPPORT STRATEGY

1. Global promotion of the project-level approach to Technical Information Exchange (TIE) as outlined in the Framework endorsed by major donors.

2. Assistance in the formulation, development and implementation of Technical Information Exchange (TIE) components in water supply and sanitation projects in 4-6 developing countries during the next few years.

3. Development of project implementation models, from which developing country agencies can formulate TIE components appropriate for their own circumstances.

4. Development and monitoring of training courses for "information extension workers", checklists for activities and services to be included in each of the four elements of the TIE Framework, and a register of agencies and consultants capable of providing the necessary expertise and support.

5. Collaboration with regional and national information centres in efforts to assist developing countries to establish information services and training courses, and to organize workshops and seminars aimed at improving the exchange and use of technical information.

6. Collaboration with the UNDP/World Bank Programme and the proposed donor Collaborative Council, to strengthen the information exchange capabilities of the International Training Network Centres, and to ensure that properly designed TIE components are included in as many new water supply and sanitation projects as possible.

7. Monitoring of TIE activities, in collaboration with sector agencies and donors in 8-12 countries.
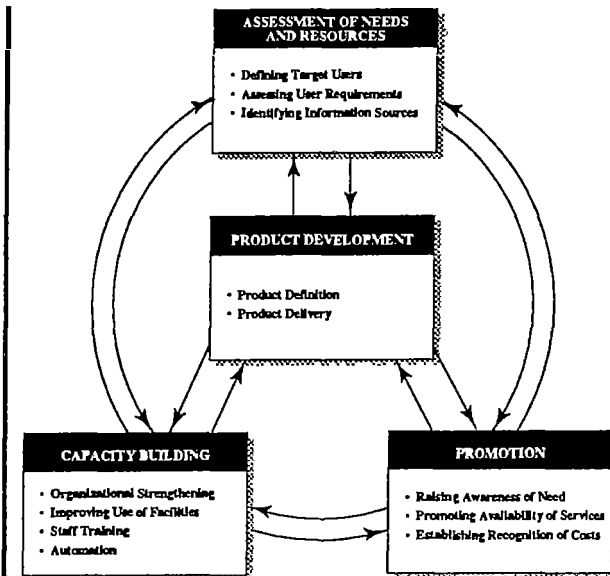
# TECHNICAL INFORMATION EXCHANGE

# A Strategy for IRC Support Activities

## CONTENTS

A fundamentally new approach to implementing information exchange activities in the water supply and sanitation sector has been developed. It is based on four elements: Assessment of needs and resources; Product development; Capacity building; and Promotion. The framework provides an opportunity for countries, with donor assistance, to implement technical information exchange in a phased and cost-effective way, taking into account the identified needs of the intended beneficiaries.

# TECHNICAL INFORMATION EXCHANGE

## A Strategy for IRC Support Activities

## 1. BACKGROUND

*Defining technical information*

When planning information exchange activities, the word *information* needs to be defined. It may include *management* information, *public* information, and *technical* information. All are important to the success of water supply and sanitation programmes, but this strategy is concerned primarily with technical information. What then do we mean by "technical information"? Under this heading comes information about appropriate technology, hygiene education, community participation, human resources development, capacity building, financial resources, and a variety of other issues which are of practical application in water supply and sanitation project planning, implementation, operation or maintenance.

*Replicating success*

The urgent needs of the International Drinking Water Supply and Sanitation Decade (IDWSSD) and beyond demand that improved and new services are provided rapidly and cost-effectively. Successful approaches need to be replicated and mistakes corrected, if most effective use is to be made of scarce resources.

It follows that, at all levels, those involved in the planning, financing, design, construction, use and maintenance of water supply and sanitation facilities need up-to-date information on available knowledge and experiences of others in the same field.

*Information channels*

In some developing countries, information channels have been created by which planners and practitioners can share technical information in a way which enables them to learn from others' successes and failures. More commonly, information is not readily available, and time, manpower and money are wasted in developing projects or programmes in a vacuum. This waste of valuable resources cannot be afforded if goals for the IDWSSD and beyond are to be met.

Two meetings on technical information exchange (TIE) co-sponsored by IRC during 1987 under the title INFO-IMPACT culminated in the development of a "Framework for Technical Information Exchange". This framework was endorsed by major donors as an effective way of implementing information exchange activities in developing countries. It consists of four components:

**Assessment of Needs and Resources**      **Product Development**

**Capacity Building**      **Promotion**

A fundamental recommendation is that new TIE activities in developing countries are best initiated as components of individual water supply and sanitation projects implemented by one sector agency. The reasoning is that, as well as benefiting the technical project, successful information exchange activities carried out by one agency can achieve rapid results at comparatively little cost, and be a powerful promotional tool to encourage others to follow suit. In the process, existing documentation facilities are strengthened, and links with other agencies develop incrementally.

In October 1987, a Donor Consultation Meeting in Interlaken, Switzerland, identified as one of four essential elements of water supply and sanitation projects: "Provision for technical information exchange, to ensure appropriate project design and support and to provide data for future projects". The same meeting developed a proposal for a Collaborative Council, to continue the momentum generated by the IDWSSD. Among the projects included in the work programme is the development of a series of implementation models, documenting case studies of successful approaches in a number of key areas (institutional strengthening; cost recovery; operation and maintenance; private enterprise and NGO roles in providing and maintaining water supply and sanitation systems; hygiene education; community participation and the involvement of women). From the case studies, the aim is to develop guidelines and training materials for the formulation of project approaches to suit varying circumstances.
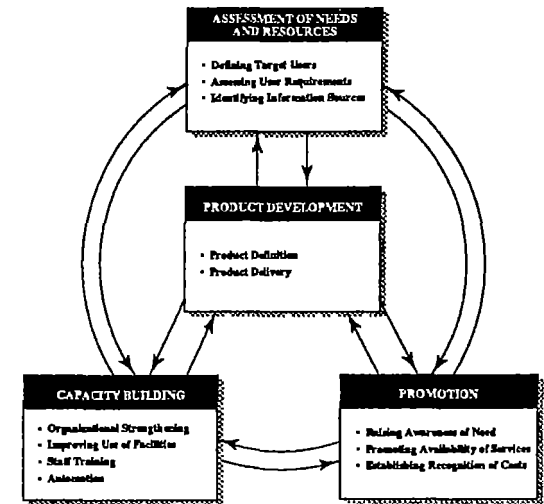


*The project approach*

*Donor commitment*

**Country activities**

Prior to the INFO-IMPACT meeting, IRC had been actively involved in the development of national TIE initiatives in a number of countries, through the Programme on Exchange and Transfer of Information. In three cases — Indonesia, Thailand and Sri Lanka — the programmes have reached advanced stages of preparation or are in the early stages of implementation, in each case with the support of the International Development Research Centre (IDRC). Also in Indonesia, IRC is collaborating with the World Bank and the Institute for Hydraulic Engineering (IHE) in Delft, The Netherlands, in developing the TIE capability of the International Training Network Centre, Bandung (ITB). The Dutch government is supporting a programme based on the four elements of the TIE Framework. The ITN/ITB project also includes agreements to build up the ITB library resources, with IRC assistance.

**A regional approach**

In Jordan, IRC is working closely with the World Health Organization in the development of a technical information exchange network — CEHANET — intended to cover WHO's Eastern Mediterranean Region.

Prompted by the INFO-IMPACT meeting in September, three more countries — Kenya, Tanzania and Zimbabwe — have begun to formulate TIE proposals, and IRC has been asked to assist this process in both Kenya and Zimbabwe.

**Momentum builds**

So, there is a momentum developing in TIE, for which IRC can offer important support, using the TIE Framework as a starting point.

IRC has the backing of the external support community, through the IDWSSD Steering Committee, to promote adoption of TIE components in new water supply and sanitation projects, carrying the message to both implementing agencies in developing countries and supporting donor agencies.

# 2. TIE CONCEPTS

The Framework for Technical Information Exchange envisages a progressive expansion of TIE activities among sector agencies in developing countries, beginning with TIE components included in individual water supply and sanitation (WSS) projects. In this first phase, a national implementing agency (e.g. Water Ministry) will identify two or three forthcoming WSS projects under the control of one district or regional office, and design an information exchange programme to serve those projects. An important criterion for selection is that the projects should be well integrated into a district or regional level water agency, so as to ensure future impact. Information needs (e.g. reading lists, health/ hygiene education materials, construction and maintenance guidelines, quality standards — see table below) will be assessed and measures devised to meet them. The additional

*Project integration*

| User Groups | Project-related functions | Information products needed |
|---|---|---|
| **PROJECT LEVEL** Village health workers, social workers, teachers, religious leaders, scout organizations | Health/hygiene education, public awareness campaigns, community motivation | Guides, logbooks, examples of activities, audio-visuals |
| Construction workers, drillers, village mechanics/artisans | Construction and maintenance of water and sanitation systems | Simple manuals and guides, logbooks |
| Village water committees | Financial and technical management of completed water and sanitation systems | Manuals and guides |
| **DISTRICT LEVEL** Sanitarians, engineers, trainers, planners, NGO field workers, hygiene educators, sociologists | Planning and design of projects and approaches, training of staff, technical problem solving, promotion | Translated technical data sheets, standard basic library, subscriptions to periodicals, access to data bases, newsletters, contacts with other projects, training course curricula and visual aids, circulation of World Bank, WHO, UNICEF publications and state-of-the-art reports |

needs of project staff at the district office (e.g. training materials, technical standards, evaluations of project approaches) will be included, in so far as they affect operation of the selected projects. In this way, implementing agency staff will gain experience of information gathering from outside sources, on a comparatively small scale. The collection, analysis and dissemination of project-related information requires special attention, as this will enhance exchange with other projects and have a catalytic effect.

**Spreading the message**

As the projects are implemented, district staff will encourage experiences and evaluation from each individual project to be reported regularly and shared with other projects, either directly or through such means as a periodic newsletter distributed throughout the agency. It is anticipated that this sharing of information will also evolve into a query handling service, coordinated by the district office, through which each project will have access to the expertise and experience available on the others, and to external information sources.

**Information gains**

An important aspect of this embryonic TIE activity is that it is tailored to the needs of the different groups of users. On each individual project, the amount of information which has to be collected and reported is comparatively small (and will generally be part of routine project monitoring anyway), whereas the information to which the project will gain access through TIE channels is very much greater. This should increase awareness at project and district levels of the merits of TIE activities and encourage the agency to spread TIE to other projects and other districts.

**A second phase**

In the next phase, which will follow naturally as experience grows of the project-level TIE, it is envisaged that the implementing agency will have the commitment, and enough experience in one district, to begin TIE activities in at least one other district. By this stage too, TIE should have spread across more projects in the first district. At this point, exchange of information between the districts will be co-ordinated by the national agency, beginning the build up of TIE self sufficiency within the agency concerned. Also in this phase, the broader needs of the national agency (e.g. comparative data from other countries, training curricula, product information) will be taken into account, by broadening the network of external contacts, to include regional centres and other international information sources.

The final phase, to establish a true national TIE capability in the WSS sector, will be exchange of information between sector agencies (e.g. Water and Health Ministries). In most cases, it will be logical for the original implementing agency to take the initiative and play a leading role in establishing inter-agency exchanges.

*Final phase*

As TIE activities evolve in the way envisaged in this Framework, the need for outside support will vary. In the first phase, the needs assessment will determine what advice and training will be needed particularly at the project and district levels, to organize the collection, production and circulation of relevant information products. Guidance will include establishment of contacts with data sources outside the agency concerned, for such products as abstracts, technical data sheets, or query handling. It may also involve advice on the introduction of automated systems for information recording and retrieval, based on standardized record descriptions, etc.

*Flexible external support*

Once TIE progresses to the second phase, the district with first phase experience will be in a position to assist with implementation of similar activities in other districts. The need for outside support will then come at the national level, where procedures will have to be introduced and staff trained to manage information exchange among several districts. This support will finally transfer in phase 3 to advice on structures for managing inter-agency TIE, and on international collaboration in TIE for the WSS sector.

*Replicability*

This step by step evolution of technical information exchange will need to be modified to suit circumstances in individual countries. In some countries, where TIE activities have been under way for some time (e.g. Indonesia and Sri Lanka), it is possible to envisage the project level approach beginning in some districts/agencies, while others have reached a more advanced stage and are establishing inter-agency information exchange.

**In Annex 1, the full TIE process is simulated for the fictional country TIEland.**

## 3. LOOKING AHEAD

Continued promotion and advocacy of TIE, together with initiatives springing from the continuing collaboration of external support agencies concerned with the widespread adoption of proven sector approaches, can be expected to result in a range of TIE activities in the coming years:

- Agencies in developing countries, encouraged by donors, will seek to initiate TIE as a component of new water supply and sanitation projects/programmes.

- National information exchange projects in Indonesia, Thailand and Sri Lanka will progress, and similar projects will be initiated in other countries.

- Regional information centres will receive more requests to co-ordinate TIE activities and provide assistance in developing information products and services.

- Establishment of the UNDP/World Bank-sponsored ITN centres may create additional opportunities for coordinating TIE, through ongoing and proposed activities in training, information and human resource development.

- The work of the donor Collaborative Council will generate its own information needs in developing and implementing agreed sector concepts. TIE will need to be co-ordinated with the donor exchange of project-related information via the CESI (Country External Support Information) system, operated by WHO in Geneva.

- Address the issue of translations, the major constraint hindering exchange among English, French, Spanish, Portuguese and Arabic-speaking nations.

# 4. FORMS OF IRC SUPPORT

For each of the TIE activities listed above, IRC is ready to offer support to both countries and external support agencies. There is also a clear need for one agency to maintain an overview of TIE activities in different parts of the world. IRC's past experience and present involvement in development of the TIE Framework equip the agency well for this role.

## 4.1 Project-level TIE

On individual project-level TIE initiatives, IRC may be involved in one of the following ways:

1.  IRC will be asked to assist directly with project formulation, assessment of information needs and resources, development of products and services, and actual implementation of the technical information exchange activities. In this simple model, IRC itself, working closely with the staff of the implementing agency, would act as the provider of information services to the WSS projects, and as the recipient of reports and data generated by the projects. Information from other projects implemented by the same sector agency would be collected as data sources for the TIE project, but in the initial stages the exchange process would be restricted to the selected new WSS projects. It will be helpful also to contact external support agencies active in the water supply and sanitation sector, who might be willing to supply reports or evaluations of other projects, as information resources for the TIE activity. This will help to establish information exchange among other projects and regions in the country.

    *District-level assistance*

    In the course of the projects, opportunities will be taken to build up the capacity of the implementing agency to handle information exchange for itself, and to establish links with outside sources of information. Training of project staff to select, transform and use appropriate information will be an integral part of this phase. The agency will be helped to determine the necessary budget line for maintaining the information services, and to promote the services so as to

    *Capacity building*

encourage their widespread use. In the course of the next few years, IRC will aim to assist with project-level TIE activities in 4-6 developing countries.

In the longer term, the aim will be to enable agency staff responsible for the water programme concerned to take over the task of request handling and provision of services to the WSS project. At this later stage, there will also be a need to establish links with the next level in the sector hierarchy. IRC then sees its role changing to support for activities between agencies and development of information handling capabilities at the national level.

**Watching brief**

2. IRC will keep a watching brief on projects initiated by other agencies, sharing experiences and, depending on the willingness of these agencies, exchanging documents, evaluations and lessons learned from successes and failures in programme implementation on these types of projects and those outlined in category 1 above. Contacts with other TIE projects, and support from UN agencies and other donors will be needed to enable IRC to develop these activities and retain an overall view of TIE progress globally. IRC could then use the opportunity to operate on a demonstration scale as a focal point for information exchange among a number of projects. It is important to recognize too that a number of IRC's ongoing technical projects involve transfer of experiences and data from one project to another, very much along the lines of the TIE Framework proposals.

**TIE checklists**

As an aid to formulation of a TIE component for a single water supply and sanitation project, IRC is developing (and plans to update regularly) extended checklists of information services which may be needed and data which may have to be collected. To equip itself to respond to requests for assistance from agencies in developing countries, IRC is preparing a register of agencies and consultants capable of undertaking TIE needs assessments and providing expertise in the other components of the TIE Framework — development of products and services, capacity building (particularly in the areas of training of information workers and automation), and promotion. Already, the *Interwater* Tools (Thesaurus, Directory of Information Sources, Reference Manual for Design of

Information Services in Developing Countries, Basic Reference Library, etc) provide countries with the building blocks for a standardized TIE system.

<div align="right">*Building blocks*</div>

The project-level activities itemized in this section (4.1) will be the main focus of IRC's INFO-IMPACT strategy in the coming 2-3 years.

## 4.2 National-level TIE

The major information exchange projects under way in Indonesia, Thailand and Sri Lanka will provide valuable data on successful and less successful approaches. Among other things, they will assemble experience of the training of information staff in national and regional centres. IRC's earlier involvement in the development of project proposals also provides the entry point for a proposed watching brief.

The TIE Framework lays great emphasis on the introduction of TIE activities based on initial identification of user needs, and starting at the project level. While parts of this approach may have been employed in formulation of the Indonesia, Thailand and Sri Lanka national projects, the basic concept of those three projects depends on an information network being established before information exchange gets under way.

<div align="right">*Network approach*</div>

IRC's monitoring of these projects has two purposes: (i) it is part of IRC's general INFO-IMPACT strategy to be aware of TIE activities going on in all parts of the world, strengthening the agency's capacity to offer advice and support when countries or donors are contemplating TIE initiatives; (ii) IRC is seeking the support of the proposed donor Collaborative Council for a project to develop implementation models for TIE in varying circumstances and with different levels of ambition. The national-level TIE programmes are important examples of the way that exchange of information can be accomplished on a broad scale, once the country has become committed to the principles, recognized the benefits, and has experience of the technical and institutional arrangements needed.

<div align="right">*Country variations*</div>

## 4.3 Collaboration with regional information centres

IRC's strategy, based on the TIE Framework, is to develop information activities first at the local/district level in collaboration with WSS programmes in developing countries, and eventually to encourage countries to achieve comparative self-sufficiency in TIE. The role of the regional centres is foreseen in the Framework, where particular reference is made to newsletter and abstract services, training activities, course curricula, workshops and seminars, translations, and developing more comprehensive reference and referral services.

In the principal IRC INFO-IMPACT activity of developing project-level TIE components, the abstract services will be important extra sources of information. As projects progress, IRC will seek to help establish direct links between the sector agencies involved and the appropriate regional information centres. In the particular case of the AIT/ENSIC*, IRC will also seek help in some cases with translation of particular information products or with the follow-up of abstract references. ENSIC too may have a role to play in the training of information workers, having an active training programme in information management, and skills in the use of UNESCO's Micro/CDS/ISIS system and other versions of MINISIS.

In connection with ongoing and future larger scale TIE activities, particularly those supported by IDRC, the major regional centres (CEHA, PEPAS, CEPIS, AMREF, CIEH and ENSIC*) can be expected to be involved in the information network. IRC is ready to assist, on request and where funding is available, by providing advice and collaboration with centres wishing to improve their information dissemination services.

## 4.4 The International Training Network

The UNDP/World Bank Global Work Plan envisages the establishment of some 15 national and regional centres as part of the International Training Network for Water and Waste Management (ITN). Three centres have already been established in India, Indonesia, and Kenya (for East Africa) and preparatory activities have been completed or are under way for a further 7. Dissemination of information on successful low-cost

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### Self-sufficiency goals

### Translation and training services

### * Regional Centres

| | |
|---|---|
| AIT/ENSIC | Asian Institute of Technology/ Environmental Sanitation Information Centre, Thailand |
| CEHA | Centre for Environmental Health Activities, Jordan |
| PEPAS | Western Pacific Regional Centre for the Promotion of Environmental Planning and Applied Studies, Malaysia |
| CEPIS | Centro Panamericano de Ingenieria Sanitaria y Ciencias del Ambiente, Peru |
| AMREF | African Medical Research Foundation, Kenya |
| CIEH | Centre Interafricain d'Etudes Hydrauliques, Burkina Faso |

technologies and approaches is one of the functions of the ITN centres, and IRC has collaborated in the production of a training module on "The Use and Value of Technical Information". *Information function*

A pilot project to develop a technical information component is planned at the Indonesian Network Centre at ITB Bandung. IRC will assist in preparing a TIE component, based on the four elements of the TIE Framework. Under a separate collaborative agreement IRC will assist in the global dissemination of news items on ITN activities and in equipping the centres and subcentres with appropriate literature and guidelines on establishing documentation facilities. *Pilot project*

If these initiatives prove successful, the ITN Centres have the potential to be key focal points for technical information exchange among developing countries in their regions. Their library resources will include literature identified in the ITN training modules, the List of Publications for Water and Sanitation developed by IRC for UNDP and WHO, and the Inventory of Information Materials for Training in Water Supply and Sanitation which IRC is compiling on behalf of the UNDP/World Bank Programme. *Focal points*

## 4.5 Global co-ordination of TIE

The activities already outlined as part of IRC's INFO-IMPACT strategy have been prompted by the international donor community's request for IRC take a lead in the co-ordination of technical information exchange activities. It is important here to establish the scope of such a role. Among the services that a lead agency in technical information exchange might be expected to provide are:

(i)     Promotion of TIE
(ii)    Guidelines/advice on implementation of TIE projects
(iii)   Guidelines/advice on technical information training needs and curricula, and available training sources
(iv)    Advisory standards on information management and automation
(v)     Evaluations of TIE activities and approaches and their effects

(vi) Progress reports on implementation of TIE globally

(vii) Advice on sources of specific information or services

(viii) Development or coordination of query handling services

**IRC resources**

IRC has the capability and in some cases also the means to provide this range of services. Mechanisms available for item (i) **Promotion** include the organization of specific TIE workshops or seminars (or inclusion of a TIE presentation in WSS workshops organized by others), current awareness bulletins, and acquisition lists. IRC has developed a module for ITN on "The Use and Value of Technical Information", which can be used by IRC or ITN staff, or others, as a promotional tool.

**Developing guidelines**

The TIE Framework document is a starting point for item (ii) **Implementation Guidelines**. It is now being supplemented by more specific advice or assistance on each of the four Framework elements. Model project formulations are part of the planned activities, and will evolve from evaluation of actual TIE projects. Extension of the IRC Consultants Register to include TIE specialists has been initiated, and IRC is seeking to maintain a register of agencies/institutions in developing countries able to assist with TIE project formulation and implementation.

**Training register**

The TIE Framework document contains an outline of training needs and lists some organizations known to provide **training courses** (item iii). IRC is investigating the scope for rationalizing the curricula for training of information specialists and can offer advice to those seeking to develop courses. A register of appropriate training courses needs to be developed and maintained.

**Interwater Tools**

IRC can justifiably claim to have taken the lead in providing advice and tools for **standardizing information handling** (item iv). The *Interwater* Tools, which have been developed with support from IDRC, provide useful guidance and could be expanded to include simple guidelines for setting up a database management or bibliographic storage and retrieval system. This should be developed with the participation of project staff and information workers concerned who would, for example, help to determine different data fields, formats and system structures for different kinds of technical

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information. One aim should be to ensure that agencies which do not necessarily wish to implement Micro/CDS-ISIS systems can still develop compatible data bases for electronic transfer. If the needs assessment shows that an automated system is premature or inappropriate, advice can be given on manual systems of information storage and retrieval, such as an appropriate cataloguing/indexing system.

Items (v) and (vi) relating to evaluations and progress reports on TIE require IRC to obtain the collaboration and support of external support agencies active in TIE. **Evaluation** is a key part of the activities described in Sections 4.1 and 4.2. Collation of the growing number of TIE evaluations should lead to compilation of the implementation models referred to in Section 4.2, and will provide IRC with its own database of successes and failures for amplification of the proposed model projects. These could then be synthesized into such products as case studies or state-of-the-art reviews.

*Evaluation*

The **"clearing house"** role implied by item (vii) is already part of IRC's activities. Requests for information can generally be directed to organizations which have the necessary information, or can sometimes be answered directly by IRC in the form of a reading list or bibliography.

*Query handling*

It is important to distinguish the comparatively low level of activity involved in this "reference and referral" method of answering queries from the resource-hungry operation needed to undertake direct **query handling** (item viii). In the short term, the information exchange role that IRC will begin to undertake on a small number of new projects will involve a limited degree of query handling at the project level. Over a period, this could be developed into a special information base linking first demonstration projects and later more ambitious programmes from country to country. In this way, IRC's service to inquirers such as donors may evolve as a mixture of "reference and referral" and direct supply of such items as project evaluations, surveys, needs assessments, project appraisals, mission reports, and other project-related documentation.

Though reference and referral will remain the dominant element for the foreseeable future, its quality can be improved through the identification of specific project references. Thus,

*Improving the service*

whereas at present a request for information about cost recovery mechanisms for village water supplies might be met by the offer of one or two IRC publications, a search at Aqualine and a reference to WHO, ENSIC, WASH, etc., in a few years time IRC may envisage also providing a computer listing of a limited number of projects known to have relevant experiences and, perhaps, copies of relevant reports and/or evaluations.

To reach that point, IRC would need to begin immediately on an automated storage and retrieval system, for INFO-IMPACT generated data, linked to recording of data from other IRC technical projects. The scope and cost implications of such activities are significant, and they would require substantial support from donor agencies. Possible linkage with WHO's CESI system, as discussed in Section 4.6, will also be relevant.

**The language barrier**

In seeking to improve international exchange of technical information, the difficulty of overcoming language barriers is a major constraint. Francophone Africa in particular demonstrates the need. Innovative approaches are known to be under way in several West African countries, and could generate useful information for English speaking countries. At the same time, French speaking planners and designers complain of the lack of availability of information in French about activities in the Anglophone countries. Exchanges with Latin American countries have also been restricted in part through language barriers. Multilingual titles on bibliographies and reading lists would be one important step in this process, and IRC is already looking at the practicality of introducing such a system with its own publications. In addition, a study is needed into the availability of reliable and cost-effective translation services to which inquirers can be referred if whole documents need translating.

## 4.6 Support for the Donor Collaborative Council

Present plans for collaboration beyond the IDWSSD envisage working groups of interested donors monitoring global activities through a Collaborative Council, with the UNDP/ World Bank Decade Programme acting as a focus. The Council will need to be kept informed about the progress of initiatives that it launches, including the initiation of information exchange components in new WSS projects.

One important monitoring tool for the Council is WHO's CESI (Country External Support Information) system, which exchanges information about donor-supported WSS projects among the donor community. As well as tracking the flow of investments into the WSS sector, CESI enables donors to review the approaches and the technologies used. It would be logical for these types of data, linked to specific projects, to form part of a global technical information exchange system. IRC will therefore seek to co-operate fully with the CESI Secretariat in WHO, Geneva, to ensure that developing countries initiating TIE activities have access to data on comparable programmes in other countries.

*The CESI System*

Other IRC activities, including the UNDP/World Bank-sponsored inventory of selected information materials for training in water supply and sanitation, impinge directly on the Collaborative Council's work. IRC also provides courses to train project staff and volunteers through its technical assistance and briefing programmes, held in The Hague. It will be important for IRC to foster close links with the appropriate Council working groups.

*Training inventory*

## TIEland Sector Profile

TIEland's 12 million population is 75% rural

Water supply and sanitation responsibilities are divided.

The Department of Water Supply (DWS) in the Ministry of Water and Energy (MWE) is responsible for water supplies in major towns and rural communities of more than 2,000 population.

Smaller communities are served by 50 local authorities, under the direction of the Ministry of Local Government (MLG).

Urban sanitation is the responsibility of the Ministry of Public Works (MPW) operating through City Councils, with the Ministry of Health (MoH) responsible for surveillance and setting of standards.

Rural sanitation is a local government responsibility though the few communities with satisfactory sanitation facilities have generally benefited from NGO programmes, or primary health care initiatives by district offices of the Ministry of Health.

Co-ordinated by the Ministry of Planning, a number of bilateral and multilateral donors are supporting individual projects implemented by DWS, MLG and MPW.

# Technical information exchange: A case history from TIEland

This example of the evolution of technical information exchange (TIE) in the fictional country TIEland has been compiled to illustrate the steps from a project/district level TIE component to a national capability in TIE. It is intended only to indicate the principles and types of activities which may be involved in one country, not as a fixed model. Institutional arrangements and information needs vary widely from country to country, and the starting point and specific activities will have to be determined by a TIE needs assessment in each case.

## Starting TIE activities

Encouraged by IRC and the bilateral aid agency AIDA, TIEland's Ministry of Planning (MoP) sees advantages in introducing technical information exchange, to improve planning and design of future water supply and sanitation projects. From the country's 5-year plan, MoP identifies two forthcoming AIDA-supported rural water supply projects, implemented by the Ministry of Local Government (MLG) on which it may be possible to introduce a TIE component. The projects are to be run by MLG project engineers based in different local authorities in the Western Province and coordinated by the MLG Provincial Office, which is also managing projects in another 6 local authorities.

TIEland is committed to the global concepts for sustainable water supply and sanitation programmes and so wishes to ensure that the projects incorporate appropriate components for institutional strength-

ening, cost recovery, community involvement, hygiene education and sanitation facilities, and provisions for operation and maintenance.

The first step is an Information Needs Assessment and analysis of available resources for the TIE component. Assisted by IRC, MLG assesses the types of information products and services which will be of value as the two projects are implemented, and the resources available to produce, handle and disseminate the required information. Information will also be generated by the two projects, which will be of more widespread use to MLE, and later to others. So plans are also prepared for the recording and regular reporting of evaluative data on key aspects of the project.

## Information Needs and Resources

The outcome of the Needs Assessment is summarized in Table A1.1 for information needs and Table A1.2 for information to be produced by

## Table A1.1 Example of Needs Assessment Results for Phase 1 TIE Component in TIEland

| Information users | Function | Information needs | Information products |
|---|---|---|---|
| Village health worker | Promote clean water use, good hygiene, building of latrines | Leaflets in graphic form and local language for promotion | 200 sets of ready-to-use materials in local languages and with local illustrations |
| Village water committee | Manage system operation and maintenance, organize finances and cost recovery | Constitution, O&M guidelines, guidelines on financing systems | 6 locally-adapted IRC/GTZ documents including sample constitutions and cost recovery guidelines |
| Schoolteachers, religious leaders | Education/awareness campaigns | Information and reference materials on health and hygiene education | 20 sets of lesson plans. 20 sets of visual aids in local languages |
| Project promotion staff | Community involvement, surveys, technical advice | Techniques for community participation, questionnaires, survey forms, technical data sheets, visual aids | 6 abstracts from World Bank, UNICEF, IRC books on CP, 10 photos, 3 models of pumps/latrines (university) |
| Construction staff (drillers, community workers, project supervisors) | Drilling, pipelaying, pump assembly, latrine construction | Manuals/guides | 3 text books + 10 translated technical data sheets (ITDG, WB, ILO) |
| Mechanics, caretakers | Operation and maintenance of standposts, handpumps, latrines | Manuals/guides | Pictorial guides to 10 major maintenance tasks, plus logbooks in local languages |
| Project engineers (District & Provincial), hygiene education advisers | Project planning and detailed design, monitoring and supervising, problem solving, training of caretakers | Technical data, evaluation reports, training materials, up-to-date approaches, access to query handling | Standard basic library (IRC), abstract service (ENSIC), subs to Waterlines, World Water, WB, UNICEF publications, query handling (IRC), start of MLG Newsletter/data sheet. Collection of data from past projects of DWS, MPW and NGOs, and from other donors |

the projects. It helps at this stage to identify each group of potential users of information, possible sources and their capabilities, and any previous project experiences in technical information exchange. The majority of the needs listed in Table A1.1 can be served by the one-off provision of the products identified. The exceptions are the needs of project staff in the District and Provincial offices for up-to-date information for planning and design purposes, and response to technical queries. Here the need is for a flow of information from several sources, and a mechanism for handling queries. Much of the information to be collected from the projects (Table A1.2) does not involve extra activities. Normal project monitoring would produce the information needed, whether or not there was a TIE component. However, by standardizing the reporting system, and introducing feedback in the form of circulated reports or a periodic newsletter, TIE can ensure that the information is put to best use and can be retrieved later by others who may

benefit from it.

The Needs Assessment also includes visits to the offices of DWS, MPW and the three NGOs, active on water supply projects in Western Province. The visits reveal that a number of past schemes have similar features to the proposed MLG project, and that reports and evaluations can be provided on request. They also show that earlier DWS surveys have plotted groundwater contours, and records are being kept of seasonal water-table movements close to the new project area. DWS will make these data available to the MLG project planners.

A search of the WHO CESI project data base identifies a total of 20 projects, involving five donor agencies, which may have experience of the same waterseal latrines and deepwell handpumps.

Review of resources in the MLG Provincial Office shows a need for strengthening and reorganizing to handle TIE. An IBM microcomputer is used for wordprocessing and for some accountancy tasks, and there is a photocopying machine. However, library facilities are rudimentary, with no cataloguing of documents held and no staff responsible for supervising their use.

**Information Products**

On the basis of the Information Needs and Resources Assessment, MLG, assisted by IRC, sets about planning the next steps in the TIE Framework Project Development, Capacity Building, and Promotion. The information products identified are listed in the final columns of Table A1.1. TIEland's national university is able to help with translation of

**Table A1.2 Information generated by the projects during Phase 1**

| Type of information | Purpose | Means of production, storage, dissemination |
|---|---|---|
| Evaluation of project approaches: appropriate technology; cost recovery; community participation; construction techniques; maintenance; hygiene education | Future planning plus transfer to others later | Annual report to MLG, Newsletter/data sheets circulated by MLG |
| Coverage targets, progress (users, water useage, number of latrines) | Improve national data base, monitor project progress, compare alternative approaches | Quarterly progress reports to MLG, progress charts, project records, Newsletter items |
| Operational performance (breakdowns, maintenance needs) | Future planning and design | Quarterly progress reports to MLG |
| Water quality data (source, tap and household) | Health impact, future planning | Quarterly progress reports to MLG |
| User behaviour (water storage habits, hygiene behaviour) | Project evaluation and transfer to others | Annual report to MLG, Newsletter/data sheets circulated by MLG |

key documents and leaflets into the local language. Subscriptions are started to the relevant journals and abstracts/cutting services, including IRC's Current Awareness List, and the MLG Provincial Office is added to the distribution list for publications from the World Bank, UNICEF and WHO (one immediate spinoff is that MLG's other three provincial offices will also now receive these publications).

The key element to be planned is how to collect, process and disseminate relevant information, without drowning the users in irrelevant literature. During the assessment exercise, one local engineer showed great interest in gathering available

information and identifying gaps. When he reacts favorably to the idea of becoming the project's "information extension worker" IRC helps MLG to arrange retraining in TIE.

MLG responds favorably to the idea of automating its TIE activities in the longer term, but fears that immediate automation might deter some users in the immediate future. There are also fears about the reliability of power supplies if too much dependence is placed on computer-based communication. A manual storage and retrieval system is therefore planned, but with the information worker also trained in ways of using the IBM microcomputer to

catalogue documents in a simple CDS-ISIS compatible format and using the Interwater Thesaurus for indexing and cataloguing.

The planned TIE activities will require some extra space in the MLG Provincial Office for storage and for sorting, duplicating and distributing documents. Initially, it is proposed that the new information worker should prepare a six-monthly circular, to be distributed to all MLG offices and to the collaborating DWS, MPW and MoH offices. The circular will list publications received and, eventually, report project progress and evaluations. The intention is that MLG should later begin a more comprehensive newsletter with wider coverage and bigger circulation.

Costs of obtaining the necessary documents, translating, printing and distributing them, training the project staff in information handling, and providing extra office equipment and support services require an initial addition to the project capital costs of $30,000. In addition, MLG has to commit itself to an annual budget of $15,000 to pay salaries of key personnel and support staff, periodic retraining, stationery, mailing costs, subscriptions, office rent, maintenance of equipment and travel costs, all attributable to the TIE activities.

AIDA accepts that the investment represents good value for money, and the TIE component is approved along with the two technical projects.

## Immediate Benefits

Within MLG, the TIE activities soon yield visible benefits. The DWS groundwater survey results help to pinpoint suitable borehole sites for the water supply systems; data from DWS and from the donor-assisted projects in other countries warns of the pitfalls to be avoided with some types of latrines; the detailed village survey is made easier by inclusion of items from other questionnaires; training of pump mechanics and caretakers benefits from the translated training guides and visual aids; and in the project villages, the brightly coloured posters provide a new centre of attraction, as well as bringing home their health messages.

Then there is a problem on one project: the groundwater in one low-lying area is close to the surface and is hampering construction of the pit latrines. How can the latrines be constructed? Is it wise to build pits below groundwater level anyway?

The project staff contact their newly trained information worker. The new library has lots of information about latrine construction, but no reference to the water table problem. Guided by IRC, the information worker initiates a wider search (it is a question which IRC could answer directly from its own files, but the aim is to help MLG staff to develop their own capability in query handling).

The answer comes from ENSIC. A search of bibliographic references combining latrines, construction and groundwater, produces two abstracts of papers on a World Bank-assisted low-cost sanitation programme in Tanzania. Soon, the information worker has copies of construction manuals for latrines built on earth mounds, and the technical specification on siting and protective measures to prevent contamination of drinking water sources.

This is an important milestone. The engineers' problem has been solved promptly and successfully. TIE is working.

## The Message Spreads

The message begins to spread beyond the two TIE projects. The information worker's circulars reflect growing use of the information base, and visitors from MLG headquarters soon recognize the advantages that could accrue if the process spread wider. TIE components will be high on the priority list on future projects, and MLG begins to investigate the scope for introducing TIE into some of its completed projects.

Another milestone is reached when the information worker receives a letter from INFOnesia. The MLG circular has been picked up in the ENSIC Abstracts. INFOnesia's Rural Development Agency (RDA) has read about the community surveys and discussions involving latrine models and would like more information. The request is passed to MLG's project promotion team, and direct contacts are established with the project staff in INFOnesia.

## The Second Phase

Picking up the TIEland experience after about three years, we see the way that TIE has developed and the preparations for the next phase. By now, IRC's involvement with the MLG Provincial Office is very much reduced. The information worker is capable of handling all the project needs, and is building up an information base from which others regularly obtain appropriate information.

MLG has meanwhile initiated TIE components on other projects in Western Province, and is planning similar exercises in the other three provinces. At the same time, contact with the MLG pilot projects has sparked interest in DWS, MPW and MoH for TIE activities on their own water supply and sanitation programmes.

The MLG experience helps the other agencies to initiate their own pilot TIE components, while MLG itself seeks ways to expand its TIE programme. The second phase requires a further Needs Assessment. This time the information users will include planners and designers at the national level, and the information needs and dissemination requirements will grow accordingly.

The decision makers will benefit from regular reports on project and programme approaches in other countries, from state-of-the-art reports on technological and institutional issues, from access to appropriate training curricula and materials, and from an information handling system which will help to collate all project records for progress monitoring and evaluation purposes. Again the Needs Assessment identifies a need for extra resources, this

time at the national level in the Ministry itself.

The planned documentation centre will gain from the growing automation experience on the pilot TIE activities, and, with IRC help, will establish regular links with outside data bases such as ENSIC, REPIDISCA, CEHANET, and so on. Most important, the Ministry will now develop a standard way of recording, monitoring and disseminating project data across all its projects.

And there is another important link in the chain. The International Training Network for Water and Waste Management (ITN) has a Regional Centre in INFOnesia. MLG technical staff have already benefited from a number of the centre's training courses. Now, a trainee documentalist will be put through the ITN technical information exchange module, and MLG will develop links with the centre for literature searches to answer specific queries.

In parallel with MLG's expanding TIE activities, DWS, MPW and MoH have begun TIE activities on a number of individual water and sanitation projects, and informal contacts are developing among different offices of each agency. It is clear

that coordination is needed. Because of its longer experience it is logical for MLG to take a lead role in initiating interagency TIE.

**Phase 3**

The last phase in building up TIE self-sufficiency in TIEland begins with another Needs Assessment. The established documentation centre in MLG seems an appropriate choice as a focal point for information collection, analysis and distribution. Also MLG experience in the second phase of TIE can now be used to assist the other sector agencies in developing the TIE resources and facilities at the national level.

It is now eight years since MLG and AIDA initiated TIE on the two pilot projects. In that time TIEland has become a focus of attention for many other countries in the region seeking to emulate its successes in the implementation of low-cost water supply and sanitation projects, all of which is now reported quarterly in TIEWASH, the national water and sanitation journal launched last year by MLG's busy documentation centre.