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## Achievements and Challenges



Water and Sanitation for All: A World Priority

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In March 1994, the Netherlands Government hosted an international Ministerial Conference on Drinking Water and Environmental Sanitation under the auspices of the Ministry of Housing, Spatial Planning and the Environment (VROM) and the Ministry of Foreign Affairs. The aim of the conference was to ensure that there would be genuine follow-up to the recommendations set forth in the Freshwater Chapter (Chapter 18) of Agenda 21, the global programme endorsed by heads of government at the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992.

The Noordwijk Conference was supported by a series of six key background papers, and resulted in a Political Statement and Action Programme, which were published in the Conference Proceedings.

To make this information more accessible and more widely available, the Ministry of Housing, Spatial Planning and the Environment is now publishing *Water and Sanitation for All A World Priority*, a series of three booklets based on the conference papers and other sources. The aim is to encourage policy makers and managers to initiate and maintain follow-up actions in support of the Political Statement and Action Programme and so ensure that the benefits of safe water and adequate sanitation can be enjoyed by all.

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Water and Sanitation for All: A World Priority

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## *Achievements and Challenges*

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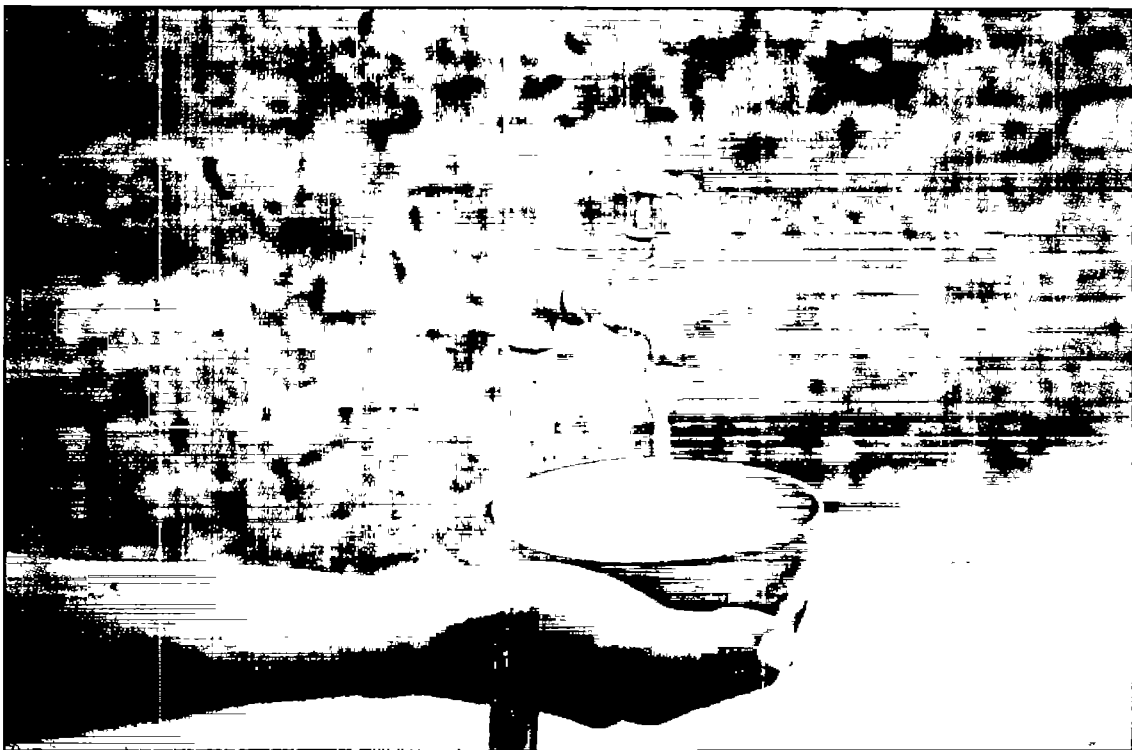


Photo IIC

What is water, if not the pillar of life? Mr. Ahmad Al-Akayleh, Minister of Municipal and Rural Affairs and the Environment, Jordan.

All case study items and quotations featured in the text are taken from speeches and statements to the Noordwijk Conference.

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## SUMMARY

One of the vital lessons of the International Drinking Water Supply and Sanitation Decade (1981-1990) was that drinking water and sanitation are an integral part of the overall water resources environment. An integrated approach is needed, taking into account all the linkages between water usage and waste disposal. Success in such an approach depends on translating political will into effective sector strategy. Water and sanitation coverage *can* be increased if governments will do more to use the resources already available.

The Decade produced real achievements, but many challenges remain. These challenges can be met; but the solutions are often stalled by political inaction. To overcome this constraint, an international Ministerial Conference on Drinking Water and Environmental Sanitation was organized by the Netherlands Government in 1994. The aim was to ensure follow-up to Agenda 21, the global action plan approved by the 1992 United Nations Conference on Environment and Development – the Earth Summit.

It is now accepted that water is not an infinite resource, and that policies based on the supply of water rather than the demand for it lead to inefficiency and waste. The emphasis today is on demand management based on the consumer's ability to pay for water and sanitation facilities. The importance of involving local communities right from the start has also been recognized, especially in household sanitation projects.

The developing countries suffer most from water shortages, lack of access to safe water supplies and inadequate sanitation, but the newly independent countries of Eastern and Central Europe are also affected by heavily contaminated water sources, and the industrialized countries are experiencing serious problems of water pollution, scarcity and wasteful use. These problems all contribute to an urgent environmental crisis. A review of the situation in various parts of the world emphasizes how widespread the problems are, and how much remains to be done.

While it is the political and economic environment which determines the success or failure of attempts to expand water and sanitation coverage, this environment in turn is affected by what happens in the sector. Communities whose health and quality of life are improved feel satisfied with the government, while community participation creates political maturity, which strengthens democracy in the country. Access to safe water and sanitation is frequently the starting point for the economic development of a community and a powerful aid to combating poverty.

Much has been achieved in water and sanitation since the United Nations Water Resources Conference in Mar del Plata, Argentina, in March 1977. Low-cost technologies for drinking water have been disseminated in the developing world, and there has been significant technological progress in sanitation. Providing safe water and sanitation to the poor has been made a global issue, and the objectives of improving human health and wellbeing have become clearer. There is more acceptance of the importance of hygiene education, information and communication strategies, training, and community participation in decision-making, management and maintenance, and of ensuring equal opportunities for men and women in this respect.

It is recognized that governments have to develop policies for allocating water to competing users, promoting its efficient use and recovering the costs involved.

Three key areas where fundamental changes of approach could help build on past achievements and bring real prospects of accelerated and sustainable progress have been identified. They are:

1. *Improving the effectiveness of sector investments*  
Including: the creation of a comprehensive policy framework for the integrated development of water resources and environmental sanitation, water resources assessments, decentralization, institutional development, including human resources development; the use of pricing mechanisms and other incentives to conserve water



and allocate it among competing users; and community participation, including the full participation of women

- 2 *Maximizing the mobilization and use of financial resources*
3. *Increasing the extent of collaboration at all levels.*

In spite of the progress which has been made since Mar del Plata, many problems remain. The main challenges still to be faced are:

1. *Challenges in partnership*  
Including: changing the role of government from provider of water and sanitation services to that of 'enabler'; improving collaboration, involving the private sector, and better communication
- 2 *Challenges in water management*  
Including: planning for integrated development; balancing investments, dealing with water scarcity and urban issues; allocating water among competing users, controlling pollution; and sharing water resources.
3. *Challenges of capacity-building*  
Including: capacity-building for change; developing institutions, participation by the community; dealing with gender issues, education; developing human resources, providing information; and applied research.
4. *Challenges of finance*  
Including the financing of new services and of the replacement of infrastructure.

While much has been achieved in recent years, there is still a need to translate the lessons from the past into implementation in the future. The decision as to what that future should be rests with the politicians.

## RÉSUMÉ

L'une des leçons fondamentales tirées de la Décennie mondiale pour l'approvisionnement en eau potable et l'assainissement (1981-1990) est que l'eau potable et l'assainissement font partie intégrante de tout ce qui touche aux ressources mondiales en eau. Il y a donc lieu d'appliquer une approche intégrée qui prenne en compte tous les liens existant entre les usages de l'eau et l'évacuation des déchets. La réussite d'une telle approche dépend de la façon dont la volonté politique se traduira en une stratégie sectorielle efficace. La couverture des besoins en eau et en assainissement peut être améliorée si les gouvernements déploient davantage d'efforts pour que les ressources existantes soient mieux utilisées.

La Décennie mondiale pour l'approvisionnement en eau potable et l'assainissement a produit des résultats concrets, mais de nombreux défis restent à relever. Les solutions sont malheureusement souvent entravées par l'inaction au niveau politique. Pour surmonter cet obstacle, une Conférence ministérielle internationale sur l'eau potable et l'assainissement de l'environnement a été organisée par le gouvernement des Pays-Bas, en 1994, cette conférence avait pour objet d'assurer le suivi de l'Agenda 21, le plan d'action mondial approuvé par la Conférence des Nations Unies sur l'Environnement et le Développement de 1992 (le Sommet de la Terre).

Il est désormais reconnu que l'eau n'est pas une ressource illimitée, et que des politiques fondées sur l'approvisionnement plutôt que sur la demande d'eau débouchent sur l'inefficacité et le gaspillage. Désormais, l'accent est mis sur la gestion de la demande, basée sur la capacité du consommateur à payer pour les équipements d'alimentation en eau et d'assainissement. L'importance de l'implication des communautés locales dès le départ a également été reconnue, en particulier dans les projets d'assainissement domestique.

Les pays en développement sont les plus touchés par les pénuries d'eau, le manque d'accès à l'eau saine et l'assainissement inapproprié, mais les pays d'Europe centrale et orientale devenus récemment indépendants sont également confrontés à des ressources en eau fortement polluées, tandis que les

pays industrialisés connaissent de graves problèmes de pollution, de rareté et de gaspillage de l'eau. Tous ces problèmes rendent la crise de l'environnement imminente. Une analyse de la situation dans différentes parties du monde fait apparaître l'étendue des problèmes et du chemin qui reste encore à parcourir.

Alors que c'est l'environnement politique et économique qui détermine le succès ou l'échec des efforts visant à couvrir plus largement les besoins en eau et en assainissement, cet environnement à son tour est influencé par ce qui se passe dans le secteur de l'eau. Les communautés dont la santé et la qualité de vie s'améliorent sont satisfaites du gouvernement, leur participation à la vie communautaire les rend politiquement plus matures, ce qui renforce la démocratie dans le pays. L'accès à de l'eau propre et à l'assainissement est très souvent le point de départ du développement économique d'une communauté et un puissant moyen de lutte contre la pauvreté.

Beaucoup de choses ont été réalisées dans le domaine de l'eau et de l'assainissement depuis la Conférence des Nations Unies sur les ressources en eau à Mar del Plata, en Argentine, en 1977. Des technologies pour obtenir de l'eau potable à faible coût ont été répandues dans le monde en développement, et d'importants progrès technologiques ont été réalisés en matière d'assainissement. L'approvisionnement des populations pauvres en eau saine et l'assainissement sont devenus un problème mondial, et les objectifs d'amélioration de la santé et du bien-être des hommes sont devenus plus clairs. L'importance de l'éducation à l'hygiène, de l'information et des stratégies de communication, de la formation, de la participation de la communauté à la prise de décision, de la gestion et de l'entretien est désormais davantage reconnue ainsi que la nécessité d'assurer des chances égales aux hommes et aux femmes. Les gouvernements ont reconnu qu'ils doivent élaborer des politiques pour fournir de l'eau aux différentes catégories d'utilisateurs, promouvoir une consommation efficace et recouvrer les coûts.

Trois domaines clés dans lesquels des changements d'approche fondamentaux pourraient aider à bâtir

sur ce qui a été réalisé et ouvrir de réelles perspectives de progrès rapide et durable ont été identifiés:

1. *Améliorer l'efficacité des investissements dans le secteur de l'eau,*  
Cela comprend. la création d'un cadre politique global pour le développement intégré des ressources en eau et de l'assainissement de l'environnement, l'évaluation des ressources en eau; la décentralisation; le développement institutionnel, y compris le développement des ressources humaines, l'utilisation des mécanismes de prix et d'autres stimulants pour préserver l'eau et la distribuer aux différentes catégories d'usagers; et la participation de la communauté, y compris la pleine participation des femmes.
2. *Maximiser la mobilisation et l'utilisation des ressources financières*
3. *Augmenter l'étendue de la coopération à tous les niveaux.*

En dépit des progrès réalisés depuis Mar del Plata, il reste de nombreux problèmes. Les principaux défis à relever sont les suivants.

1. *Défis en matière de partenariats*  
Cela comprend. changer le rôle du gouvernement, de fournisseur de services d'eau et d'assainissement, le transformer en "faciliteur"; améliorer la coopération; faire participer le secteur privé, et améliorer la communication.
2. *Défis en matière de gestion de l'eau*  
Cela comprend. planifier le développement intégré; équilibrer les investissements; s'occuper de la pénurie d'eau et des problèmes urbains, distribuer l'eau aux différentes catégories d'usagers; contrôler la pollution et partager les ressources en eau.
3. *Défis en matière de création de capacité*  
Cela comprend: créer une capacité de changement; développer les institutions et la participation de la communauté; s'occuper des problèmes de genre; développer l'éducation et les ressources humaines, informer et promouvoir la recherche appliquée.

#### 4. *Défis en matière de finances*

Cela comprend. le financement de nouveaux services et/ou le remplacement de l'infrastructure.

Même si beaucoup de choses ont été réalisées ces dernières années, il reste nécessaire de tirer les enseignements du passé et de les concrétiser dans l'avenir. C'est aux hommes politiques que revient de décider de ce que sera cet avenir.

## RESUMEN

Una de las lecciones más importantes de la década internacional dedicada al suministro de agua potable y los saneamientos (1981-1990) fue que el agua potable y los saneamientos son parte integrante de la cuestión global de los recursos de agua. Es preciso un enfoque integral que tenga en cuenta todas las relaciones entre el uso del agua y su eliminación. El éxito de tal enfoque depende de la conversión de la voluntad política en una estrategia sectorial eficaz. La cobertura del suministro de agua y de los saneamientos pueden mejorarse si los gobiernos trabajan más por utilizar los recursos que ya existen.

Esta década permitió logros reales, pero sigue habiendo muchos desafíos. Son desafíos a los que podemos responder, pero las soluciones muchas veces están estancadas por la inacción política. Para superar esta limitación, el gobierno holandés organizó en 1994 una Conferencia Ministerial Internacional sobre agua potable y saneamiento medio ambiental. Su objetivo era garantizar el cumplimiento de la Agenda 21, el plan de acción global aprobado por la Conferencia de 1992 de las Naciones Unidas sobre medio ambiente y desarrollo, la denominada Cumbre de la Tierra.

Es ahora una idea aceptada que el agua no es un recurso infinito, y que las políticas basadas en el suministro de agua más que en la demanda conducen a la ineficacia y al despilfarro. Hoy se insiste en una gestión de la demanda basada en la capacidad del consumidor para pagar por el agua y por las instalaciones de saneamiento. También se ha reconocido la importancia de implicar a las comunidades locales desde el principio, de forma especial en los proyectos de saneamiento doméstico.

Los países en vías de desarrollo son los que más sufren la carestía de agua, la falta de acceso a un suministro de agua seguro y los saneamientos inadecuados, pero los países recientemente independizados del este y el centro de Europa también se ven afectados por unos recursos de agua muy contaminados, y los países industrializados están experimentando graves

problemas de contaminación del agua, de escasez y de empleo sin medida. Todos estos problemas contribuyen a una grave crisis medio ambiental. La revisión de la situación en distintas partes del mundo destaca la extensión de estos problemas y descubre cuánto queda por hacer.

Aunque es el ambiente político y económico lo que determina el éxito o el fracaso de los intentos de aumentar la cobertura del suministro de agua y de los saneamientos, este entorno a su vez recibe la influencia de lo que ocurra en el sector. Aquellas comunidades cuya sanidad y calidad de vida han mejorado se sienten satisfechas del gobierno, al tiempo que la participación de la comunidad consigue madurez política, que refuerza la democracia en el país. El acceso a un agua sin problemas y a los saneamientos muchas veces es el punto de partida para el desarrollo económico de una comunidad y una poderosa ayuda para combatir la pobreza.

Es mucho lo que se ha conseguido en relación con el agua y los saneamientos desde la Conferencia sobre recursos de agua organizada por las Naciones Unidas en Mar del Plata, Argentina, en marzo de 1977. Las tecnologías de bajo coste para el agua potable se han propagado en el mundo en vías de desarrollo, y ha habido notables avances tecnológicos en los saneamientos. Facilitar agua limpia y saneamientos a los pobres se ha convertido en un tema mundial, y los objetivos de mejora de la salud humana y de aumento del bienestar se han hecho más claros. Hay una mayor aceptación de la importancia de las estrategias de educación, información y comunicación en relación con la higiene, de la preparación y la participación de la comunidad en la toma de decisiones, la gestión y el mantenimiento, así como de garantizar la igualdad de oportunidades para hombres y mujeres en este campo. Se ha reconocido que los gobiernos tienen que desarrollar políticas para asignar el agua a usuarios en competencia, promoviendo su empleo eficaz y recuperando los costes en que se haya incurrido.

Se han definido tres áreas clave en las que unos cambios fundamentales de enfoque podrían ayudar a aprovechar los logros del pasado y a crear perspectivas reales de progreso acelerado y sostenible. Son las siguientes:

1. *Mejorar la eficacia de las inversiones en el sector*  
Incluye: la creación de un marco político completo para el desarrollo integrado de los recursos de agua y el saneamiento medio ambiental; evaluación de los recursos de agua, descentralización, desarrollo institucional, incluido el desarrollo de los recursos humanos, utilización de mecanismos para fijar precios y otros incentivos para la conservación del agua y su asignación a usuarios en competencia; participación de la comunidad, incluida la participación plena de las mujeres.
2. *Potenciar al máximo la movilización y el empleo de los recursos económicos.*
3. *Aumentar el alcance de la colaboración en todos los ámbitos*

Pese a los avances conseguidos desde la reunión de Mar del Plata, sigue habiendo numerosos problemas. Los grandes desafíos a los que aún hay que enfrentarse son:

1. *Desafíos en colaboración*  
Incluye: convertir el papel del gobierno de proveedor de agua y de servicios de saneamiento en un papel de "habilitador", perfeccionar la colaboración, involucrar al sector privado; mejores comunicaciones.
2. *Desafíos en la gestión del agua*  
Incluye: planificación para un desarrollo integrado; equilibrar las inversiones, ocuparse de la escasez de agua y de las cuestiones urbanas, asignar el agua a usuarios en competencia; controlar la contaminación; compartir los recursos de agua
3. *Desafíos en la creación de capacidad*  
Incluye: creación de capacidad para el cambio; desarrollo de las instituciones; participación de la comunidad; ocuparse de la discriminación por razón de sexo, educación; desarrollo de los recursos humanos; proporcionar información; investigación aplicada

#### 4. *Desafíos de financiación*

Incluye la financiación de nuevos servicios y la renovación de las infraestructuras

Aunque se ha conseguido mucho en los últimos años, sigue existiendo la necesidad de transformar las lecciones del pasado en realidades para el futuro. La decisión en cuanto a cuál ha de ser ese futuro está en manos de los políticos.



## SOME ACHIEVEMENTS - MANY CHALLENGES

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Photo: M. Boesveld

Every day during the International Drinking Water Supply and Sanitation Decade (1981-1990) about 330,000 people in developing countries gained access to a safe supply of drinking water and some 210,000 were provided with better sanitation facilities. Better water and sanitation were provided more than twice as fast as in the 1970s.

These figures would be very impressive, were it not for the fact that, during the same period, the population of developing countries was growing by about 200,000 people a day. As a result, more than 1,000 million people were still without access to safe water in 1990 and some 1,700 million had inadequate sanitation facilities. At least eighty countries, with 40 percent of the world's population, suffer from serious water shortages. In others, enough water resources are available, but they are expensive to use. The more easily accessible supplies have already been depleted and new sources cost much more to tap and treat to acceptable standards.

There are environmental as well as financial costs involved. In some countries, usable water is becoming scarcer because modern farming practices, industrialization and urbanization are polluting surface and ground water. Water resources are also threatened by changes in the world's climate. Better sanitation facilities are not being provided fast enough to keep up with the need. This not only adds to the pollution of water resources and the living environment, but also means that the health

benefits to be expected from better sanitation are still far from being realized

It is alarming that a larger percentage of the world's population are today without access to safe drinking water than was the case before the Water Decade started.

Mr. Borre Petersen, State Secretary, Ministry of Environment, Norway.

The problems of poor people in peri-urban areas in developing countries are being made worse by the continuing increase in migration from the countryside. As the situation continues to deteriorate, governments in many countries find it increasingly difficult to tackle these problems due to general economic difficulties.

The deterioration of water and sanitation has widespread effects. A vicious cycle of environmental damage is set up; productivity of industry and agriculture falls; the incidence of disease rises, affecting the labour force and putting stress on the financial resources needed to strengthen the economy; and so the ripple-effect continues, in ever-widening circles.

One of the vital lessons of the Decade is that drinking water and sanitation are an integral part of the overall water resources environment, being affected by it as well as having effects on it. This means that an integrated approach is needed, taking into account all the linkages between water usage and the disposal of solid and liquid wastes. For such an approach to be successful, adequate finance is essential; but the real key to the situation is the translation of political will into effective sector strategy. Water and sanitation coverage *can* be increased if governments will do more to mobilize and make efficient use of all the resources already available for the task.

The intensive and concerted efforts of the 1980s taught sector professionals a great deal about how to implement successful water and sanitation programmes. They learned, through failures and successes:

- how to involve users, public and private sector agencies, non-governmental organizations (NGOs), government agencies and donors (all 'stakeholders' in the water and sanitation sector) in the planning and design of programmes
- that schemes have to meet the real needs and aspirations of users so that the costs of implementing and maintaining improved services will be sustainable
- that all development must be based first of all on the effective use of local resources, including financial and human resources
- to make full use of existing technologies and methods before introducing external innovations
- that the water and sanitation sector does not operate in isolation, but is an



integral part of the management of increasingly threatened water resources and of measures to reverse *environmental degradation*

- that sanitation demands as much attention as water supply, and that communication and hygiene education need to be given as much emphasis as the provision of physical facilities, if the prime benefit – better health – is to be achieved.

Above all, they learned that political commitment, and particularly the commitment of governments to act as 'enablers' rather than 'providers' of services, is the prerequisite for success

If the Decade produced real achievements, many real challenges remain. These challenges can be met; solutions to the problems do exist. But they are stalled in many places by political inaction. The aim of the Noordwijk Conference was to overcome this constraint and initiate a programme of action that would make water and sanitation for all truly a world priority. The Conference approved a Political Statement to this effect which provided the basis for an Action Programme focusing on five main areas of concern:

1. Water and people: bringing about partnership and behavioural change
2. Water, health and the environment – integrating water policy
3. Water and institutions – organizing service provision
4. Water and mobilizing financial resources – building assets for the future
5. Water and the world – promoting international support.

The complete texts of the Political Statement and Action Programme endorsed by the Noordwijk Conference are included in the third booklet in this series, *No More Business as Usual*.

## THE LONG ROAD TO RIO

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Water supply has been a concern of humanity ever since people started living in organized communities. Extensive water and drainage works were constructed by ancient civilizations in cities as different as Rome in Europe and Macchu Picchu in South America.

In modern times, the stimulus towards development of water and sanitation came in the middle of the 19th century as urban populations expanded following the industrial revolution. It was only in the 1950s that the international community began to focus on drinking water supply, with the World Health Organization as a major advocate for action, emphasizing the links between water supply and health. The need for low-cost technologies to solve the water supply problems of the developing countries made this issue the prime one during the 1960s. However, the main thrust remained directed towards water supply and waste disposal in urban areas, a concern for rural areas only came to the fore towards the

end of that decade. Technology was still considered to provide the main solution, but the involvement of communities also began to be seen as important to the development process. Also at this time, sanitation came to be recognized as the necessary accompaniment to water supply

For several years, the term 'community participation' really meant that communities were being asked to help with projects being planned and implemented by national authorities and external support agencies (ESAs). It was not until the late 1980s that it became clear that this approach was undermining the capacity of people to take care of their own needs and problems – something which is now recognized as the key to ensuring the sustainability of water and sanitation projects

Building the capacity of men, women and communities to solve local problems is a major step towards effective water and environmental management.

Hans Alders, Minister of Housing, Spatial Planning and the Environment, The Netherlands.

It is now generally accepted at the political level that water is not an infinite resource. There has also been a growing understanding that policies which focus mainly on the supply of water rather than on demand for it lead to inefficiency and waste, and tend to benefit the more affluent sections of society. The emphasis today is on demand management through pricing policies that reflect the true costs of water and sanitation facilities and are based on the consumer's ability to pay. The attitude towards sanitation has also changed. Only recently have planners and implementers come to recognize the importance of a multi-pronged partnership approach, involving participation in decision-making by all sections of the community right from the inception of the project, especially in respect of household sanitation projects

Since the United Nations Water Resources Conference in Mar del Plata, Argentina, in March 1977, many regional and global meetings have succeeded in establishing common principles for the planning and implementation of water and sanitation programmes. The World Summit for Children, for example, which coincided with the end of the Decade in 1990, agreed on the goal of 'universal access to safe drinking water and to sanitary means of excreta disposal' by the year 2000. Also in 1990, the Global Consultation on Safe Water and Sanitation for the 1990s, held in New Delhi, India, established guiding principles for water and sanitation in respect of: the integrated management of water resources and liquid and solid wastes; institutional reforms and the full participation of women, community management of services, and sound financial practices

Another landmark was the International Conference on Water and Environment, held in Dublin, Ireland, in January 1992. This meeting took the conclusions of regional and global consultations at the end of the Decade, combined them with specialist inputs from the linked fields of water resources and environment, and formulated proposals for the United Nations Conference on Environment and Development (UNCED) (also known as the 'Earth Summit'), which was held in Rio de Janeiro later in the same year.

The Earth Summit approved an action programme, known as 'Agenda 21', one chapter of which (Chapter 18) deals with the protection of freshwater resources. In endorsing Agenda 21 in Rio, world leaders committed their governments, both to accelerating the provision of sustainable water and sanitation services to those who lack them at present, and to conserving and protecting the world's freshwater resources.

Chapter 18 of Agenda 21 identifies seven areas for action and four objectives in respect of water and sanitation, and urges governments to design strategies and programmes for water supply and sanitation based on the most efficient possible use of available resources. This calls for the use of appropriate technologies, the training of staff, community involvement in water supply and sanitation projects, and capacity building at all levels.

### WATER AND SANITATION IN AGENDA 21

Chapter 18 of Agenda 21 sets out seven areas for action in its section on water and sanitation:

- integrated water resources development and management
- water resources assessment
- protection of water resources, water quality and aquatic ecosystems
- drinking water supply and sanitation
- water and sustainable urban development
- water for sustainable food production and rural development; and
- impacts of climate change on water resources.

It established the following objectives for water and sanitation:

- Protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid wastes.
- Institutional reforms promoting an integrated approach and including changes in procedures, attitudes and behaviour, and the full participation of women at all levels in sector institutions.
- Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes
- Sound financial practices, achieved through better management of existing assets, and widespread use of appropriate technologies.

It urged governments to design strategies and programmes for water supply and sanitation based on the most efficient possible use of available resources. This entails:

- The use of appropriate technology, including traditional and indigenous practices as far as practicable.
- Training of male and female professional and technical staff, and increasing the access of women to training in maintenance of equipment, water resources management and environmental sanitation
- Planning and management at the most appropriate level, and community involvement in the conception, planning, decision-making, implementation and evaluation of projects for domestic water supply and sanitation.
- Capacity building at all administrative levels down to the community. Institutional capacity building and technical cooperation between developing countries are also very important.

## WATER AND SANITATION IN THE WORLD TODAY

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The countries suffering most from water shortages, lack of access to safe water supplies and poor or non-existent sanitation are mainly to be found in the developing regions of Africa, Asia and Latin America and among the small island states of the Caribbean, the Indian Ocean, the South Pacific and other areas. While water and sanitation coverage in these areas was improved during the Decade, the effects were undermined by population growth and economic problems



Photo: M. Bourne

However, water and sanitation problems are not confined to developing countries. In the newly independent countries of Eastern and Central Europe, water sources are heavily contaminated and infrastructure is breaking down. Industrialized countries are also experiencing serious pollution of water resources, water scarcity and wasteful use. The volume and toxicity of industrial waste, intensive farming, and excessive consumption all contribute to an environmental crisis which cries out for urgent attention.

A review of the situation in various parts of the world emphasizes how widespread the problems are, and how much remains to be done.

### SUB-SAHARAN AFRICA

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The plight of Sub-Saharan Africa is extremely serious. Civil war and climatic disasters have taken their toll, swallowing funds, destroying infrastructure and preventing the extension of coverage. The debt burden and subsequent structural adjustment programmes have drastically reduced budgets for what are still regarded as social services. The terms of trade have become increasingly unfavourable. Prices of export products have fallen, reducing the availability of foreign exchange and thus affecting entire economies. Population growth is continuing to outstrip economic growth. As economies worsen, urbanization has increased and is aggravating the problems of already overburdened local authorities.

## **AFRICA 2000**

*AFRICA 2000 is an initiative of the World Health Organization, launched at the request of ministers of health from forty-six sub-Saharan African countries in 1993 to assure access to safe water supply and adequate sanitation to all the people of Africa. The programme aims to raise awareness of the magnitude of water supply and sanitation needs in Africa, establish consensus among African governments as to joint actions to meet these needs, create a new partnership between African governments and ESAs, and increase the flow of resources for water supply and sanitation development in the region*

In spite of this, there have been some positive developments. The environment is high on government agendas and some countries have set up environment ministries. Many of the UNCED agreements relating to water and sanitation are being carried out to varying degrees. More and more, communities are being involved in project decisions affecting them, women are playing an increasingly important part in the inception of projects, as well as in their implementation, operation and maintenance; and a start has been made in some countries towards recovering costs from consumers.

Many problems remain. African governments continue to be direct providers of water and sanitation services. In rural areas, the costs are often borne totally by central government, while in urban areas, the pricing structure often covers only part of the costs incurred – which may, indeed, be all that is possible in many situations.

Responsibilities for water and sanitation are frequently spread among several ministries and departments and are therefore difficult to coordinate. Sanitation, in particular, has been adversely affected by a lack of interaction between ministries. Most urban centres in Africa have no sewerage system at all. In cities which do have sewerage disposal, the systems rarely serve more than a small proportion of the population.

There is little institutional support for water supply and sanitation activities. This is because government policies fail to involve them, as well as because of the weakness of the institutions themselves. Government agencies and research institutions are under-funded, do not pay competitive salaries and do not provide stimulating working environments. Researchers are also isolated from international information sources. As a result, both agencies and research institutions lose many of their best people to the private sector or to institutions and agencies abroad.

Effective water resources management is becoming more and more difficult, as national hydrological monitoring networks are in decline and there is a lack of qualified staff.

## **NORTH AFRICA AND THE MIDDLE EAST**

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The main problems in North Africa and the Middle East are water scarcity (leading to a progressively rising marginal price for new supplies), the salinization of coastal aquifers, and dependence on internationally-shared water resources.

Scarcity can force water agencies into costly water resource development. Recent works to supply the *Jordanian capital, Amman*, for example, involved pumping water through a height of 1,200 metres from a site about 40 kilometres from the city. The high potential for international conflict over shared resources makes it vitally important to find solutions to scarcity problems.

We can build a world where water is secured for all,  
or a world where water is a cause for war.

Mr. Elias Díaz Peña, Paraguay, representing the NGO community.

'Future Challenges'

To increase water supply in the region, there is a trend towards reusing waste water. Morocco is developing a national plan for water use which integrates waste water with surface and groundwater resources. Similarly, sewerage for environmental sanitation forms an integral component of an agricultural, social and rural community development programme in Yemen. There is also a move towards conversion from open canals to piped networks for irrigation.

## ASIA AND THE PACIFIC

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Half of the 1,000 million people without access to safe water in the developing countries, and three-quarters of the 1,700 million people lacking adequate sanitation, live in Asia.

The main problems in this region are caused by rapid economic growth and continued population increase without adequate integrated water and sanitation development. In many places, water problems have become acute because of rapid industrialization and urbanization, which have led to rising demand for water for domestic and industrial use and for energy generation. The water requirements of the agricultural sector have also increased with the need to feed rising populations.

Rivers are heavily polluted, raising the cost of safe water supplies. In several countries, over-extraction, poor quality of irrigation water or lack of drainage have led to salinization of aquifers, land subsidence and degradation of agricultural land. Sedimentation is a major problem in many river basins, because of poor land management in the catchments.

The response to these problems has generally been to build more and bigger projects, rather than use the existing infrastructure and water resources more efficiently. Legislation is usually contradictory with regard to property rights in water, which makes the use of economic criteria in water management more difficult. Also, Asian governments have historically regarded water supply as a social service, rather than an economic good whose extraction and supply involve costs that have to be recovered.

As in Africa, most urban centres in Asia have a serious sewage disposal problem and the water sources of large cities like Bangkok, Dhaka, Jakarta, Karachi and Manila are seriously polluted

Responsibilities for water and sanitation are shared by many ministries and this often creates problems of coordination. Some Asian countries have well-organized NGOs which play an important role both through direct work with communities in water and sanitation projects and by putting pressure on governments over environmental and development issues.

### **INVESTMENT IN INDIA**

*India has succeeded in providing safe drinking water to more than 75 percent of the population, but the remaining 25 percent accounts for 200 million people. During the International Drinking Water Supply and Sanitation Decade, India invested more than US\$ 3,000 million (excluding external aid) in its rural drinking water programme*

There is a high degree of technological innovation in Asia, especially in the development of low-cost technologies and approaches. Some products (for example, handpumps) and community-based approaches have been spread successfully to other regions.

Special problems of the Pacific island nations include over-extraction leading to depletion and salinization of aquifers, and the threat posed by rising sea levels as a result of global warming.

## **L A T I N   A M E R I C A   A N D   T H E   C A R I B B E A N**

In Latin America, as in other regions, a major issue is not the quantity of water available, but rather the difficulty of supplying it to consumers. In this region, 60 per cent of the population is concentrated in 20 percent of the land area which contains only 5 percent of the region's water resources. Often, water has to be transported uphill, as in the case of Mexico City, which is considering pumping water up 1,000 metres from a lower region. Copious water resources like those in the Amazon basin can only be used at great cost.

The quality of water is a problem in this region. In the large cities, water is trucked in and sold at very high prices to low-income 'illegal' residents. Transferring water from the vendor to the storage vessels used by consumers, and its subsequent use in an unsanitary environment creates many opportunities for contamination. This is thought to have been one reason for the rapid spread of cholera in several Latin American cities in 1991. Even piped water gets contaminated because the economic decline of the region has forced postponement of system repairs, leading to leakages and negative pressure in pipes.

Environmental sanitation is another major problem. In the cities, the sewerage systems were built to serve the affluent parts of the population. Most low-income residents are either completely unserved or, at best,

under-served with sanitation. The same conditions apply in many rural areas. Some progress has been made recently towards serving low-income groups, often as a result of NGO initiatives, but much more needs to be done, especially in view of continued heavy rural-urban migration

There is a serious lack of sewage treatment facilities. Only 2 per cent of all sewage is treated. Insufficient maintenance has led to the breakdown of infrastructure: in Mexico, for example, more than 90 percent of all waste water treatment plants are not operating

The vast majority of rivers in and around cities and towns in developing countries are little more than open, stinking sewers.

I. Saegeldin, Vice-President for Environmentally Sustainable Development, The World Bank.

Rivers generally receive a lot of waste and are becoming highly polluted, leaving few options for downstream users. Many lakes and man-made reservoirs are badly affected by heavy growths of algae and other plant life, owing to the discharge of nutrients from drainage water and untreated domestic waste water. In Brazil, for example, the upper Tiete river in São Paulo state receives large volumes of drainage water, which contributes to the depletion of oxygen in downstream reservoirs designed to regulate flow and generate hydroelectric power.

As in other parts of the developing world, the administrative division of water and sanitation responsibilities among many agencies creates obstacles to achieving wider coverage. Recent moves towards private sector involvement in some operations may represent the wave of the future. In Buenos Aires, for example, the private sector is to supply water to the public utilities, which will then distribute it.

Waste disposal poses a major problem in several Caribbean countries. This is so even in Barbados, which has 100 percent sanitation coverage but where the use of private septic tanks and absorption pits, and inadequate waste disposal within the public system, pose a serious environmental threat

## NEWLY INDEPENDENT STATES IN EUROPE

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There is limited reliable information on the situation in the newly independent states of Eastern and Central Europe, but recent studies confirm that the biggest problems are outdated and collapsing infrastructure and pollution of water resources

In some countries, water pipes made of asbestos are cracking, adding to water loss. In most, treatment plants are inefficient or have stopped working. A new waste water treatment plant in Vilnius consumes so much energy that it would pay the city to demolish it and construct a more efficient one. Rehabilitation and maintenance of infrastructure is made difficult by limited financial resources. Domestic consumer tariffs are very low and the collapse of many industries has reduced revenue from this source.



The problem is made worse by pollution of surface and ground waters. The most notorious case is that of the Aral Sea, which has been reduced in volume by 70 percent since 1956 because of diversion of its tributaries to grow cotton and rice. The sea is contaminated with chemicals from agricultural fertilizers, pesticides and herbicides. Its salinity is now three times that of the ocean and salt from its shores is spread by the wind, making the soil saline for hundreds of kilometres around. In the words of Mr. Khabibullayev, Chairman of the Uzbekistan State Committee for the Environment, speaking at the Noordwijk Conference:

*"The drying up of the Aral Sea ... is one of the greatest ecological disasters mankind has caused this century"*

Raw sewage and industrial effluents containing heavy metals and toxic chemicals are the main contaminants of surface water. Groundwater is also contaminated by chemicals from agricultural runoff. One effect of economic reform in central Europe has been the profitable importation for dumping of toxic waste from western Europe, either disguised as 'raw materials' or ostensibly for reprocessing.

#### **POLLUTION IN HUNGARY**

*In Hungary, the importance of international cooperation is emphasized by the fact that 96 percent of flowing waters arrive from upstream countries. Although subsurface waters form a significant natural resource, 65 percent are situated in vulnerable geological environments at risk from contamination by surface pollutants and wastewater. Although 94 percent of the population has access to drinking water, only 50 percent of sewage is treated.*

Water supply coverage is generally high, but sanitation has lagged behind. In some countries, most of the rural people do not have access to adequate sanitation facilities. In urban areas, treatment and disposal of wastewater is a big problem.

Responsibilities for water and sanitation are shared among several ministries but coordination is minimal. At the management level, there is an urgent need for training.

The chaos accompanying the transformation of the economies, the lack of financial resources and unstable political conditions, which in some cases have exploded into civil war, have all served to hamper the development of water and sanitation in the region. Projects with environmental components are being financed by international lending institutions and industrialized country governments (through the European Union and bilaterally). A number of conferences have been held to identify the problems and propose solutions.

The main problems in the industrialized countries are the contamination of surface water resources and groundwater, and the management of transboundary water bodies

Pollution originates from industry, agriculture and domestic consumers. Industries continue to flout laws regulating the discharge of hazardous substances into water bodies, while industrial emissions cause acid rain that damages the forests (which play an important part in the hydrological cycle) and kills aquatic life essential to the health of water bodies. Runoff from agricultural land contains pesticides, herbicides and an excessive amount of nitrates and phosphates because of over-use of fertilizers and careless disposal of animal wastes. It also contains natural organic matter which can cause undesirable disinfection byproducts (such as chloroform) in water treatment. Domestic wastewater contributes to the problem because of its high content of phosphates and nitrogenous compounds, which stimulate oxygen depletion. The widespread use of washing machines and automatic dishwashers has dramatically increased the amount of wastewater containing phosphates.

Since not all the industrialized countries have organized the separation and proper disposal of hazardous wastes, disposal sometimes returns toxic substances to the environment. Even when separation does occur, toxic waste is sometimes 'dumped' in the newly reforming states of Eastern and Central Europe or in developing countries, where there is neither the capability nor the capacity to dispose of it safely.

Major problems in the United States include salinity caused by over-extraction for agriculture, water scarcity coupled with improper water management; overtaxing of groundwater resources; and the competition for water between agriculture and the cities.

There is a move in the industrialized countries towards water conservation. Germany has been exploring low-water sewerage technologies, while Sweden has been researching 'dry systems' for excreta disposal. Reduction of solid waste has also become a target and some countries are experimenting with waste removal charges based on the amount of waste, and with making companies pay for collection and recycling of packaging materials.

The worldwide economic downturn of the 1980s and early 1990s has stimulated governments to start privatizing water and sanitation utilities. The forms and extent of privatization vary from country to country. In many instances, privatization is said to have led to increased efficiency.

## THE POLITICAL AND ECONOMIC ENVIRONMENT

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Like other parts of the economy, water and sanitation are affected by the political and economic environment within which they operate. In the many global meetings convened to review experiences during the International Drinking Water Supply and Sanitation Decade, a common conclusion has been that the political and economic dimension is the one that most determines the success or failure of attempts to expand water and sanitation coverage

### THE POLITICAL ENVIRONMENT

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The desire of governments to ensure that safe water and adequate sanitation are available to their people, as endorsed by the Rio commitments, needs to be translated into strategies that maximize efficiency. Where centrally-managed institutions are unable to achieve the desired results, governments need to create the conditions that will enable decentralized management to do so. This is especially so with regard to community participation, which has been found to be essential for the sustainability of projects. Political will is also needed to ensure that legislation affecting water and sanitation is not only passed, but also enforced. Too often, governments fail to enforce laws (for example, against polluters) for political reasons

#### **SUCCESS IN TUNISIA**

*Tunisia is an arid country, characterized by scarce water resources and extreme variations in climate. Despite these problems, it is one of the few developing countries whose approach in water resources management has been successful. Water is ceasing to be a restrictive factor in the country's economic and social development. Drinking water supply reaches 67 percent of the population of rural areas, while the pricing policy followed by the National Water Operation and Distribution Board (SONEDE) guarantees fair and interdependent distribution among different groups of consumers. Demand management is facilitated by legal instruments relating to water resources, notably the Water Code of 1975. Publicity campaigns have increased public awareness of the scarcity of water resources and the need to protect them. The 'polluter pays' principle has been adopted in respect of industrial water disposal, and a special fund has been set up to help industries pay for pre-treatment systems.*

### THE ECONOMIC ENVIRONMENT

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In countries where the government is a service provider, spending on water and sanitation is an early casualty when national economies are not doing well. This has certainly been the case in Africa, especially in countries undergoing structural adjustment. Operation and maintenance of infrastructure has suffered first, followed by cuts in other spending

Where governments have decided to supply water and sanitation on a commercial basis and given the private sector a chance to *participate* (with appropriate safeguards), national economic problems have had less of an effect and there has been an improvement in service. In Mexico City, for example, a firm set up by a group of twenty-six companies has won a ten-year agreement from the government to buy wastewater and purify it for industrial reuse. It is able to sell the treated water at 75 percent of the tariff charged by the government and still make a profit.

Water and sanitation are also affected by competition from other sectors for available funds. In a tight budgetary situation, other sectors are often developed at the expense of water supply and sanitation. A recent example of this is Boston, Massachusetts, where infrastructure is breaking down because of lack of maintenance over a long period. Low tariffs, combined with the fact that most water supply and sanitation infrastructure is out of the public eye and therefore not a political spending priority, starved the metropolitan sewerage agency of funds.

## A TWO-WAY PROCESS

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Not only do the political and economic environments affect water and sanitation; they in turn are also affected by what happens in the sector

First, there is the obvious result that communities whose health and quality of life are improved feel satisfied with the government. This is so even when water and sanitation services are provided with private sector participation, as long as the government ensures that the interests of the users are protected.

...no girl wants to get married into that village,  
because the closest source of drinking water is ten  
kilometres away.

Mr. Kamal Nath, Minister for Environment and Forests, India.

There are also other effects. Community participation creates political maturity, which strengthens democracy in the country. There is a stimulus towards gender equality as more women are involved in decision-making and management, disproving the stereotyped myths about them. Communities become more cohesive without necessarily remaining tied to an ethnic identity. Exchange of experiences with other communities can be highly effective in building up a sense of common purpose and thus, of national identity.

Access to safe water and sanitation in peri-urban and rural areas is frequently the starting point for the economic development of a community and a powerful aid to combating poverty. In rural areas, women can save as much as five hours a day by not having to carry water – time which can be better spent on other activities, such as their own education (including health education), or growing vegetables for family consumption and for sale



Photo: M. Barakat

Better health creates the possibility of increasing incomes, and higher incomes make it possible for users to pay tariffs that cover water supply and sanitation costs. In one rice-growing area of Nigeria, with a population of 1.6 million, an estimated US\$20 million in benefits could be generated from increased rice production and sales if Guinea worm disease were eradicated. This could be done through the supply of safe water combined with an information, education and communication campaign. If this additional income were invested in low-cost technology, the whole population could be provided with water within four years

## THE ACHIEVEMENTS

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Much has been achieved in water and sanitation since the 1977 Mar del Plata Conference. The experience gained during the Decade has led to a better understanding of the complexities surrounding improved access to drinking water and sanitation facilities, which are now recognized to be an integral part of the overall water resources environment

Low-cost technologies for drinking water have been developed and disseminated in the developing world – though not always successfully. Many of these developments were initiated in the search for solutions that would work at the local level. In the sanitation field too, there has been significant technological progress. Though some gaps remain, advances have been made in latrine design, wastewater treatment, recycling and secondary uses, such as aquaculture.

The need to give priority to providing safe water and sanitation to the poor has been made a global issue. The objectives of improving human health and wellbeing, as well as social and economic conditions, have become much clearer. So have the links with health, nutrition, food security and the environment. There is more acceptance now of the need for access to safe water and sanitation to go hand in hand with hygiene education, information and communication strategies, training, and community participation in decision-making, management and maintenance – ensuring that men and women are given equal opportunities in this respect. NGOs are playing an ever more important role in helping to develop effective partnerships at the community level, and local consultants are increasingly used for planning, programme design, project supervision, monitoring and evaluation. This is a useful form of capacity building

It is now recognized that governments have to develop policies for allocating water to competing users, realizing that it is a scarce resource and that using it efficiently can produce substantial savings. A start has been made in using pricing mechanisms for this purpose as well as for recovering the costs incurred in providing and sustaining water and sanitation services

From the detailed analyses that have taken place of Decade experiences, sector specialists have identified three key areas where fundamental changes of approach could build on these achievements and bring real prospects of accelerated and sustainable progress.

- improving the effectiveness of sector investments
- maximizing the mobilization and use of financial resources
- increasing the extent of collaboration at all levels.

These issues are addressed in more detail in the third booklet in this series, *No More Business as Usual*. Here we focus on the progress made in the late years of the Decade and the immediate post-Decade period.

Several recommendations of the freshwater chapter of Agenda 21 have important implications for improving the effectiveness of the sector. They are concerned with:

- a comprehensive policy framework for the integrated development of water resources and environmental sanitation
- water resources assessments
- decentralization
- institutional development, including human resources development
- use of pricing mechanisms and other incentives to conserve water and allocate it among competing users
- community participation, including the full participation of women.

### **A framework for policy**

Most developing and newly reforming countries do not have a comprehensive policy framework of the type envisaged. Many industrialized countries do, but the degree of comprehensiveness varies from country to country, depending on how concerned the public is about environmental issues and what opportunities it has to lobby for them.

### **STRATEGY IN PAKISTAN**

*In Pakistan, which at one time seemed to be self-sufficient in water resources, population growth, the expansion of irrigated agriculture and the pace of urbanization and industrialization are creating increasing demand for drinking water supply and sanitation. The Government of Pakistan has prepared a National Conservation Strategy with emphasis on resource conservation, pollution prevention and sustainable development. A Federal Environmental Protection Law has been enforced under which a system of Federal and Provincial Environmental Protection Agencies has been created.*

To ensure maximum effectiveness, political will has to be translated into the mobilization of all, or most, of the stakeholders in the sector. National governments have to work out comprehensive strategies which include capacity building (institution building, education and training, community involvement, and so on) and decentralized operation. Such strategies provide the frameworks for detailed project planning at lower levels.

During the first half of the Decade, most governments and ESAs concentrated on cheapness and speed in planning and implementing water and sanitation local projects. To achieve this, they often bypassed local administrative structures, setting up their own project committees. Such projects were completed with very little local participation. The result was that they were handed over to local staff who had not been trained to maintain them and who did not have the resources to do so. Not surprisingly, projects of this kind were not well-maintained and soon ceased to function. Later, there was some improvement in this situation as the need for human resources development – including training – and the value of participation at the community level became apparent. However, in some countries the desire for a 'quick fix' continues, fuelled by rivalry between ESAs and abetted by governments.

Comprehensive and regularly updated data on the quantity and quality of water resources are vital for managing national resources effectively. Yet monitoring systems, and the hydrological services that operate them, do not receive enough financial support. The situation is especially severe in Africa, where many governments have cut funding just at a time when information on water resources is most needed, to help meet the escalating demand for more water.

#### **Assessing water resources**

In the late 1970s and early 1980s, countries did respond to the Mar del Plata call for more comprehensive information on water resources, but this trend was later reversed because of worsening economic conditions, especially in Africa. Lack of trained staff has also been a major constraint. Asia and the Pacific and Latin America and the Caribbean have made good progress in this field, although in the latter region data collection is usually carried out on a project-specific basis and little attempt is made to integrate it into a resources management system. In the newly reforming countries, only rudimentary monitoring systems are in place. The industrialized countries are the most advanced in this respect, but even there, calls for better assessment of groundwater resources, especially with regard to contamination by pollutants, indicate that more work is necessary.

We are less able now, globally, to assess water resources than we were 15 years ago.

Professor G.O.P. Obasi, Secretary General, World Meteorological Organization.

#### **Decentralizing responsibilities**

The process of decentralization has begun in the developing countries, with municipalities in some countries being allowed greater autonomy in making decisions, and with the involvement of the private sector in some operations. But this is only a beginning. In the newly reforming countries, few resources are available for sector development and decision-making still tends to be centralized. In most industrialized countries, there is decentralization to the municipal level and a trend towards privatization



### **Developing institutions**

Institutional development aimed at strengthening water and sanitation management at the lowest appropriate levels has yet to be carried out in most developing and newly reforming countries. Human resources development has generally been constrained by the economic situation. Salaries in the sector are generally not competitive and promotions are not always based on merit, resulting in a loss of personnel to the private sector.

### **Mechanisms for pricing**

Some developing countries have started using the pricing mechanism to change water use patterns and improve cost recovery, but in most countries the tariff structure is subsidized and benefits the urban middle classes. A recent review of World Bank-financed projects shows that the effective price charged for water is only about 35 percent of the average cost of supplying it. In the newly reforming countries, utilities are realizing that subsidies will have to be phased out: representatives of five Baltic countries participating in a recent World Bank workshop on utility reform were unanimous in accepting realistic pricing as a long-term objective.

### **Participation by communities**

Community participation is making significant inroads in the developing world. Women's participation has gone up: forty-two countries are implementing programmes specifically designed to increase the involvement of women in the development of programmes. In some countries, community participation has developed from the stage of providing voluntary labour for construction or preventive maintenance in otherwise agency-managed systems, to that of having more influence on local design and more power in local management.

## **ACHIEVEMENTS IN MAKING THE MOST OF FINANCIAL RESOURCES**

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Lack of money is a prime constraint on sector progress in most developing countries. Poor operation and maintenance is always a sign of inadequate cost recovery and lack of financial autonomy in water utilities. Post-Decade evaluations have paid a lot of attention to the question of how to obtain additional finance, particularly from users and the private sector. It is clear that the poorest members of the community are paying higher prices for inadequate water supplies from water vendors than their richer neighbours pay for public supplies.

...programmes must be based on what men and women in rural and peri-urban communities know, want and are able to manage, maintain and pay for.

Mr. H. Scheltema, Chairman of the Board, IRC International Water and Sanitation Centre.

Willingness-to-pay studies confirm that people will pay significant amounts if the services provided are reliable and meet their expectations. This has led to the emergence of the concept of 'effective demand', as a planning tool.

Although the case for user payment is strong, adopting community financing as a universal policy in the short term may prove to be extremely difficult. However, there is still scope for mobilizing community resources to a greater extent than is being done at present.

In 1987 a global consultation on progress during the Water and Sanitation Decade concluded that cost recovery in the sector 'is generally ineffective'. A year later, UNICEF reported that an average of 30 percent of its assistance to water and sanitation programmes was devoted to meeting recurrent costs, and would probably continue to be so 'well into the future in many countries'.

Prospects for cost recovery are particularly difficult in rural sub-Saharan Africa, where poverty is most acute. However, it has been shown to be feasible even in that unfavourable economic climate. In Burkina Faso, for example, the National Water and Sanitation Office has been recovering costs by collecting tariffs at communal standposts. The tariff is fixed at that for a private connection using less than 10 cubic metres per month, which is below what water vendors charge. A reduced tariff also exists for systems using boreholes, pumps and independent reservoirs.

Cost recovery has been carried out with varying degrees of success in several Asian cities. Many major water utilities in the Asian and the Pacific region are able to collect enough revenue from tariffs to cover operation and maintenance costs. Seoul, Bangkok, Singapore and Taipei have eliminated grant financing of capital investment for water supplies. In rural Thailand, revolving funds handled at the village level have been used for cost recovery.

### **COST RECOVERY IN TANZANIA**

*In Tanzania, up to 35 percent of rural water supply projects are not delivering the intended services due to lack of maintenance and rehabilitation. The lack of funds for operation and maintenance is due in part to the fact that water tariffs were not designed to meet running costs. Policy emphasis now is on community-based management of water schemes, with provision for cost sharing between government and consumers in order to reflect real needs and achieve sustainability. Consideration is also being given to the role of the private sector in water supply and sanitation programmes and the need to employ least-cost technologies.*

The private sector is becoming increasingly involved in water and sanitation. Private sector companies manufacture and repair equipment and components used in the sector. They also commonly carry out construction contracts. In several developing countries, the private sector has been given contracts to manage some sector operations such as meter reading and billing (Santiago, Chile), water supply delivery (Buenos Aires, principal cities in Guinea, all urban areas in Côte d'Ivoire) and wastewater treatment (Mexico City, southern Turkey). In Thailand, water resources management in the Eastern Seaboard is to be privatized, with the new

company listed on the stock exchange. In the industrialized countries, there is an increasing trend towards privatization

Recent meetings and sector literature advocate more participation by the private sector in both the installation and the management of water and sanitation services. While there has been some modest degree of success in this respect in some developing countries, there has been no analysis of the dynamics of the private sector in developing countries, and little is known of the long-term effects of letting the private sector manage water and sanitation on a large scale.

## ACHIEVEMENTS IN INCREASING COLLABORATION

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One of the factors contributing to the failure of projects during the first half of the Water and Sanitation Decade was a lack of effective collaboration at all levels. The early 1980s provided numerous examples of countries in which as many as ten different donor agencies supported different water programmes, each installing different pumps, pipes and other equipment, all of which required (though they were not always able to obtain) separate provision for spare parts and the training of mechanics. Experiences such as these gave rise to policy reviews which resulted in improvements in the second half of the Decade. However, rivalry between ESAs (and governments) still sometimes fuels the 'quick fix' mentality and leads to duplication of effort. This is particularly evident in the newly reforming countries, where the activities of ESAs would seem to indicate that the lessons of the Water and Sanitation Decade have not been fully absorbed.

On the whole, developing country governments have failed to coordinate the activities of ESAs at the country level. Collaboration among the ministries or other agencies responsible for various aspects of the sector has also left much to be desired. Resources have not been used as efficiently as they could have been, inappropriate technology has sometimes been installed simply because an ESA was prepared to finance the capital costs, and projects have not been maintained after completion

. . . cooperation between governments, organizations and communities is the only way to achieve significant progress in water supply and sanitation.

Dr. Wilfried Kreisel, Executive Director, WHO.

The late 1980s saw a much-enhanced degree of cooperation among donor agencies, including the formation in 1988 of the ESA Collaborative Council. Transformed in 1991 into the Water Supply and Sanitation Collaborative Council, this organization now provides a forum for all sector professionals from developing country agencies, ESAs, NGOs and international information and research institutions to share views and experiences. Through its Working Groups the Council has initiated

several indepth studies into key issues in the sector, including. country-level collaboration; serving the urban poor, operation and maintenance, applied research; information management; information, education and communication; gender issues; promotion of sanitation; institutional management options (including water demand management and conservation); and water pollution control. Proposals for better collaboration at the country level will play an important part in sector development in the 1990s and beyond. Through special initiatives the Council is also supporting: the development of human resources and management of information in the five Portuguese-speaking countries of Africa; the dissemination of guidelines on managing water resources to meet megacity needs in Asia; promotion of a project in the small island nations of the Pacific to meet their specific needs in the water supply and sanitation sector; and involvement of the newly independent states of Central and Eastern Europe in the activities of the Council.

In response to the recommendations of the Mar del Plata Conference with regard to improving collaboration between United Nations agencies, an Interagency Steering Committee for Cooperative Action for the International Drinking Water Supply and Sanitation Decade was established in 1978. In 1991, following the end of the Decade, the committee adopted new terms of reference and changed its name to 'United Nations Interagency Steering Committee for Water Supply and Sanitation'. The Committee maintains close links with the Collaborative Council, and the two bodies have several members in common.



Photo: M. Boesveld

In spite of the progress made globally since Mar del Plata, the problems are still vast. The first challenge is a political one: to accept that turning the Rio rhetoric into effective action requires changes in the role of government, accompanied by measures to strengthen the capabilities of decentralized agencies and communities to deliver services which meet the realistic aspirations of the users

With political backing, sector professionals have enough knowledge of the technologies and approaches needed to make rapid inroads into the backlog of inadequate and malfunctioning water and sanitation services and to tackle the escalating problems of water scarcity and environmental degradation. Without that backing, they are condemned to working on the

margins, delivering often inappropriate services at unaffordable cost, and failing to address the shameful plight of the poorest sections of the world community. There is an increasing awareness that, to obtain this backing, advocacy for water and sanitation as an essential component of development needs to be rooted in the communities, and established at all levels.

These, then, are the areas where the main challenges lie for the remainder of this century and the beginning of the next: partnership; water management; capacity-building, and finance

## CHALLENGES IN PARTNERSHIP

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### Changing the role of government

There would be a lot of gains in efficiency if governments were to concentrate on facilitating the provision of water and sanitation by others, instead of providing the services themselves. In this role, they would be responsible for such tasks as drawing up the national plan for the sector, drafting and enacting legislation to ensure the smooth running of the sector and protect the interests of users; creating and defining the responsibilities of institutions; helping to obtain finance from domestic sources and internationally; and coordinating national activities relating to the sector. Day-to-day planning and management of the sector would then take place at levels closer to the user (for example, at the municipal level), with safeguards to ensure accountability for finance and quality and level of service

### CHANGING THE ROLE OF GOVERNMENT IN BHUTAN

*Decentralization of the water supply and sanitation programme in Bhutan has brought significant changes in responsibilities, attitudes, management and patterns of use of drinking water supply and sanitation among the beneficiaries. Phasing out of the government's role as a provider of services was difficult at first, but now beneficiaries are mainly responsible for need and resource management, construction and maintenance of water supply and sanitation programmes in rural areas. In the urban areas, uncontrolled solid and liquid waste disposal has resulted in environmental and river pollution and health hazards. The government is now creating a regulatory framework for waste disposal and streamlining disposal practices.*

### Improving collaboration

Efficient partnership and collaboration at the country level are vital to the widening of water and sanitation coverage. Governments need to ensure that the strengths of all stakeholders, from ESAs to village-level communities, are used optimally to develop the sector in an integrated way. If governments are to be able to change their role from that of suppliers of services to facilitators, the necessary conditions have to be created. For their part, ESAs need to transcend narrow nationalistic considerations and cooperate with each other and with the governments of the countries they are helping in order to avoid duplication and to use resources more efficiently.

### **Involving the private sector**

Most countries have a private sector which is capable of manufacturing simple technology and spare parts, and in some, this is already happening. The private sector is also beginning to get involved in construction projects and operation and maintenance. In both these areas, the role of governments is to set quality standards and enforce them. It is more difficult to decide if, and to what extent, the private sector should actually manage water and sanitation services. In the developing countries, this has taken place on a relatively limited scale; however, some industrialized countries have large-scale and generally successful experience in this respect. There is a need for independent evaluation of this kind of activity to obtain a better understanding of its implications. The experience of countries like Côte d'Ivoire with incremental private sector management could have lessons – both positive and negative – both for other developing countries and for the newly reforming countries.

The private sector could also become more involved in research, planning, design and evaluation of projects as well as in financing.

### **Better communication**

To bring these new approaches about, changes in behaviour and approach are needed at all levels so that communities are enabled to take charge of their own lives. The way to achieve this is through effective communication. Communication, more than any other factor, is the key to successful behaviour change at all levels. To be successful communication requires information, understanding and technique.

Communication is most effective at the interpersonal level, where there is a two-way dialogue. The creative use of mass media can supplement this process, but cannot replace it. Sector professionals need to be trained in communication skills and techniques if sustainable development is to be achieved.

## **CHALLENGES IN WATER MANAGEMENT**

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### **Planning for integrated development**

Governments need to produce both long-term and short-term plans and strategies for the integrated development of water and sanitation, based on feasible targets that take into account the financial and other resources available. Targets should include performance criteria in addition to physical infrastructure. Rolling targets ensure flexibility. Water resources need to be assessed and monitored, keeping in mind possible changes due to environmental degradation and climatic change. Effective planning has to be based on reliable data, and governments need to organize the collection and analysis of data better.

### **Balancing investments**

A much-repeated principle of the 1980s was that improved sanitation needs to accompany improved water supplies if the full health and environmental benefits are to be obtained. The principle was not, however, reflected in investment patterns. Governments and donors continue to focus on high-profile water supply projects, while people's health and the environment suffer from inadequate sanitation.

## Lack of sanitation is a fundamental denial of human dignity.

Mr. Olof Johansson, Minister for Environment and Natural Resources, Sweden.

New activities to promote greater investment in sanitation are being initiated by the Water Supply and Sanitation Collaborative Council, and there is a clear need for governments to lead from the top with advocacy campaigns and budgetary support to stimulate demand for improved sanitation.

The primary objective of investment in improved water supply and sanitation has always been seen as the protection of human health and wellbeing. The shameful toll of death and debilitating disease caused by inadequate access to these basic human needs ensures that health improvements must remain a paramount goal. What Rio has done is to bring worldwide recognition that more rapid progress in improving water supply and sanitation is also a prerequisite for sustainable economic and human development, and for the protection of aquatic ecosystems.

Health, economic and environmental goals are mutually supportive. They combine to make a powerful case for investments beyond the traditional health and social services budgets. After Rio, water supply and sanitation investments need to be seen as an integral part of national economic planning and strategies for protecting the environment.

It follows that planning for the water and sanitation sector needs to be integrated with planning for other sectors and to involve multi-benefit analyses. Health benefits have proved difficult to quantify in economic terms, but achieving them must remain a priority. That means that planners need to recognize the importance of sanitation and hygiene education in achieving health goals, and to include these components in all water supply programmes.

### **Dealing with water scarcity**

By the end of the 1990s, many countries will have only about half as much easily accessible water as they had in 1975. On a global level, groundwater is being used up faster than it is being recharged, while pollution from untreated municipal and industrial wastes is turning precious surface water resources into offensive, health-threatening nuisances. At the same time, demand from agriculture, industry and domestic users is rising. The costs of providing new water supplies are also rising exponentially, yet measures to protect, conserve and reuse water could enable demands to be met much more economically.

Economic development is increasingly being conditioned by the scarcity of fresh water. Clearly, action is vital. Priorities have to be established which balance desires for food security, health improvement, social development, environmental protection, and economic growth with the availability and long-term sustainability of water resources. A reversal of the present practices of over-abstraction and pollution, so as to conserve and protect all available water resources, has to be part of integrated development strategies.



## **LACK OF WATER IN JORDAN**

*In Jordan, it is very difficult to supply water to the population as and when needed, due to a general lack of water resources in the country. Jordan is a mainly arid country with very few aquifers and very little groundwater. Because of this, extremely deep wells have to be drilled, which has adverse effects, not only on the environment, but also on the quality of the water itself. Despite these problems, the country is able to supply 80 percent of the population with drinking water (though at a much lower rate than in many other countries) and 20 percent with sanitation. Steps have been taken to mobilize all organizations in the country which have anything to do with water and water supply, and to raise the awareness of citizens as to how important and how precious a resource water is.*

Governments need to develop guidelines and protocols for the protection of surface water and groundwater resources and to enact and enforce legislation on this. The lack of integrated planning in many countries is causing ecological damage affecting water supplies. It is necessary to map out the ecologically sensitive areas of individual countries and ensure that activities harmful to them are prevented.

There is considerable scope for using water more efficiently. Better irrigation methods and reduction of losses in agriculture could free considerable amounts of water for other uses. In urban areas, better operation and maintenance would reduce the amount of unaccounted-for water, which in many cities in developing countries is more than 50 percent. There is also room for industrial and domestic consumers to save water by using it more carefully. There is a general tendency for users to regard water as an unlimited resource as long as it comes out of the tap whenever they want it. This perception has to change.

Measures also need to be taken to increase sustainable water supplies where possible. In countries where seasonal flooding occurs, flood water can be trapped for the recharging of aquifers. The treatment and reuse of wastewater in agriculture and industry is another way in which supplies are being, and can increasingly continue to be, augmented. Large cities produce prodigious quantities of wastewater which, if reused, would make a big difference to water supplies. Care needs to be taken, however, to treat the water so that it does not pose a danger to human health and groundwater supplies. Some countries are encouraging rainwater harvesting and others need to do so. If the costs of desalination were reduced, sea water and brackish water could be processed more extensively.

### **Dealing with urban issues**

By 2025, 60 percent of the world's population will be living in cities. By 2000, eighteen of the twenty-two metropolises of more than 10 million people will be in developing countries.

The rise of these megacities is already creating difficulties. Rural-urban migration is swelling the populations of marginal peri-urban areas. Neither starving them of services nor razing them to the ground has



Photo: IIC

prevented their expansion. Peri-urban areas do not exist in a vacuum, and their neglect can have wide-ranging consequences. Outbreaks of disease there can easily spread to 'official' urban areas. On the other hand, residents of peri-urban areas often engage in economic activities that contribute to the local economy. Governments need to give priority to extending water and sanitation coverage to these areas without waiting for their civic status to be legalized.

As urban areas expand, the allocation of water has to become more equitable. There is no 'trickle-down effect' from rich to poor in water and sanitation, and realistic pricing is needed. The current system, whereby middle class areas get cheap supplies while poor ones have to pay much higher prices to buy from vendors, has to change. Demand needs to be managed through mechanisms such as increasing block tariffs under which a basic minimum is provided cheaply and higher consumption charged at increasingly steeper rates.

#### **COMMUNITY INVOLVEMENT IN NAMIBIA**

*In Namibia, communities in the densely populated northern regions are actively involved in rural water supply schemes, digging trenches and constructing pipelines to establish water points at isolated villages. Through being involved in the planning and construction of these schemes, people have realized the importance of setting up water committees to facilitate the operation and maintenance of their systems. This in turn has led to the adoption of behavioural changes leading to better hygiene practices, to a willingness to pay for the water supplied, and to an understanding of the need to protect the water supply infrastructure which has been established. The Water Supply and Sanitation Sector Policy approved by the Government in 1993 is seen as the cornerstone of future development in the sector.*

The problem of liquid and solid waste disposal needs to be tackled both at the production end, where the amount of waste being produced could be substantially reduced through a combination of incentives and information and education campaigns, and at the disposal end. A sewerage system designed for countries with regular and abundant supplies of water cannot deal with rapid urbanization in countries experiencing water shortages. Consideration needs to be given to the extent to which 'dry' systems can be used to supplement conventional sewerage. While there have been many innovations to facilitate the supply of water in developing countries, wastewater disposal has stagnated. More research and development is needed urgently. The treatment and disposal of sewage needs attention; many developing country cities lack proper facilities for these. The disposal of increasing quantities of solid waste also calls for action.

#### **Allocating water among competing users**

The scarcity and rising marginal price of water make it essential to allocate it as efficiently as possible. Governments need to assess the current and future needs of competing users – agriculture, industry, and domestic consumers – and decide on an allocation policy based on pricing mechanisms which reflect the most valuable use of a restricted resource. The specific needs of women, particularly at the domestic level, should be considered in allocation policies. Pricing policies have been found effective in reallocating water from subsidized users to others. The challenge is to achieve this without merely passing on tariff increases to consumers of agricultural or industrial products, and without reducing production.

#### **Controlling pollution**

Surface water and groundwater resources are being contaminated in several ways. In agriculture, runoff from farms contains chemicals originating from fertilizers, pesticides and herbicides. Industries are also dumping chemical waste into water bodies, not only in the developing and newly reforming countries, but also in industrialized ones where anti-pollution legislation is not strictly enforced. Domestic wastewater is adding to pollution with its rising content of phosphates and nitrogenous compounds which lead to the depletion of oxygen in water sources. Air pollution is affecting the hydrological cycle and water quality through acid rain.

Countries that already have anti-pollution legislation need to enforce it more strictly. Those that do not, need to enact and enforce it. Sources of pollution need to be identified and the principle of 'the polluter pays' applied more rigorously, even to agricultural producers. Phosphates and nitrogenous compounds in detergents need to be phased out as soon as possible. Water bodies that have been polluted need to be rehabilitated.

#### **Sharing water resources**

The area of shared water resources is one in which progress is essential. About 60 percent of the surface area of Africa and 65 percent of the drainage area of Asian rivers consists of shared river and lake basins.

In Western Asia, 95 percent of the average annual river discharge is from basins shared by two or more countries. In South America, international basins account for 75 percent of the total flow.

### **SHARING WATER RESOURCES IN EUROPE**

*Valuable experience in international cooperation has been gained in recent years by countries along the river Rhine (France, Germany, Luxembourg, The Netherlands and Switzerland), working within the framework of the International Commission for the Protection of the Rhine. The Commission was established to deal with the severe deterioration in the Rhine water quality after World War II, and initiated an Action Programme which aims at a clear improvement of the water quality and the ecosystem through reducing pollution from industries, agriculture and other sources, reducing the risk of accidental spills by increasing the security of industrial plants, and improving ecological conditions for flora and fauna. A similar Commission for the Protection of the River Elbe was set up in 1990, and negotiations for the establishment of commissions for the Odra and the Danube have been concluded.*

The development and conservation of the resources of international basins has been uneven, partly due to a shortage of financial, human and technological resources. Riparian countries commonly engage in unilateral river development, sowing the seeds of conflict.

## **CHALLENGES OF CAPACITY-BUILDING**

### **Capacity-building for change**

Two prime objectives will be at the heart of capacity-building initiatives: the need to manage water resources holistically, so as to combat scarcity and ensure sustainable use; and the need to implement and manage water and sanitation programmes in full partnership between all stakeholders, so as to achieve effective services and financial sustainability. A balance has to be struck between the need for central government to have a key role in conserving water resources, preventing pollution and assessing and allocating national resources, and the parallel need to decentralize planning and management to properly supported local institutions.

### **Developing institutions**

It is necessary to create institutions able to manage the sector at the lowest appropriate levels, backed by a suitable support structure. Such institutions, whether public or private, should have clearly defined responsibilities, a sound legal basis and autonomous control of finances and human resources. They should be held fully accountable by law for quality and level of service and, where appropriate, be run on a commercial basis. Safeguards should be built in to protect the interests of users against unnecessary tariff increases, and so on. Their performance should be monitored on a regular basis. The human and other resources of existing institutions could be transferred to the new ones.

An investment in people's participation is an investment in bringing about a future for water and a hope for survival.

Mr. Abonyai Kiogora, Kenya, representing the NGO community.

### **Participation by the community**

Real participation by communities in projects is still rare. Communities need to be involved from the beginning in all phases of a project. They need to be presented with a 'menu' of options to solve their particular problem, with the costs and consequences of each made clear. They should be the ones who decide which of the options to accept. They need to be trained to operate and maintain the technology that is decided on. Experience shows that, without this sort of involvement, the sustainability of projects is at risk. The experience gained by some NGOs in using such an approach provides a resource that could be used in training.



Photo: C. van Wijk

### **Dealing with gender issues**

Inadequate participation by women is a matter of serious concern. A lesson from the 1980s is that, when they are able to influence the choice of technology, methods of management, financial arrangements and so on, women contribute greatly to the reliability of water projects, the development of sanitation, and the effective use of the facilities.

More women are being involved in projects, but their role in decision-making is often still restricted. More needs to be done to increase the participation of women at all levels. For that to happen, decision-makers – both men and women – need to be sensitized to gender issues. Through advocacy, training and recruitment policies, the aim should be to ensure that women are equipped and enabled to fulfil management roles, and that men too recognize the need for gender-sensitive approaches to project planning and implementation.

**Women strongly influence the success of any community based water and sanitation systems.** Mr. A. Ligale, Assistant Minister for Land Reclamation, Regional and Water Development, Kenya.

A number of techniques and approaches have been developed for fostering the involvement of men, women and young people in water and sanitation programmes, particularly at the community level. There is a danger that the broader sectoral approaches now being introduced to integrate all aspects of water resources management could tend to marginalize women again. Both cross-sectoral integration and cost-recovery principles need to be applied in ways which allow for the full involvement of women. In some countries, quotas are being used as a way of initiating fuller involvement of women at policy level. Setting quotas can help, but should not be seen as goal in itself, rather as a means to the desirable end of raising gender awareness of all staff.

### **Education**

The experience since Mar del Plata has shown that hygiene education is a vital ingredient in the success of water and sanitation programmes. There are many cases of safe water at source being contaminated en route to the consumer because of factors such as unclean vessels and improper storage and use. Also, communities which have traditionally been accustomed to living with sparse water supplies tend to use it sparingly for cleanliness – for example, for hand washing – to the detriment of health. Such practices do not automatically change after supplies have been improved. Hygiene education is also necessary to achieve the full benefits of sanitation projects.

In the developing countries, children and teenagers make up half the population. Hygiene education should therefore start early in the educational system. Water, sanitation and hygiene issues should be made part of both school curricula and adult functional literacy programmes.

NGOs like the Scouts and women's organizations could also be effective channels for hygiene education

### **Developing human resources**

Training is an urgent need in both developing and newly reforming countries. It needs to be provided at country and regional levels and to be geared to the conditions under which trainees will be working. Operation and maintenance and community participation and gender issues should all feature in training courses, which should make more use of existing audio-visual resources.

Governments need to create attractive working conditions to reverse the 'brain drain' to the private sector. This entails improvement in salaries and career development based on efficiency.

### **Providing information**

Reliable, up-to-date and accurate information is vital to the successful development of the sector. It is needed by policy makers and planners, in choosing project and programme approaches, by financial planners, in ensuring the optimum use of funding resources, by trainers, in support of human resources development and community management, by communities, in knowing how best to improve and expand services, and by technicians and project staff in implementing all stages of sector projects and programmes. Water and sanitation agencies at the national level need to formulate official information policies, both for the sector in general and for their own institutions; to promote the formulation of such policies by other sector institutions, to take steps to ensure that all general plans and projects for the sector make provision for developing information management capacities; and to establish organizational structures and mechanisms for information management.

The information needs of countries vary. Some need access to electronic and other databases and journals so that they can learn from the experiences of countries facing the same problems as they do. Others require printed documentation. A case in point are the Lusophone countries in Africa which need materials in Portuguese.

One area of particular concern is the low confidence limits of water and sanitation data in the developing and newly reforming countries. As a result of various regional meetings, there has been some improvement, but there is still a long way to go.

### **Applied research**

The magnitude of the problems facing the sector calls for a lot of high-quality research. Study of this problem by the Water Supply and Sanitation Collaborative Council has shown that the research agenda is generally set in the industrialized countries. Developing countries need to take the lead in all spheres so that their needs are served more effectively.

### **Financing new services**

To achieve 90 percent coverage of water and sanitation by the end of the century, it would be necessary to invest approximately US\$ 28,200 million in new services alone every year. This is more than double the level achieved during the Water and Sanitation Decade, and does not take into account operation and maintenance costs, or the costs of rehabilitating existing facilities.

With increasing constraints on external funds, countries will have to rely more on domestic funds and be much more efficient in how they use them. They need help in mobilizing finance from banks and other sources. The use of low-cost technologies where possible helps to ensure that the available funds can be used to maximum effect. Planning and implementation should respond to the demands of users.

Governments need to provide loan channels for the poor, including women. Land tenure issues need to be resolved so that security is available for loans from commercial banks.

### **Financing the replacement of infrastructure**

The replacement of worn-out infrastructure is a problem in all regions. However, while the industrialized countries can relatively easily mobilize the resources necessary for replacement, most developing and newly reforming countries are already finding it difficult just to maintain existing services. This poses a big challenge to the international community as a whole.



## VERSIONS OF THE FUTURE

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Opening the Noordwijk Conference in March 1994, the Minister of Housing, Spatial Planning and the Environment of The Netherlands, Mr Hans Alders, noted that, while much had been achieved in water and sanitation since the Mar del Plata Conference in 1977, there was still a need to translate the lessons from the past into implementation in the future. He went on:

*“There are two versions of the future. In one, water and sanitation problems are overcome, and sustainable development becomes possible. In the other, they are not tackled. The prospect is conflict, disease and political instability.”*

The decision as to which version of the future should be our goal rests with the politicians. In the words of James Grant, Executive Director of UNICEF,

*“the most critical factor for accelerating progress is political will. Serving the unserved, reaching the unreached is possible and affordable, now what's needed is courage, vision, and leadership to make water and sanitation a national and global priority.”*



Photo: M. Beareid

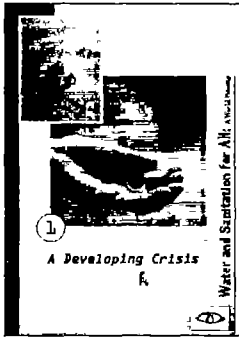




This text was prepared by J. Stephen Parker of the IRC International Water and Sanitation Centre. It is based on Paper no 2, *Achievements and Challenges*, prepared for the Noordwijk Conference Secretariat by IRC and compiled and written by Amir Kassam with supporting inputs from Dr Martin Beyer, the International Steering Committee for the Noordwijk Conference, and a worldwide network of resource persons and institutions. The original paper was edited by Brian Appleton.

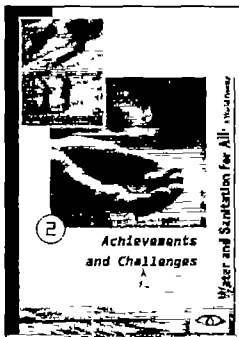
# WATER AND SANITATION FOR ALL: A WORLD PRIORITY

This series is based on the six background papers prepared for the Ministerial Conference on Drinking Water and Environmental Sanitation held in Noordwijk, the Netherlands, in March 1994. The series comprises three illustrated booklets, as follows:



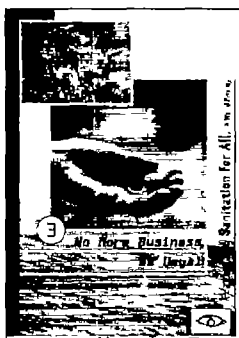
① *A Developing Crisis*

This is based primarily on background paper no. 1, *Putting Agenda 21 to Work*, and seeks to bring home the urgency of the conference's call for action, the validity of the new approaches proposed, and the scale of the potential benefits if prompt and concerted action is taken.



② *Achievements and Challenges*

This is a revised version of background paper no. 2, of the same name. It is a scene-setting paper which reviews progress achieved during the International Drinking Water Supply and Sanitation Decade, summarizes analyses of past successes and failures, and links these to the urgent needs recognised by the 1992 Earth Summit in Rio de Janeiro.



③ *No More Business as Usual*

This is based mainly on the remaining four background papers for the Ministerial Conference, namely: no. 3, *Effectiveness*, no. 4, *Finance*, no. 5, *Collaboration*; and no. 6, *Synthesis*, with additional material from other key documents. The aim of this paper is to encourage governments to implement the changes which are needed to ensure that, in future, there will be 'no more business as usual' in dealing with the problems of the water and sanitation sector. It includes the full texts of the Political Statement and Action Programme approved by Ministerial Conference, a brief account of the 'cascade' process by which the original background papers were prepared, and a complete list of the names and addresses of the conference participants and resource persons.



Ministry of Housing,  
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