



POLICY BRIEF # 7

Water and Sanitation: The Silent Emergency

Sanitation, together with a potable water supply, is considered the most important determinants of public health. Sanitation is the process of separation of human excreta and other waste products from contact with man and the environment through hygienic collection methods and safe management practices. Water quality impacts directly on people's health. Together, these determinants - if substandard - can significantly raise the health risks and hazards to which Egyptians are exposed in their daily life. The erosion of human capital and irreversible degradation of natural resources will have a deterring effect on the achievement of the Millennium Development Goals (MDG) on economic growth and on important economic sectors such as tourism.

The priority of Egypt's Sanitation Authority has, until recently, focused on completing water and sanitation coverage for the populations living in the major urban centers — which make up more than half of the population of Egypt. Little attention has been given to sanitation for the rural populations, although access to potable water has been extended considerably. But at present, the sanitation and wastewater collection and treatment in secondary cities and rural areas lags far behind drinking water supply. The persistent low figures for sanitation coverage in rural areas, which are more pronounced in the governorates of the South, have made raw sewage the most critical source of pollution, especially in the rural areas of the Nile Delta. Poor water quality affects both health and land productivity with damage costs estimated by the World Bank to have reached LE 5.35 billion in 2003 or 1.8% of GDP in 2003.

I. The Multifaceted Challenge

A major part of the EHDR 2005 vision is to guarantee that all rural communities have access to safe methods for human excreta and wastewater collection and disposal/management that are adapted to the local geophysical and hydrological

(underground water table) conditions. A serious problem has been that sanitation assigned low priority, with consequences that are both visible and invisible. These are the discharge of raw sewage into freshwater sources, laws and regulations that are not enforced, and the lack of clarity of mandate and responsibility among various authorities.

1. Most Waterways in Egypt Receive Raw Sewage

The sewage from cities/villages, industrial effluents discharging into the River Nile, the canals or the drains (especially from large industries), the agricultural discharges to the Nile (containing pesticide/fertilizer residues and salts leach out from lands), municipal wastes from village and secondary cities disposed into adjacent waterways, and disposals from inland navigation represent the main sources of pollution of waterways and the causes for degradation of the water quality in Egypt. Twenty percent of urban and 92% of rural sewages are not covered by sewerage.

2. The Law is Infrequently Implemented

Some progress has been achieved since the River Nile was declared a protected zone especially against industrial effluents and a serious campaign was undertaken by the Ministry of the Environment and the Ministry of Water Resources and Irrigation in compliance with Law 48. However, a few industrial complexes are still not in compliance with some of the effluent standards set by the law. But as firms redirect their effluents to public sewers, municipal wastewater treatment plants become overloaded and their efficiency is compromised. Some industries divert their effluents to adjacent agricultural drains, seriously degrading their water quality. Better industrial waste management systems are now being integrated in the design of the production units in new industrial zones.

The relation of the important increase in the various pollutants and in the salinity of the water to the rapidly increasing incidence of renal failure — reported to have increased from 10 cases per million in 1974 to 225 per million in 2004 — is currently under investigation by the Medical Research Division of the National Research Center at the request of the Ministry of Health and Population. An estimated 20% of the overall yearly child mortality for children under the age of 5, especially in rural areas, can be attributed to diarrheal diseases caused by poor sanitation facilities and practices. The gravity of the situation is compounded by the reduced quality of life of the surviving children, many of whom exhibit cognitive impairment.

3. A Lack of Administrative Clarity on Mandates

It is the fragmentation of the responsibility for the different aspects or phases of the sanitation services and process that give rise to ambiguity. The shared tasks between the various bodies are not well defined and there is considerable overlap between more than one of the ministries as, for example, in the area of water quality control and management, although the norms set by the MOHP are applied by all.

In 2004 an autonomous Holding Company for Drinking Water and Sanitation and its affiliated companies was established to include the General Economic Authorities for Drinking Water and Sanitation operating in the governorates. While the Holding Company is under the authority of the MHUNC the latter is not the sole provider of sanitation services on a national scale since it is only concerned with public sewerage systems, and its activities do not cover the provision of stand-alone technologies for individual households in the rural areas.

It is essential that rural communities, whether large or small, develop a clear working relationship with local government and the central Holding Company for Drinking Water and Sanitation and its affiliates. The limitations of the sanitation services of the Holding Company is not well grasped by the rural communities which come under the responsibility of local government. It is expected that the newly formulated Urban Planning Law will help clarify matters. It will completely revise the designations of villages and towns or urban centers in the rural governorates.

II. Problems and Options

Three aspects that together make up 'safe' sanitation, namely the behavioral and the technical figure — in part or in whole — in the mandates of more than one ministry in Egypt, since sanitation does not encompass solely the management of human excreta and wastewater but also covers other wastes, including safe management of hazardous wastes. This means that the success of sanitation improvement programs depends on a comprehensive approach that addresses all three components in parallel.

1. Behavioral Change is Needed

The strong behavioral component to sanitation is not given due consideration. This component makes of the community, families and individuals important partners, contributing to the success or failure of sanitation improvement programs. Furthermore, if sanitation outcome is affected by human behaviour and practices it cannot be included in the group of public goods and services as is the case with water supply and electricity. The World Bank, one of the largest donors for water supply and sanitation, recognizes the need for improved at-scale hygiene promotion to change people's behavior. For example, getting people to wash their hands with soap at the right times was found to reduce diarrheal infection by at least half. Another important behavior change is to eradicate the belief that the feces of young babies and children are not dirty. Raising awareness and engendering sustained political commitment that becomes translated into allocation of resources is a process of attitude change for the politicians and decision makers.

2. Adopting Appropriate Technical Standards

The WHO-UNICEF Joint Monitoring Program (JMP) has since 2002 revised the list of safe sanitation facilities. The proposed list is now made of 5 categories, namely:

- public sewer connected
- small-bore sewer
- connected septic tank
- pour-flush toilet
- VIP latrine

The conditions of safe sanitation are that urban communities and villages benefit from connec-



tion to a public sewage collection network that lies within reach of the perimeter of an existing system serving an urban population. Additionally, the capacity of the system must accept the additional volume of wastewater and sewage produced by the village. For smaller villages, alternative safe sanitation facilities would include small bore sewers, connected septic tanks or VIP latrines.

Getting the Figures Straight: There is considerable variation in the figures reported by different sources for sanitation coverage in Egypt. The national figures that appear in the periodic DHS do not provide enough detail to allow for improvement. Thus, a priority concern is agreement on what is meant by safe sanitation, as stated in the MDG, to become the reference definition for cost-effective targeting. Information needs to be completed at the local level on levels of access and the degree of proper use. A valuable support to achieving this task can be provided by the sanitary technician who is a member of the primary health care team. One of his traditional tasks is the monitoring of the state and efficiency of the sanitation facilities in each household, in particular in rural areas.

Identifying Low-Cost Appropriate Technology: Economies of scale make conventional wastewater collection and treatment cost prohibitive in small rural communities. Alternatives that vary in efficiency and cost have been piloted in Egypt, but not one method or technology can be applied due to the wide variations in the geophysical and hydrological characteristics of the different locations. The most disadvantaged are those governorates located in the Nile Delta where the underground water table is high. This is further complicated by the absence of a desert backing for the governorates situated in the center of the Delta. The GOE, with the assistance of international donors, has invested in a number of pilot operations but no commitment for a campaign or program has been launched on a national scale.

Scaling up of low-cost and unconventional technologies now piloted in rural areas and their replication will produce a cost that is much lower than that of a pilot project. Examples are sanitation projects financed by the Social Development Fund (SDF) and the Organization for the Development of the Egyptian Village (ORDEV-Shorouk Program) as they do not include the cost of expatriate personnel. However, there is,

as yet, no appropriate low-cost technology that can be adopted for use in a national program for achieving the Millennium Target 10, of halving the number of people that have no access to improved sanitation facilities.

Sanitation services are until now heavily subsidized by the government, and the high cost of sewerage systems makes it an expense that is not cost effective for application in rural communities. Innovative sources of financing will need to be considered if the sanitation target is to be achieved for the rural populations outside the urban centers of the governorates — which are covered by the mandate of the Drinking Water and Sanitation Authority of the Holding Company of the Ministry of Housing. For these populations, it is not public sewerage systems but stand-alone or communal technologies that are likely to be applied.

III. Recommendations to Achieve the Ideal Scenario for 2015

An ideal scenario would present what can be realistically achieved in a decade, and would treat areas that are critical to achieving the improved sanitation coverage goal. The focus will necessarily be on the poor since it is this segment of the population that is mostly deprived of sanitation facilities. A critical ingredient for success would be the formulation of a 'National Policy' for the environment within sustainable human development based on a forward looking vision that defines priorities for action in the area of sanitation, with identification of immediate, mid- and long-term action.

The institutional and managerial framework would include (i) a societal/behavioral base; (ii) a technical base; (iii) economic means and instruments; (iv) data generation, R&D, and a monitoring system; (v) mobilization and utilization of financial resources through sustainable options that include the community/users; (vi) evaluation of capital cost and O&M needs to achieve equitable coverage goals by type of sanitation and total capital cost.

Some components of the ideal scenario include the following:

- Proposed policies and strategies as spelt out in the EHDR 2005 are integrated in the national Five Year Plan for Egypt;
- A National Environment Action Plan that is

- updated to strengthen its sanitation content;
- The full integration (both administrative and technical) of water and sanitation services within the restructuring program already underway of the new Holding Company for Drinking Water/Sanitation and its affiliates, representatives and branches at all levels;
- A new 'Master Plan for Sanitation' that is based on demographic projections, plans for urbanization and new settlements, and which harmonizes with plans for establishing new drinking water supply stations and networks to give due attention to the maintenance and repair components.

Under the ideal scenario, the behavior of all actors will conform to best environmental standards and practices:

- Health facilities and clinics will dispose correctly of their healthcare waste, and all hazardous waste;
- The informal productive sector, small production units and small entrepreneurs will adopt and apply mandatory environmentally friendly practices, supported by affordable alternate solutions developed with their participation and that of NGOs;
- Factories will treat their effluents and wastes according to the strict application of the existing legislation, and new incentive schemes;
- Industrial zones will respect environmental norms;
- Health safety measures will be adopted inside the factories and workplace;
- Land utilization permits and tourism development plans will abide by norms that respect the environment, and the natural heritage of the land and the people.

The following recommendations have been developed by EHDR 2005 in order to fulfill Egypt's ideal water and sanitation scenario:

1. Increased Efficiency and Good Governance

A successful scenario would be based on increased efficiency and better governance through:

- Improving performance and better management and cost-effective use of all existing resources;
- Applying lessons learnt from past experience

especially for affordable appropriate technologies;

- Adopting a participatory approach with the involvement of civil society and the various stakeholders;
- Ensure that in restructuring the water and sanitation sector, the roles of all partners are well defined, with a view to decentralizing responsibility to governorate level;
- Supporting decentralization of management through strengthening the roles of the local Environment Affairs Offices and other concerned sectors;
- Providing technical support for each governorate to develop and implement an appropriate and integrated action plan for the environment that addresses the needs and particularities of the local context.

Decentralization, or authority accorded to governors will be instrumental in breaking up the compartmentalization of the sectors involved. An integrated and coordinated approach can be built around shared objectives and agreed priorities developed locally at the governorate level with the participation of all stakeholders. The development of a strong partnership between the health sector and the local environment monitoring units can prove to be mutually beneficial.

A New Era of Integrated Policy and Management for Sanitation: An important milestone has been reached by the formulation of the Integrated Water Resource Management Plan and the National Environment Action Plan which exhibit realistic and objective appreciation of the problems and of the available solutions.

Integrating environmental policies within economic policies under a national sustainable development policy would help guarantee that environmental considerations are taken into account early in the planning process. The policy directions currently being adopted by the Ministry for the Environment and the focus on the local decentralized level, with attention being given to institutional buildup at that level represents an important development that can support initiatives for improved sanitation coverage for rural populations. Integrated resource management must also be implemented on the governorate level as an essential part of the drive towards decentralization. While environmental accounting is now being put into practice, the serious attention accorded by the Ministry to strengthening the mechanisms for penalizing



those guilty of damaging the environment is a first step towards a culture of accountability.

2. Setting Standards and Promoting Information and Participation

Apart from this best practice scenario, the following three sets of actions are deemed to require immediate attention:

(i) Setting and Enforcing Standards: This will require a comprehensive update the sanitation content of all existing norms, regulations, laws and technical instruments covering all types of waste materials. An equally important step would be to identify the most serious environment-damaging practices, and provide the missing technical alternate options/solutions;

Critical and strategic policy changes could support the practice of subjecting all activity permits, programs, projects, and plans, to an 'environment clearance' following an objective analysis of the environmental impact of the activity and the inclusion of remedial measures. The challenge is to apply this approach not only to the formal sector, but to the informal sector that escapes rules and regulations. The trade-offs in favor of developmental priorities have to be carefully investigated for environment remedial action to become an integral condition of policy decisions within overall national plans and priorities.

(ii) Information Base and Decision Support System: The first step here is to develop a data and knowledge base on the existing environmental and health risks and hazards for given geographic localities or related to specific practices, as well as their recommended management — to be shared

by the health and environment local teams. A parallel step is to evaluate past efforts, programs and technologies used for identification of best management practices and systems such as biogas production from waste matter. Throughout this exercise, maximum use should be made of the experience and networks of NGOs and CDAs trained in solid waste and wastewater management and advocacy — in particular for promoting the demand for good sanitation and good hygiene practices;

(iii) Participation, Awareness and Accountability: The purpose of this effort is to facilitate the involvement of communities and the private sector by promoting maximum shar-

ing of information and maximum use of incentives. The key measure is to strengthen ongoing environment education efforts with actual examples of environment damaging practices and behaviors, and reinforce these messages through the schools and the media. A major campaign would target the elimination of the practice of injection of waste into underground water. In order to enhance compliance, a number of measures can be identified to serve as incentives, both for beneficiaries and for private business.

3. Long Term Financial Considerations

According to EHDR 2005, it is the government contributions — alongside the contribution of external funding agencies — that can accelerate implementation of a systemic approach to the sanitation and hygiene problems in Egypt. In addition to the necessary increases in budget allocations from government as well as donor contributions, there are a number of proposed policies to increase the contribution of beneficiaries of the water and sanitation services:

- Investments and cost sharing by all the stakeholders, including the users, can be worked out at the local level by each governorate and will build around funds, investments and contributions that are already programmed;
- Application of cost sharing principles by the users has proved successful in some of the pilot projects and people were found to be ready to contribute with their own resources to building sanitation facilities;
- Micro-credit schemes and credit facilities can facilitate payment of the family's contribution. Targeted subsidies to households with limited resources may be considered for low income families;
- Sanitation related activities in a rural community can generate incomes and create livelihoods. Private enterprise and local contractors can become actively involved under the supervision of the local authorities.

It is important to separate the heavily subsidized municipal water and wastewater services that are directed towards urban populations from the cost of reducing the gap of rural sanitation and realizing Target 10 of the MDGs. The budget for the latter will need to be calculated separately, as the technologies are different, as is their capital investment costs



A full breakdown is needed of estimated cost and budget and expected source of funds for the sanitation requirements up to 2015. This is essential to realistically update the Master Plan for Sanitation for Egypt, and some estimates have already been made by the relevant authorities.

The financial lessons learnt from all of the partners involved in rural sanitation should be shared, possibly in workshops, to review, analyze and benefit from synergies in experiences,

as well as to compare costs and successful cost-efficient measures. There should be discussion of the technical as well as the financial aspects and of the sources of financing of community and stand-alone sanitation collection and management/disposal systems, including safe disposal of waste materials based on field data. This includes local manufacturing of sanitary elements and the level of cost-sharing by the community, civil society and through micro-credit schemes.