



Ministry of Foreign Affairs of the
Netherlands

IOB Evaluation

From infrastructure to sustainable impact: Policy review of the Dutch contribution to drinking water and sanitation (1990-2011)

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Foreword

Safe drinking water and sanitation for the poor has been a policy priority for Netherlands development cooperation for a long time. The current policy is anchored in the specific Millennium Development Goal to halve, between 1990 and 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.

This policy review provides insight into the policy implemented and the effects of this policy on the use of drinking water and sanitation facilities, as well as the consequences for the health and development opportunities of the target group. The report shows that the efforts of the Ministry of Foreign Affairs have been significant but that the information collected regarding increased access to and use of these facilities does not provide a complete picture. There is scope for improving policy management in order to ensure sustainable impact, provided the ministry puts the necessary manpower in place to do so.

The policy review has been conducted by IOB inspector Rita Tesselaar. The review makes use of impact assessments carried out between 2007-2011 in five priority countries in cooperation with the Amsterdam Institute for International Development and researchers from the countries involved. These studies have been published in earlier reports. Roland Rodts, senior evaluator in this policy area, and Jolijn Engelbertink, IOB researcher, contributed to the information collection and analysis for the policy review. IOB inspector Antonie de Kemp commented on the draft documents as co-reader. Henri Jorritsma, Deputy Director of IOB, was responsible for overall supervision of the policy review.

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Acronyms and abbreviations

BMZ	German Federal Ministry for Economic Cooperation and Development
BNWP	Bank-Netherlands Water Partnership
BZ	Ministry of Foreign Affairs
CATS	Community Approach to Total Sanitation
CRS	Creditor Reporting System
DALY	Disability-Adjusted Life Year
DDE	Sustainable Economic Development Department
DEC	Effectiveness and Quality Department
DHV	Dwars, Heederik and Verhey Consultancy and Engineering Services
DGIS	Directorate General for International Cooperation
DME	Environment, Water, Climate and Energy Department
DML	Environment and Development Department
DMH	Human Rights, Good Governance and Humanitarian Aid Department
DSO	Social Development Department
DVF	United Nations and International Financial Institutions Department
E. coli	Escherichia coli
EVD	Economic Information Service
FEZ	Financial and Economic Affairs Department
FTE	Full-time Equivalent
FMO	Entrepreneurial Development Bank
GPOBA	Global Partnership on Output-Based Aid (World Bank)
HBBZ	Ministry of Foreign Affairs Management Handbook
IBTA	Investment Promotion and Technical Assistance for Developing Countries
ICCO	Interchurch Organization for Development Cooperation
ICRC	International Committee of the Red Cross
IDA	International Development Assistance
IEG	Independent Evaluation Group
IFIs	International Financial Institutions
IMF	International Monetary Fund
IOB	Policy and Operations Evaluation Department
IRC	IRC International Water and Sanitation Centre
JMP	Joint Monitoring Programme (WHO/UNICEF)
KfW	Kredietanstalt für Wiederaufbau (German development bank)
MDG	Millennium Development Goal
MFS	Joint Financing System
MJSP	Multi-Year Strategic Plan
n.a.	not available
NGO	non-governmental organization
PHAST	Participatory Hygiene and Sanitation Transformation
PPP	public-private partnership
PSOM	Cooperation programme for Emerging Markets
PUM	Programme Entrepreneurs for Entrepreneurs

PwC	PricewaterhouseCoopers
ORET	Development-Related Export Transactions
ORIO	Facility for Infrastructure Development
RPE	Regulation for Periodic Evaluation and Policy Information
SK	Strategic Selection Plan
SP	silent partnership
STR	sector track record
TMF	Thematic Joint Financing
TR	track record
UN	United Nations
UNICEF	United Nations Children's Fund
UNSGAB	United Nations Secretary General's Advisory Board on Water and Sanitation
WASH	Water, Sanitation and Hygiene
WECF	Women in Europe for a Common Future
WSP	World Bank Water and Sanitation Program
WSS	Water Supply and Sanitation
WSSCC	Water Supply and Sanitation Collaborative Council
WHO	World Health Organization
WUG	Water User Group

Main findings and lessons learned

Introduction

In follow-up to the Dutch government-wide Regulation for Periodic Evaluation and Policy Information (RPE 2006), the IOB evaluated the Ministry of Foreign Affairs' policy that forms the basis of the operational goals for development cooperation: "a higher percentage of the population that has access to safe drinking water and basic sanitation". This policy forms part of the Dutch contribution to the Millennium Development target to halve, in the period from 1990 to 2015, the proportion of the world's population that does not have access to safe drinking water and basic sanitation. The policy review focuses on the period from 1990-2011, whereby the period up to 2004 is described in general terms and the review itself focuses on the period from 2004 onwards. The policy on which the operational goal is based applies to the period from 2004.

Worldwide the access to improved water sources increased from 77% in 1990 to 87% in 2008. While some regions, such as East and Southeast Asia, have exceeded their targets, Sub-Saharan Africa lags behind. Despite a nearly 100% increase in the number of people using an improved water source, the coverage in 2008 was only 60%. The progress with respect to sanitation is significantly slower. The percentage of the world's population that has a suitable toilet increased from 54% in 1990 to 61% in 2008. Nearly half of the population in developing regions does not yet have a suitable toilet. In Sub-Saharan Africa only 24% of the rural population uses a toilet. An estimated 1.1 billion people worldwide still defecate in fields, which poses significant health risks (UN, 2011). This affects mostly poor households in rural areas and in poor urban areas. According to WHO estimations, approximately 10% of the disease burden worldwide and 88% of all diarrheal disease can be prevented by improved drinking water and sanitation, hygiene and improved water management (Prüss-Üstün et al. 2008).¹ In addition to the disease burden, water collection, which is generally a burden borne by women and girls, hinders development. Reducing the disease burden and the burden of water collection, and the development of service provision in this area, serve not only a social, but also an economic purpose.

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The Netherlands has been contributing to drinking water supply and sanitation in developing countries since the 1960s. In the 1990s Dutch policy put a clear emphasis on sustainability. Since 2004 the policy has focused on realizing simple, safe and sustainable drinking water and sanitation facilities for the poor population in developing countries who do not

¹ WHO and UNICEF take care of the UN system for monitoring progress towards the specific targets for drinking water supply and sanitation through the Joint Monitoring Programme (JMP). The definitions for improved drinking water and sanitation that are used in the context of the JMP are as follows:

- Improved water sources: "sources that by nature of their construction or through active intervention, are protected from outside contamination, particularly faecal matter. These include piped water on premises, public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs and rain water collection";
- Improved sanitation facilities: "facilities that ensure hygienic separation of human excreta from human contact. These include: flush or pour-flush to piped sewer system, septic tank, pit latrine; ventilated improved pit (VIP) latrine; pit latrine with slab, composting toilet" (WHO/UNICEF, 2010).

have access. The target for access was 50 million people. In 2012 this figure was set to 25 million for the period from 2010-2015. In addition to reducing the disease burden, it is expected that this will contribute to more equal opportunities for women and girls. Policy accents are integrated development of drinking water supply and sanitation; alignment with the needs of the target group; coordination with national policy and the existing institutional frameworks; and technically, economically/financially and ecologically sustainable services. The geographical focus of the policy is on but not limited to Sub-Saharan Africa (Ministry of Foreign Affairs, 2008). Since 2011 the link with economic efforts and the role of small and medium-sized businesses in the improvement of the sustainability of facilities have been added as policy accents.

The policy review is aimed at describing Dutch policy and analysis of impact and efficiency. The review is primarily based on the following studies:

- study of Dutch policy and its execution;
- impact evaluation of a selection of programs for drinking water and sanitation in five countries. These countries are Benin, Egypt, Yemen, Mozambique and Tanzania.

The impact evaluations have been carried out in countries with which the Netherlands has been cooperating in this area for quite some time. Benin, Egypt, Yemen and Mozambique are among seven countries that until 2011 were priority countries for cooperation in the water sector.² The fifth country, Tanzania, has been receiving assistance in this area from the Netherlands since 1971. The impact evaluations provide a broad picture of the policy effects at the level of the ultimate target group, in rural areas in Sub-Saharan Africa in particular. In addition to the studies mentioned above, earlier IOB evaluations, systematic reviews of impact evaluations and evaluations by third parties in this area - among which a recent World Bank evaluation (IEG, 2010) - have been used.

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The interventions researched in the studies in the various countries show some similarities. These concern primarily simple communal water supplies (wells provided with pumps, small scale water distribution systems). In Yemen and Egypt house connections to water distribution systems were realized. Interventions aimed at sanitation consist mainly of training and education that should stimulate people to build their own toilets or have them built, and to improve hygiene. Programs have also built toilets but these have usually been limited to toilets in institutions such as schools, which are not included in the specific target. The program in Egypt is the only one aimed at house connections to both water distribution and sewerage systems. Most communal water supplies are managed by a users' association. The governments of the partner countries play a central role in program implementation, supported by NGOs. In the case of Benin, municipalities are responsible for the management of water supply. The municipalities outsource the management to the private sector. In Egypt the exploitation of the large drinking water and sewerage systems is in the hands of a subsidiary company that is controlled by a national holding company. The Dutch contribution to the programs evaluated differs. In four of the five countries

² Other countries are Bangladesh, Indonesia and Vietnam. The running Dutch funded projects for drinking water and sanitation in these countries are more recent than the Dutch support to programs in countries selected for the impact study.

bilateral aid is involved. In Mozambique a Netherlands-supported UNICEF program was evaluated. In Egypt, Yemen, Mozambique and Tanzania, government programs were supported on a project basis. The Netherlands contributes to Benin through support to a sector program. In Yemen, Mozambique and Tanzania the support concerned the majority of the costs of the facilities. In the program area in Egypt the assistance comprised mainly long-term technical assistance to the responsible organization and financial assistance for construction of a water purification plant and an innovative wastewater processing plant. In each of these cases the impact of the programs was analyzed, including contributions from the government and from users, and where appropriate from other donors and NGOs.³

The analysis of the efficiency of the policy executed by the Ministry of Foreign Affairs focuses on the costs and benefits of facilities and how the Ministry's policy processes work.

Main findings

1 With Dutch assistance, which has increased significantly since 2004, millions of people have gained access to improved drinking water supply and sanitation.

The Millennium Development Goals have been an important motivating factor for increasing the policy-related efforts and the Dutch contribution to drinking water and sanitation. After a significant decline in the nineties, since 2004 the annual expenditures have nearly quadrupled to nearly EUR 153 million in 2010. Of this the largest proportion was spent bilaterally, followed by the multilateral channel (particularly UNICEF and the World Bank) and the private channel (particularly development-related export transactions followed by non-governmental organizations). The bilateral aid is, next to the seven priority countries, also spent in several other countries. The aid from the multilateral and private channel is also spent in a large number of countries. For each of the channels the expenditures were made predominantly for investments in drinking water supply.

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At an aggregated level the ministry monitors the realization of targets based on internationally accepted definitions (250 users per water point for rural facilities). The ministry estimates the number of people who obtained access between 2004 and 2011 to be 13 million for drinking water supply and 23 million for sanitation. Coverage figures from the beginning of the 50 million target in 2004 are not available for every activity, making precise coverage figures difficult to obtain. The significant Dutch contribution to the number of people who have gained access to a private toilet is mainly attributable to a program run by BRAC, an NGO in Bangladesh supported since 2006. These toilets are largely paid by the users themselves. The partial studies confirm an increase in access to improved drinking water supply, whereby it must be noted that the number of users per water point differs significantly, and that sometimes people received coverage who already had access to improved water sources (especially in Benin). The program in Egypt was not included in the

³ The program in Mozambique was evaluated together with the UNICEF evaluation department and the program in Benin together with the German Federal Ministry for Economic Cooperation and Development (BMZ).

50 million target because the target group involved already had access to services, although these were inadequate.⁴

2 The use of improved water sources has increased substantially but this does not guarantee the safety of the drinking water nor the necessary water consumption.

The impact studies indicate that the use of the improved water sources as primary water source by the target group has increased substantially. In the communities in the sample in Benin, the new water supplies led to an average increase in use by 30% up to 84% of the households over a two-year period. The increase in use of the improved water source in the intervention villages in Yemen was nearly 100%. In the program area in Mozambique the percentage of the population that used an improved water source increased from 16 to 28% over a two-year period. In the program area in Tanzania the percentage of the population that uses an improved water source as primary water source increased from 10 to 43% between 1990 and 2007.

The quality of drinking water at the source and of the quality of stored water was tested as part of the studies. The water tested from the water supplies showed in part of the cases *E. coli* levels that indicate fecal pollution, particularly in the case of communal water supplies.⁵ Pollution of drinking water at the source, during transport to the home and pollution of storage water, for example by dirty containers and because people with unwashed hands touch the water, largely negates the effect of the improved water source on the quality of the drinking water. An experiment with a closed container for water transport and storage in the context of the study in Benin showed a marked reduction of the presence of *E. coli*. In the program areas in Tanzania and Yemen some of the water tests showed a high fluoride content. Excessive fluoride levels can pose a health hazard.

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The JMP criterion for the minimum amount of water to be reliably obtained is 20 liters per person per day. Of this, at least 5 liters should come from a safe water source, for drinking, washing food that is not cooked, and for hygiene such as hand washing. The impact studies show that in all the cases of communal water supplies, a part of the population obtains additional water from unsafe water sources, sometimes also for drinking water. The amount of water collected from improved water sources is generally more than 5 liters per person per day. In some areas the total water consumption is considerably less than the recommended 20 liters per person per day (particularly in Yemen and Mozambique). A fluctuating number

⁴ In the particular case of the densely populated program area in Egypt, interventions were mainly targeted at solutions for the poor water pressure in the water transport and distribution system and improvement of the system of frequently overflowing private storage tanks by the construction of sewerage systems and wastewater processing plants.

⁵ **Escherichia coli** is a Gram-negative rod-shaped bacterium that is commonly found in the lower intestine of warm blooded organisms such as mammals. It is an enteric bacterium that often used as a model for bacteria in general. The bacterium is named after the German microbiologist Theodor Escherich. The presence of *E. coli* (the accepted abbreviation) in water is an indication that the water is polluted by human or animal feces. Not all bacteria are harmful but feces are the most important source of pathogens that can be prevented by improved drinking water and sanitation and better hygiene. The water tests show that in cases of polluted water, the number of bacteria is generally high.

of households in the communities do not use the improved water source at all or only use it during a part of the year. For each area, community and household, there are partly different explanations such as a widespread population; a large number of users, causing long waiting times; a long distance to the improved source; availability of rainwater as an alternative source during the rainy season and reduced water production by some of the wells during the dry season.

3 Effects of training and education on the building of toilets and their use and on hygiene are often limited, although there are some good and promising results. Sanitary facilities are often too expensive for poor households.

Of the programs evaluated by the IOB, a substantial direct impact of training and education on the use of toilets and hygiene was only evident in the UNICEF program in Mozambique. This is the result of the Community Approach to Total Sanitation (CATS), which shocks the population and makes them feel repulsed and ashamed by demonstrating the problem through the use of water and food polluted by fecal matter, combined with rewards and recognition for villages where the fields are free of human feces.⁶ In a few years' time people in over 400 villages used local materials to build their own low-cost toilets. However, often the toilets do not entirely meet the sanitary requirements for preventing human contact with feces. Nevertheless, in these villages the hygiene around the toilets, meaning the absence of feces, has increased, as has the use of soap during hand washing. Whether or not the impact is sustainable will be investigated further in a subsequent study.

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Another Dutch-financed program for which monitoring reports and external evaluations show promising results is the NGO BRAC's WASH program that is being carried out in Bangladesh in rural areas with a population of about 40 million people. The approach for the building and improvement of toilets combines a broad range of activities aimed at awareness, small loans for poorer households, subsidy for the poorest and loans and training for local entrepreneurs. The percentage of the population with an (improved) toilet has increased significantly in a short time. Ease, social status and privacy are important motivators. The quality of the improvements, such as hygienic use and maintenance of toilets, as well as the related sustainability, however, requires more attention (Gordon-Walker et al., 2011).⁷

⁶ The CATS builds on experience that was first gained in Bangladesh with the Community Led Total Sanitation movement. This aims at open defecation free (ODF) communities and as a first step, the use of a safe and sustainable toilet (Movik and Mehta, 2010). A program supported by AusAid, SNV and IRC in five countries in Asia supports local governments to combine CLTS programs with 1) strengthening the local private sector's services for building and improvement of inexpensive, but more safe and sustainable latrines and 2) improvement of own government services in this area, such as education and monitoring.

⁷ Another strategy applied for stimulating the construction of toilets is a strategy directed specifically towards women, for example in Vietnam (Sijbesma et al., 2010).

The impact studies indicate that toilets or sanitary facilities built by programs or others are often perceived by households as being too costly (Benin, Egypt, Yemen, Tanzania). In the program area in Egypt the number of households connected to a sewerage system increased from 3% in 1990 to approximately 21% in 2009, but until now the connections have only been introduced in better-off villages and are largely dependent on subsidies. The World Bank evaluation concludes that the willingness of households to pay for sanitation is overestimated. Poor households often cannot afford sanitation. Many countries are hesitant to lend money for sanitation, particularly when the materials to be purchased are not capital intensive. However, investments in capital-intensive works and particularly technically complex sewerage systems with wastewater purification plants are too expensive for many poor countries. (IEG, 2010: 56-57).

The institutes responsible for building and maintenance of sanitation facilities are often very weak (IEG, 2010: 80). Furthermore, they often do not have the proper capacity to provide complex training and education aimed at behavioral change. The latter is due to the predominantly technical orientation of these institutes. The cooperation between authorities for water and health also remains limited. In the evaluated programs the interventions aimed at behavioral change were usually carried out by NGOs.

| 16 | *4 Improved access to drinking water supply has significantly reduced women's burden and their participation in programs has increased. Girls have more time for school. Impact on income, however, is limited.*

Women, and to a lesser degree girls, generally play a central role in drinking water supply. They are usually the ones who collect the water from the communal sources and are often also the ones who pay for water. The new facilities have greatly reduced distances and waiting times. This has reduced the workload and has saved a lot of time (varying from 15 minutes to as much as an hour per trip). Positive results have also been attained by increasing women's participation in users associations that maintain the water supplies, particularly in Bangladesh, Mozambique and Tanzania. Evaluations carried out by third parties and the IOB studies show that the average percentage of women in water committees in these countries is approximately 50%. In most countries women also play an active role, paid or as volunteers, in implementing program components aimed at sanitation and hygiene.

A small and slowly realized impact of improved water supply on the percentage of girls in schools was only evident in Yemen (4-8% increase in the percentage of girls attending village schools). In addition, 40% of the children in the sample in Benin and one-third of the user committees in the program area in Tanzania reported that some of the time saved is used by girls for studying or attending to school.

Women use time saved in particular for unpaid activities, among which unpaid economic activities such as collecting firewood or working on the land. Fewer women in Egypt reported benefits from time saved than in other countries. In most cases initiatives for income-generating activities are not taken, and the opportunities for doing so are often limited in poor rural areas. Benin was the only country in which a significant number of respondents (35%) reported that women used time saved for income-generating activities. Other research shows

that income-generating activities can increase if a drinking water and sanitation project is combined with a micro-enterprise project for women (Sijbesma et al., 2009).

5 Positive health impacts are with a few exceptions, modest or non-existent.

Optimal health impacts from drinking water supply and sanitation are only realized with a) sufficient water during the entire year at a shorter distance for improved hygiene and b) safe water for consumption and c) broad access to and hygienic use of toilets and d) hand washing with soap or ash. Interventions aimed at these conditions can increase each of the other's health effects. In practice all of these conditions are rarely met. Health impacts are also determined by the seriousness of the problems. In Egypt, for example, the initial situation was reasonably good and the most important interventions reviewed (water quality control, improved water pressure and house connections to a sewerage system) contributed to a modest reduction of 9% in the incidence of diarrheal disease.

Of the programs reviewed, increased use of improved water supply only led to a substantial reduction of 26% in the incidence of diarrheal disease in the program villages in Tanzania. This substantial impact can be partly explained by the severity of the drinking water problem prior to the drinking water interventions, but also because the water supplies managed by water user groups contributed to better hygiene.

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In the program area in Yemen the sample households reported that the incidence of diarrheal disease increased but the number of incidents was lower (13%) for households with a connection to the village level water distribution system. A significantly larger number of households in these villages use a toilet. The toilets are cleaner and the water containers are more modern. No health impact on the population could be shown in Benin. This can be explained by the fact that a number of the sample communities had access to an improved water source prior to the new water supply, by the problem of drinking water pollution at the source and during transport and storage, and because most people did not yet use a toilet. An experiment with a closed clean container for water transport and storage in the context of the study in Benin reduced the percentage of households with a child suffering from vomiting within the last four weeks from 7 to 3%.

The impact studies only show a demonstrable health impact as a result of training and education in the case of the UNICEF Community Approach to Total Sanitation in Mozambique. Three percent of the reduction of diarrheal disease in the program area over a period of approximately two years can be explained by the Community Approach to Total Sanitation. Taking into account the education and training components of other programs studied did not have a demonstrated health impact, this result is remarkable.

The demonstrated health impact is less than indicated by much of the literature in this field (e.g. Fewtrell et al., 2005). This difference can partly be explained by the poor rural circumstances in which most of the programs reviewed were executed. At the same time it cannot be ruled out that the difference could also be ascribed to the possibly isolated nature of some of the studies referred to in the literature (comparable to the experiment with closed clean water containers in Benin).

6 The water supplies have benefitted many poor communities but to a lesser extent the poorest segment. Sanitation has increased mainly in better off villages and households.

In line with policy, poor populations in rural areas have benefitted most from the improved water supplies. Poverty in the program areas is widespread. At the same time it appeared that, particularly in Benin and Yemen, the improved water supply benefitted predominantly larger and relatively better off communities. It is easier for these communities to pay the requested contributions for the costs of the facilities. Furthermore, the community influence on selection of beneficiaries also has a political dimension, whereby some communities benefit from the contacts and capacities of their leaders, and others suffer from a lack of leadership and/or local conflicts.

Most studies show that within the communities that have a water supply, all or almost all households have access to the improved water supply. An exception is the program area in Tanzania. Slightly fewer than half of the water user groups reported that not all households are members and that non-members do not have access. Some of these are households that have recently moved to the area.

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Sanitation coverage in the program areas reviewed has particularly increased in better off villages and households. As mentioned earlier, sewerage systems in the program area in Egypt were introduced in larger and better off villages. The impact analysis of the UNICEF program in Mozambique mainly shows an increase in ownership and use of latrines in households with more than an average increase in wealth. The Dutch-supported NGO BRAC's program is an example of a program with a specific poverty focus at community level. Loans are made available for households that cannot immediately pay for the facilities, and subsidies are available for the poorest households.

7 Capacity of local communities, governments and NGOs for the maintenance of the facilities has increased but continues to be insufficient. The role of the private sector has, up to now, been limited. Partial subsidies continue to be necessary for the time being.

The percentage of functioning communal water supplies has increased over the years and was rather high (between 80 and 90%) at the time of the studies. The functioning of the facilities is explained by the presence of a management association of users (especially in Yemen, Tanzania, Mozambique and to a lesser degree Benin), of well-organized communities and strong leadership (especially in Yemen), the lack of alternative improved sources (Yemen, Mozambique, Tanzania), the relatively new state of many facilities (especially Mozambique), and on the rehabilitation of many broken facilities by the government with donor support (especially Benin and Mozambique).

Water supplies are prone to wear and tear and break down in time. In the sample in Benin this percentage was 20% within five years. In Yemen the situation was better, with 80% of the facilities built still functioning 10 years after the end of Dutch assistance. The breakdown of facilities can be explained by a combination of factors such as poor maintenance, limited availability of technicians for maintenance and/or repairs, poor management and in

some cases conflicts between user groups or within the managing water committee. In Benin it also appeared that in a number of cases the technical quality of new systems was not sufficiently guaranteed.

Institutional factors and the related political factors often play the largest role in determining the sustainability of facilities. The management associations of communal water supplies formed by users are often quite motivated, but not always capable of managing the facilities completely autonomously and solving all the problems that arise. In many cases policies are implemented in a context of responsibilities decentralized to local governments. The impact studies indicate that local governments are generally rather inexperienced and in the middle of their capacity building process. The World Bank evaluation points out that projects only showed positive results in cases in which the available budget and authority of the local governments were consistent with responsibilities (IEG, 2010: xiv). Most local governments do little monitoring of organizations that manage the facilities. In the Benin program rules for exploitation of water supply systems by businesses were often not enforced. Very few mechanisms for accountability towards users/consumers have been developed. Capacity to solve water quality and environment-related problems (like wells drying up and flooding) is also lacking.

In many countries governments depend on local NGOs for policy implementation. NGOs are contracted to promote user participation, awareness raising and training, and facilitating change processes. User participation is mainly aimed at user contributions for financing and managing services. The question can be raised, if an NGO-dependent system in which users manage the services is the best solution in all cases, in view of the dependency on donor funding. Furthermore, this could occur at the expense of improving and strengthening local governments and services that have a mandate for health education and facilitation of local processes. These may not deliver results as quickly, but could be more sustainable in the long term.

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In all the small scale water and sanitation programs reviewed, initiatives have been developed to strengthen the role of the private sector, until now with only limited success. An exception is the role during the construction of facilities. The private sector does not play a significant role in financing services in rural areas. Contracts for construction of facilities are usually given to relatively large companies. The role of the private sector in operation and maintenance of small scale water supply systems often does not get off the ground because the services required are not interesting from a commercial point of view. Exploitation of water supply systems by companies in Benin is far from profitable, especially in isolated and smaller communities and communities that use rainwater during the rainy season, putting maintenance under pressure. The World Bank evaluation also points out the limited role of the private sector in poor rural areas (IEG, 2010: 65).⁸

⁸ A recent World Bank desk study argues that local private operators for rural water supply could offer relief (World Bank, 2010). There are also indications that the development of marketing capacity in small companies for drinking water and sanitation-related products and services as part of their business can contribute to sustainable improvements (Sijbesma et al., 2010).

Clarity as to the roles and responsibilities of the various actors and institutions involved has increased. However, local level efforts with regards to information exchange; coordination; and concrete cooperation between (local) governments, donors, user groups, NGOs and businesses are often limited. The World Bank evaluation emphasizes cooperation between partners because many of the problems cannot be solved by the Bank alone (IEG, 2010, xiv). The program reviewed in Tanzania is, in this respect, a positive example of a *step by step approach* that has contributed to clarity and acceptance of responsibilities by, as well as cooperation among, various stakeholders.

The combination of user contributions and income from the sale of water from communal water supplies is in most cases sufficient to finance minor operation and maintenance. Most user organizations have not been able, however, to obtain enough income and save for major repairs and replacement of expensive parts of the infrastructure.

Financial sustainability of the drinking water supply run by a company in the program area in Egypt is reasonably guaranteed. Income from the delivery of drinking water is sufficient to cover the costs of delivery and system maintenance. This does not hold true for the sewerage systems and wastewater treatment plants constructed. Low tariffs in combination with a fast growing population have put financial sustainability under pressure and contribute to an increasing demand and perhaps, in the future, an untenably high level of water consumption.

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The preservation of user-built toilets and hygiene is especially dependent on the fundamental conviction, affordability and willingness of communities and households to make use and maintenance of toilets and improved hygiene part of their daily lives.

8 The costs of communal water supplies and of privately owned toilets made with local materials are low, but the estimated benefits are often limited.

The Ministry of Foreign Affairs has estimated the average price per person for construction of a drinking water supply to be EUR 25 and for suitable sanitation EUR 20. Reported costs of simple communal water supplies are lower in most programs reviewed. The costs of house connections to a water distribution system are considerably higher. The costs for self-built toilets constructed partially or entirely using local materials are lower than the unit price, while the costs of sanitation facilities that in some cases have been constructed by programs are higher than the unit price.

This does not take into account costs for improved hygiene and increasing costs over time of technical maintenance, repairs and replacement parts, nor costs of capacity building and institutional maintenance of responsible organizations.⁹ Information about these costs for the programs reviewed is not available.

⁹ The IRC International Water and Sanitation Centre has started a project for the development of an approach, the so-called Life-Cycle Costs Approach, for calculating and comparing costs relevant for sustainable facilities (IRC, 2010).

Simple communal drinking water supply and toilets (partially) constructed with local materials have given many people access to these facilities. However, the benefits as a result of reduced incidence of disease and income from time saved are, to the extent that these could be estimated, and with a few exceptions, limited. As mentioned earlier, the health impact is often minimal and time saved is seldom used for income-generating activities. Benefits could be increased in a number of cases by shifting excessive attention to realization of physical infrastructure, to interventions aimed at constructing and improving privately owned toilets and hygiene, improving access for the poorest households and strengthening processes of change.

9 Internal policy processes have been improved but nevertheless still fall short.

The ministry has made a real effort to a greater result orientation, as evidenced by the results reported to Parliament (Ministry of Foreign Affairs, 2005, 2007b, 2009, 2011). Directing and monitoring the execution of the thematic policy by the responsible DME department was, however, hampered by fragmented execution by a large number of budget holders (departments and embassies), in combination with very limited staff capacity. The number of DME policy staff (2.5 FTE) for the policy area has, with the sizeable annual budget increase and the increase in the number of activities since 2004, not been increased. Directing and monitoring was further hampered by a certain tension between the thematic policy and (partially) overlapping policy aimed at sector support and at development-related export transactions. Much of the energy in sector support has gone into the development of new forms of cooperation between donors and the central government in the partner countries. This has strengthened the role of the central government, but participation of other actors has been neglected (IOB, 2008a). This despite central governments being largely dependent on organizations at a lower level and on mutual cooperation and complementarity for drinking water supply and sanitation. Because of the accent on large scale infrastructure (hardware) the facility for development-related export transactions (ORET) and development-related infrastructure development (ORIO), are often not in harmony with the thematic policy that emphasizes an integrated approach to basic sustainable drinking water and sanitation and hygiene improvements for the part of the population that does not have access to services.

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Agreements have been made with implementing agencies about reporting results (outputs) at the level of the ultimate beneficiaries. This forms part of the basis for monitoring progress. The impact studies, however, indicate a lack of information about local factors that undermine or promote service and sustainability of the facilities.¹⁰ Impact evaluations are hampered by the absence of useable baseline data and by the fact that particularly older documents, which can provide insight into results over a longer period, are often difficult to find. Budget holders use missions by external consultants for managing program and project execution. These missions are useful in themselves, but would benefit from more empirical research and improved monitoring and evaluation at the policy target group level.

¹⁰ A notable initiative in this context is the so-called sustainability checks within the framework of the UNICEF program in Mozambique (IOB/UNICEF, 2011). Another initiative is the qualitative information system for monitoring small attainable behavior improvements using observation and behavior scales in the framework of the BRAC program in Bangladesh (Karim et al., 2012).

Policy Lessons

- 1 Policy has not made enough use of available knowledge in the areas of drinking water and sanitation and hygiene: for example, the knowledge about limited health benefits of only basic improved water supply. There is also room for (context-specific) further knowledge development, such as concerning solutions for affordable sanitation; safe removal, disposal and processing or productive use of feces; women's economic use of their time gains and increased availability of water; and about innovative simple systems for data collection at local level on relevant improvements and bottlenecks that undermine services.
- 2 A clear policy focus and consistency are prerequisites for policies to be effective. This is currently not the case. The ministry has implemented the policy in more countries than it had envisioned, among others due to the changes in choice of countries. Furthermore, the priorities in various contexts and in overlapping policy areas were not always clear – for example, access to basic drinking water supply and basic sanitation, often in economically underdeveloped rural areas, and policy aimed at advancement of the private sector in this area. The efforts by governments and donors directed at both can put pressure on the effectiveness of the individual policies.
- 3 Focusing on one dimension of poverty leads to unrealistic expectations with respect to impact and sustainability. Poor beneficiaries of water and sanitation programs are still poor in other respects. If the rest of the economy and local and national institutions lag behind in development, program results and possibilities for creation of sustainable services by governments and private business in this area will remain limited. Just as with other services providing basic needs for the poor, long-term (partial) subsidies will be necessary for continuation of these services. In other words: progress in reaching many Millennium Development Goals is necessary to effectively and sustainably reach water supply and sanitation target figures.
- 4 A specific focus on poverty that enables access and use of services for the poorer parts of the population can contribute to effectiveness. After all, optimal health benefits can only be realized if all households make use of an appropriate water system and toilet. Such a specific focus on poverty also contributes to the main policy goals for poverty alleviation. An example of a program with a poverty focus through measures in the form of loans and subsidies for poorer and poorest households is the NGO BRAC program in Bangladesh.
- 5 Despite numerous references to sustainable development, policies and programs are still oriented too much towards short-term delivery of physical infrastructure and institutions, partially driven by the emphasis on visible short-term results and by spending pressure. The need for institutional maintenance of services, in addition to technical maintenance, is insufficiently recognized. More realism is necessary regarding the need for subsidies, as is more clarity as to how the costs of water supply will be financed in the absence of complete cost coverage. Also necessary is more clarity and realism about the role, capacity and sustainability of NGOs in the sector. Not enough attention is paid to

ecological aspects, in particular in the context of integrated water management and climate change.

- 6 Policy management aimed at sustainable impacts benefits from an approach towards monitoring, evaluation and knowledge management, that is based more on empirical research. Policies and programs are still based too much on unproven assumptions. The Netherlands-financed programs are not alone in their insufficient collection and use of information.¹¹ Conducting more empirical research will give the responsible departments, embassies, authorities and stakeholders better insight into what works in what context, and will allow identified problems to be dealt with.

¹¹ The World Bank evaluation, too, recommends strengthening of data collection and use, particularly for a better understanding of the relationship between water, economic development and project results; as well as for monitoring demand-driven project management, so as to identify aspects that do and do not work, with special attention to financing of services that do not recover their costs (IEG, 2010: xv).

1

Background and methodology

1.1 Introduction

Subsequent to the government-wide Regulation for Periodic Evaluation and Policy Information (RPE 2006), the IOB evaluated the Dutch policy for the development cooperation goal “a higher percentage of the population with sustainable access to safe drinking water and sanitation” in a policy review. This policy forms part of the Dutch contribution to the realization of the Millennium Declaration for poverty alleviation and the stimulation of development adopted by heads of state at the UN Millennium Conference in 2000. The review focuses on the period between 1990 and 2011, whereby the period until 2004 is described only in general terms and the review subsequently focuses on the period from 2004 onwards. The current policy applies to the period from 2004 onwards.

The policy review is mainly based on the following studies:

- study of the policy and policy execution;
- impact evaluation of the Netherlands-supported programs for drinking water and sanitation in five selected countries: Benin, Egypt, Yemen, Mozambique and Tanzania.

Furthermore, earlier IOB evaluations in this area have been used, as well as systematic reviews of impact evaluations and a number of evaluations by third parties, among which a broad World Bank evaluation on water and development (IEG, 2010).

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The studies in Egypt, Yemen and Tanzania were carried out under the responsibility of the IOB. The study in Benin was carried out under joint responsibility of the IOB and the central evaluation department of the German Federal Ministry for Economic Cooperation and Development (BMZ); and the study in Mozambique under joint responsibility of the IOB and the UNICEF central evaluation department. The studies were carried out in the period 2007-2011 and have been published in separate reports (IOB 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011).

1.2 Review questions

In line with the RPE, the IOB focused the policy review on a number of review questions about Dutch policy in this area, about the policy execution and the size of the budgets, and about the effects and efficiency of the policy. The questions are as follows:

1. What is the problem that lies at the basis of the Dutch development policy for drinking water and sanitation?
2. What objectives has the Dutch government formulated for its contribution to solving the problem? What is the policy theory with respect to the realization of the objectives?
3. How is the responsibility for policy and policy execution specified and how has the policy been executed?
4. What activities have been developed?
5. What is the level of the budgets that have been allocated?
6. In what way have the policy and policy execution been monitored and evaluated?

7. What progress has been made towards reaching the targets for access to safe drinking water and sanitation?
8. What is the impact of the Netherlands-supported interventions?
 - a What was the situation prior to the interventions?
 - b What are the most important interventions for drinking water and sanitary facilities and for improved hygiene?
 - c What is the effect of interventions on the use of improved water sources and basic sanitary facilities?
 - d Do the interventions ensure safe drinking water?
 - e Have the facilities led to time savings for water collection?
 - f What is the time saved used for?
 - g Have the improved facilities led to health improvements for the users?
 - h Are there differences in the possibility of access to facilities for poorer and better off households?
 - i Have the facilities led to development opportunities for women and girls?
 - j Are the results sustainable?
9. What is known about the efficiency of the policy?
 - a What is the relationship between the costs of the facilities realized, and the benchmarks used and benefits?
 - b Was the policy executed with a view to obtain desired effects?
 - c Did monitoring and/or evaluation contribute to policy execution?
10. What lessons can be derived from the findings?

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1.3 Methodology

Policy and policy execution

The explanatory answers to questions 1-6 are based on:

1. available documentation such as policy documents, budgets, annual plans and reports and other reports concerning policy execution;
2. inventories and analyses of financial and monitoring information from the information systems of the Ministry of Foreign Affairs;
3. additional conversations with employees of the departments of the Directorate General for International Cooperation (DGIS).

The Netherlands Court of Audit report about drinking water and sanitation (Algemene Rekenkamer 2008), among others, is a source of information about policy execution after 2004.

Achievement of targets

For question 7 about achievement of targets – the number of people who have obtained access to improved water sources and basic sanitation – available information from the ministry about the period from 2004 and findings from the underlying studies have been used. In the absence of complete and detailed data, it was not possible to answer this question precisely.

Impact studies

Question 8 and the related sub-questions about the policy impact and sustainability of results have been answered on the basis of the impact studies in five countries. Evaluations by third parties were used to ascertain if findings agreed with or differed from findings from the partial studies, or if these provided additional insights. Evaluations found for Netherlands-assisted programs – bilateral, multilateral and private sector – appeared in most cases unusable or only partially usable because of their limited scope and/or because they contained little information about the effects of interventions.

The criterion used for the selection of these countries and programs for impact evaluation is that there must have been long-term, substantial and ongoing Dutch assistance in the area of drinking water and sanitation. As mentioned earlier the countries selected are Benin, Egypt, Yemen, Mozambique and Tanzania. These cover a significant number of the priority countries for bilateral cooperation in this area. Benin, Egypt, Yemen and Mozambique belong to the seven countries that were considered priority countries for the water sector until 2011.¹² While Tanzania does not belong to this group, it has been receiving Dutch assistance in this area for a long time (since 1971). The focus of the aid in all five countries has been mainly on facilities in rural areas. In Benin, Egypt, Yemen and Tanzania the impact study focuses on a bilaterally assisted program. The impact study in Mozambique focuses on a Netherlands-assisted UNICEF program. UNICEF is an important multilateral partner for this policy area.

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The studies in the five selected countries focus on the period starting in 1990 (the internationally agreed baseline for measuring the attainment of the worldwide target of halving the number of people without access) or whatever later point in time the Netherlands-assisted programs commenced (Egypt, Yemen and Tanzania in 1990; Benin in 2004; Mozambique in 2006). Although the findings from these studies cannot be considered representative for all the programs and projects, they do provide a broad picture of policy execution and impacts in predominantly Sub-Saharan Africa.

The interventions at the level of the ultimate target group can be classified into four related groups:

- improved water sources (hardware), such as protected wells or boreholes with a pump (Benin, Mozambique, Tanzania) and/or construction of a distribution network, such as water supplies with public taps and/or house connections (Benin, Egypt, Yemen) and improved water pressure in the distribution system (Egypt);
- sanitary facilities (hardware) that ensure hygienic separation of feces from human contact, such as privately owned toilets that are connected to a sewerage system (Egypt), and latrines that are equipped with a hard slab and are connected to a pit (Yemen);
- interventions aimed at improving drinking water that ensure protection or treatment of water against microbiological pollution and/or ensure safe transport and storage, such as treatment with chlorine in the program area (Egypt) and transport and storage in closed containers supplied with a tap (experiment in Benin);

¹² The other priority countries are Bangladesh, Indonesia and Vietnam.

Background and methodology

- training and education aimed at sanitary facilities and hygiene that aim to motivate people to build their own private toilets and improve their hygiene, such as through hand washing with soap or ash after toilet use and before preparing food, covering water during transport and storage and safe removal of young children's and babies' feces (Benin, Egypt, Yemen, Mozambique and Tanzania).

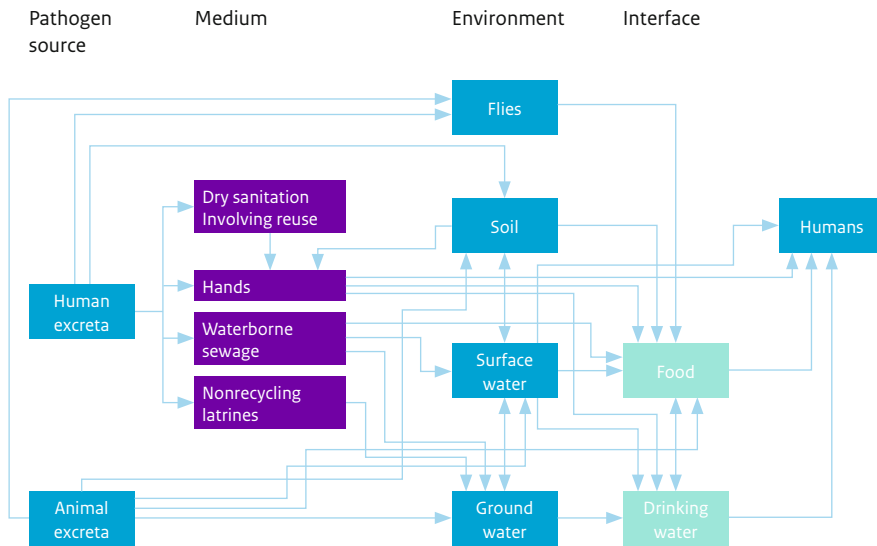
These interventions reduce the risk of disease by creating barriers for pathogens that are transmitted to the human body from feces by fingers, flies, dirt, food and water. The majority of the instances of disease related to a lack of safe drinking water and sanitation are related to this, and are diarrheal diseases (Prüss-Üstün et al., 2008:10).

Mwandutu Water User Group in Tanzania



The figure below illustrates the transmission routes along which the interventions mentioned above reduce the risk of disease.

Figure 1: *Transmission routes for fecal-related pathogenic diseases*



Source: Fewtrell and Colford, 2004, p.3

Reviews of impact studies in this area were a source of information for the impact studies and the policy review (Fewtrell et al., 2005; Waddington and Snilstveit, 2009). The results are not completely unambiguous. Waddington and Snilstveit (2009) conclude that communal water supplies at village level “appear ineffective” while interventions aimed at water quality (for example, treatment with chlorine, filtering, boiling) significantly reduce the instances of diarrhea. Fewtrell et al. (2005) reach a somewhat different conclusion. Their proof is summarized in figure 2 and illustrates that while water supply in itself (column b) has the least effect on health when compared to sanitation, improved hygiene and improved water quality, a new improved water source still reduces the incidence of diarrheal disease by an average of about 20%. Howard and Batram. make a connection between the minimal amount of water necessary for household use (20 liters per person per day), distance to the water source and/or the time needed for collecting water (<1000 meter or <30 minutes) and health (2003). A recent short note from the SHARE Research Consortium argues on the basis of research, that only when the traditional water source is more than a half hour round trip away, will a new water source that is less than 30 minutes away lead to an increase in the amount of water used. If the time needed to collect water prior to the new water source is less than a half hour, the amount of water collected remains more or less the same, regardless of whether the time needed is 5 or 30 minutes or the distance is 1000 or

Background and methodology

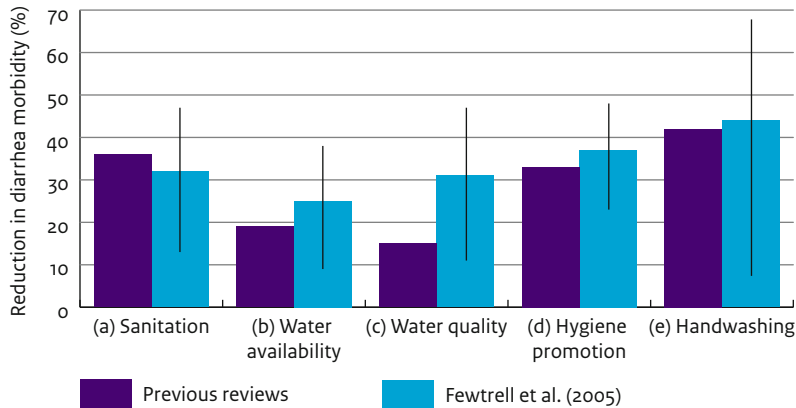
100 meters. This inelasticity of the demand is referred to as the water use plateau. In these cases attaining health improvements through household connections should be considered. Cairncross et al. (2010) point to evidence that the use of soap for hand washing leads to a 48% reduction in the risk of diarrheal disease, 17% of this reduction is attributable to improved water quality and 36% to safe removal of feces.

Figure 2 shows the averages of diarrhea reduction from earlier studies and from research by Fewtrell et al. The figure also shows that the same intervention can have different effects, depending on local conditions. The differences in Fewtrell's study results are depicted by the vertical lines.¹³ In both the study by Fewtrell et al. (2005) and by Waddington and Snilstveit (2009), multiple interventions (a combination of water, sanitation and hygiene) were no more effective than single interventions. Other studies (such as Esrey, 1996), however, point to the importance of hygiene promotion and to sanitation-related interventions to increase the impact of water supplies.

Latrine with hand washing facility in Mozambique



Figure 2: Reduction of diarrhea as a result of drinking water, sanitation and hygiene improvements



Source: Fewtrell et al., 2005

While until now relatively few impact studies have been carried out for these facilities, the available research does confirm the effectiveness of sanitary hardware interventions (see Waddington et al., 2009). There is, however, doubt as to the effectiveness and particularly the sustainability of interventions aimed at domestic water treatment and of hygiene and health education (except education aimed at hand washing). A review by Schmidt and Cairncross (2008) of studies of domestic water treatment by the poorest populations concludes that given the available evidence, large scale promotion is premature. An important question that still needs to be answered is whether treatment of drinking water with commercial products has advantages over hygiene during transport and safe storage of water in the home. The review by Waddington et al. emphasizes that more research into the sustainability of impacts is necessary. The reviews cited above do not provide insight into contextual factors that influence the impact of the interventions.

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Different (usually qualitative) studies give insight into the effects of drinking water and sanitation on male-female relationships and the advancement of women.¹⁴ A participatory study in India of the impact of access to an improved water source on the emancipation of women and income shows that both male-female relationships and economic advancement are significantly better when the water programs are combined with a micro-enterprise project (aimed at women) (Sijbesma et al., 2009). Participatory research in Benin shows that women feel safer when latrines are present nearby, which reduces the chance of sexual abuse (Jenkins working paper no. 28 in Cairncross and Valdmanis, 2004).

¹⁴ See, for example, WaterAid, 2001.

In general it is possible that the results of studies and reviews were influenced by the poor quality of the studies and/or the more or less isolated circumstances in which the interventions may have been carried out. Furthermore, it is known that monitoring of interventions can influence their outcome.¹⁵ Some researchers (Zwane and Kremer, 2007; Waddington and Snilstveit, 2009) criticize the setup of many studies on the impact of interventions because these are not carried out with a (valid) control group. Studies with an experimental or quasi-experimental research design for measuring the effects of water and sanitation programs are still scarce.

The impact evaluations conducted by the IOB are based on a quasi-experimental research design, whereby changes over time are compared to a similar control group. The most important variables on which the IOB impact analyses focus are the use of improved water sources; drinking water quality; water consumption; use of toilets; hand washing with soap or ash; the incidence of diarrheal disease; time savings from collecting water; use of time saved; use of time saved for income-generating activities; participation of girls in education; and access to drinking water and sanitation for the relatively poorer communities and households. Due to the absence of useful baseline information from the beginning of the programs, the quantitative measurement of health effects for three of the five studies is aimed at the effects of a sampling of interventions planned at the onset of the study. For the other studies an attempt was made to reconstruct the baseline through, among others, information from health centers and from (changes in) disease incidence reported by respondents.

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The selected countries were visited in advance for consultation of the authorities and other stakeholders involved. Dutch embassies and other stakeholder organizations were visited to obtain a good understanding of the specific problems, interventions and context; to check the availability and quality of the data and to identify researchers to carry out the research. The impact evaluations were carried out in close cooperation with specialists in quantitative impact analysis from the Amsterdam Institute of International Development/Free University of Amsterdam. For more information about the specific methodologies used in each impact study, refer to the country-specific reports (IOB, 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/ UNICEF 2011).

Sustainability of results

As part of the impact studies, qualitative research on the sustainability of results was carried out in addition to the quantitative impact analysis. Sustainability is defined as the (probability of) continuation of the impact achieved after termination of (a significant part of) the assistance.¹⁶ Various sets of factors explain the sustainability of water and sanitation facilities. A first set is technical in nature (for example technical sustainability of the water infrastructure and management and maintenance). A second set of factors is

¹⁵ In socio-scientific research the “double blind” approach from the medical field is not possible because participants in the intervention group and the control group know that they are part of the intervention. They can modify their behavior accordingly.

¹⁶ The accepted definition is in line with the OECD/DAC definition; see OECD/DAC, 2002, *Glossary of Key Terms in Evaluation and Results Based Management*.

economic (which resources can a society use to invest in the construction, management, maintenance and replacement of infrastructure). Then come environmental factors, which also play a role because they influence the availability of groundwater, for example. Finally, and linked to the other sets of factors in various ways, come the structure and the capacity of the institutes involved, which are of crucial importance for the sustainability of the results achieved. These institutional factors, which are influenced by managerial and political factors, often play the most significant role and are given special attention in the impact studies. For more information about the methodology used in this part of the studies please also refer to the related reports (IOB, 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011).

Policy efficiency

With regards to review question 9 about the efficiency of the policy executed by the Ministry of Foreign Affairs, this report presents findings that were taken from the study of the policy executed and from the impact studies. Costs of the facilities were compared with the unit price used by the ministry. This unit price is based on cost information from various information sources. There was only a limited possibility to calculate benefits from reduced disease burden on the basis of available data compared to program costs. Furthermore, factors promoting or hindering policy execution towards desired effects were examined. The contribution of monitoring and evaluation to the policy processes at the various levels was also analyzed.

1.4 Structure of the report

The report is set up in line with the review questions. Chapter 2 covers the problem analysis and international context (question 1). Chapter 3 describes the Dutch policy that lies at the basis of the targets for drinking water and sanitation, the responsibilities, instruments and policy execution, the budgets, monitoring and evaluation and the available information about the realization of the contribution to the MDG target for drinking water and sanitation (questions 2-7). Chapter 4 analyzes the impact of the Netherlands-supported programs and sustainability of results (question 8 and sub-questions) and chapter 5 discusses findings that concern policy efficiency (question 9 and sub-questions).

2

International context

Chapter 2 discusses central review question 1: What is the problem that lies at the basis of the Dutch development policy for drinking water and sanitation?

Safe drinking water and an appropriate toilet are internationally recognized as basic needs and are essential for human health and dignity. Despite enormous international efforts over the past decades, in 1990 an estimated 1.7 billion people in developing countries still did not have access to safe drinking water and 1.9 billion to improved sanitation facilities. The percentage of the world population that uses improved water sources increased from 77% to 87% between 1990 and 2008, an increase that is in line with the agreed target. The percentage of the world population that uses improved sanitation facilities, however, only increased from 54% to 61%. It is estimated that in 2008, partially due to a growing world population, approximately 1 billion people still had no access to safe drinking water and 2.6 billion people to an approved sanitation facility.

Traditional watersource in Tanzania



This impact is felt most by the poorest households, which make their own arrangements for acquiring these basic needs. Many must travel great distances to collect water or pay relatively high prices to water vendors for small quantities of water. Furthermore, the water sources are often not adequately protected against pollution. The impact of the lack of sanitation is significant for women and children in particular. Due to the often greater demands for privacy they often have to walk further or sometimes only defecate after dark, adjusting their eating and drinking habits accordingly with possible health risks as a result (Sijbesma, 1998:108).

According to WHO estimates, approximately 10% of the worldwide disease burden and 88% of diarrheal diseases can be prevented through improved drinking water and sanitation, hygiene and improved water management (Prüss-Üstün et al., 2008). Besides the disease burden, the burden of collecting water, which falls mainly on women and girls, hampers development. While it is essential for all living things, the availability of water is under increasing pressure. In a number of countries groundwater resources and rivers are drying up and the quality of existing water sources is deteriorating. Reduction of the disease burden, time savings and the development of services in this area serve not only social but also economic interests.

International conferences have contributed to a worldwide consensus about the problems and the ways these must be addressed. Important conferences were the Mar del Plata Conference (1977), which led to the proclamation of the International Drinking Water Supply and Sanitation Decade; the Dublin International Conference on Water and the Environment (1992); the Rio de Janeiro Conference for Environment and Development (UNCED) (1992); the World Water Forums in Marrakech (1997), The Hague (2000) and Kyoto (2003); the UN Millennium Summit in New York (2000) and the World Summit on Sustainable Development in Johannesburg (2002); and the Sanitation and Water for All High Level Meeting in Washington D.C. (2010).

An important achievement of the Decade (1981-1990) was the development, promotion and acceptance of applied technology that led to a reduction of the investment and exploitation costs of drinking water supplies to a more affordable level. During the Decade an increased emphasis on the role of the users in all phases of projects and programs was put forth. Hygiene education was also to become part of drinking water and sanitation programs. At the same time, use of many of the new systems quickly declined due to poor maintenance and management. The state was the key player in terms of sector regulation and policy execution, often without a clear policy framework and executed by an inefficient and fragmented collection of organizations and projects.

Sustainability of drinking water and sanitation has played a more central role in Dutch policy since 1990, and furthermore, played an increasingly larger part in broader discussions about environmental issues in international deliberations. Water-related problems played a prominent role in the Conference for Environment and Development in Rio de Janeiro in 1992. A meeting was held in Dublin in preparation for this conference, which led to the acceptance of the so-called Dublin Principles. The principles, aimed at sustainability, are:

- fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment;

- water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels;
- women play a central part in the provision, management and safeguarding of water;
- costs should be borne by the end users;
- policy execution should be decentralized;
- water has an economic value in all its competing uses and should be recognized as an economic good;
- water supply should be integrated into sustainable environmental management and health.

These principles were reformulated at the Rio conference as spear points for government policy. In the September 2000 Millennium Declaration of the collective member states of the UN, the agreements were brought together and outlined in one framework. These agreements were laid down in eight concrete, measurable goals - the so-called Millennium Development Goals (MDGs) - for which a timeframe was also established: 1990-2015. Access to safe drinking water and improved sanitation was explicitly included in MDG 7: protection of the environment. This MDG was operationalized in four sub-targets. One of the sub-targets (target 7c) says: "Halve, by 2015, the proportion of people without sustainable access to safe water and basic sanitation." The WHO/UNICEF Joint Monitoring Programme (JMP) monitors the progress.

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Subsequent to comments on the JMP definitions (see footnote 1), which aimed too high, UNICEF and WHO introduced a different approach in the 2008 progress report. The definitions remained unchanged but the concept of a drinking water and sanitation "ladder" was introduced. The different levels for drinking water supply are: 1) unimproved water sources: unprotected sources, carts with tank/drum, tank wagon, surface water; 2) improved water sources: public water points, drill holes, improved dug wells, protected sources, rainwater collection; and 3) house/property connections.

The levels for sanitation are: 1) open defecation in the field; 2) unimproved facilities (pit latrines without slab or platform, hanging or bucket latrines); 3) shared sanitation facilities (latrines shared by two or more families, public toilets); and 4) improved facilities (flush/pour flush to sewerage system, to septic tank or pit latrine; ventilated improved pit (VIP) latrine; pit latrine with slab; composting toilet). The various levels are subject of analysis in the 2008 and 2010 JMP reports.

In 2008 the right to water and sanitation was recognized by the Human Rights Council. The Sanitation and Water for All High Level Meeting in Washington in 2010 resulted in a call for improved use of available resources, capacity building, public-private partnerships, integrated approaches and decisions based on empirical evidence. Subsequently, and with a view to better results and effectiveness, WHO reports on international progress through the UN Global Annual Assessment of Sanitation and Drinking Water (GLAAS) report. The 2010 GLAAS report indicates that the level of financing across countries does not correspond with the coverage for drinking water and sanitation (WHO/UN-WATER 2010).

3

The Dutch drinking water and sanitation policy

This chapter covers questions 2 through 6: What objectives has the Dutch government formulated for its contribution to solving the problem? What is the policy theory with respect to the realization of the objectives? How is the responsibility for policy and policy execution specified and how has the policy been executed? What activities have been developed? What is the level of the budgets that have been allocated? In what way have the policy and policy execution been monitored and evaluated? What progress has been made in the Dutch contribution towards the international targets for drinking water and sanitation?

A part of the policy review required in the framework of the RPE is the description of the policy theory, whereby the connection between the problem analysis, the role of the government, the tools and the (intended) impacts are described. Analysis of the relevant policy documents shows that these include elements of a policy theory, especially generally formulated targets and principles and accents for the policy execution.

3.1 Outline of the Dutch policy

Over the years the general objective of the Dutch development cooperation policy for drinking water and sanitation has been formulated in a number of policy documents and in a variety of ways. The main principle has always been that the provision of enough safe water and a suitable toilet are fundamental conditions for health and well-being, economic progress and poverty alleviation.

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1960 – 1989

From 1960 through 1989 the accent of Dutch drinking water and sanitation policy was on physical expansion of infrastructure. A large shortage of supply was observed and meeting the urgent drinking water and sanitation needs of the growing world population was seen as a pressing need. Ambitious infrastructural plans (master plans) were formulated by developing countries with assistance from foreign technical engineering firms and proposed to donors for financing. At institutional level it was the government that provided significant direction. Large central government institutions were responsible for the implementation of the plans and the challenge was mobilizing the large amounts of financial and technical knowledge necessary to do so. New facilities were usually provided to the end users for free or at low cost. In a sector evaluation study completed in 1983 IOB concluded that the type of large scale and capital intensive sector aid chosen was not efficient and effective. The awareness that the large scale construction of infrastructure was not only insufficient but also not always possible became more widespread in the eighties (IOV, 1983).

1990 – 2004

New general principles and policy accents were laid down in the 'World of Difference' (Ministry of Foreign Affairs, 1990) and 'World in Dispute' (Ministry of Foreign Affairs, 1993), memoranda in which the problem of water scarcity was addressed and the importance of an integrated approach to water management was emphasized. Drinking water and sanitation thereby became a part of environmental policy. The attention for institutional development also increased in the same period. Initially the emphasis was on user participation, with women in

particular having the primary responsibility for drinking water supply and for household hygiene, and on management and maintenance of facilities. Subsequently attention shifted to institutional development for integrated water management and strengthening of the broader institutional context, among which the delegation of responsibilities from the central government to lower levels of government.

Knowledge acquired over the years formed the basis of a sector and thematic policy document “Drinking Water Supply and Sanitation in Developing Countries”, which was published in 1997 by the responsible Environment Department (DML) of the Ministry of Foreign Affairs. The limitations of a purely technical approach were recognized at sector level. The focus of the assistance efforts would come to lie on the participation of end users and organizational reform, with the objective of getting the sector institutions to work in a more multidisciplinary, customer oriented and sustainable manner.

“In this context the attention will initially be directed more towards improvement of the management of existing facilities and the renovation of poorly functioning facilities, than towards completely new facilities. Fewer donations will be used for high quality, capital intensive infrastructure... Financing this is more a task for a branch of commercial and development banks than for bilateral donors. The emphasis will [...] be directed [...] towards creating the conditions for sustainable management of drinking water and sanitation with emphasis on aspects of institutional development, user participation, financial management and appropriate technology.” (Ministry of Foreign Affairs, 1997)

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While the policy was mainly directed at rural areas, increased attention would be paid to rapid urbanization.

At sector level the restructuring of the policy and the operationalization was difficult. In the report *Institutional Development, Netherlands Support to the Water Sector 1988-1998* (2000), the IOB ascertained that the restructuring of the development assistance sector policy had been delayed and was neither efficient nor effective. On the basis of four case studies (India, Bangladesh, Egypt and Mozambique), the IOB concluded that despite significant efforts (50% of the aid in the form of technical assistance), the institutional problems were much more persistent than anticipated and restructuring, overall, delivered unsatisfactory results. Most newly formulated projects did not have a very structural approach to the technical and institutional problems in the sector due to internal social and political resistance by the establishment to the proposals for sector reform.

Shortly after the publication of the thematic policy document in 1997, the Minister for Development Cooperation announced in a letter to the Lower House, an overall restructuring of the Dutch development cooperation policy, which had consequences for the sector policy. The details of the restructuring were introduced in the draft “sectoral approach”.

“As far as the policy environment and the execution capacity allow, the coming years will see a shift from project assistance to support of sector programs initiated by partner countries... Ultimately this can turn into sectoral budget support if certain conditions are met in the area of macroeconomic and sector policy... There will also be more attention for a process-based approach to assistance activities.” (Ministry of Foreign Affairs, 1998)

The number of countries and sectors for development cooperation was limited. A separate memorandum indicated that with the use of the various financing mechanisms in addition to the cross-sectoral policy accents used earlier (poverty alleviation, women and development, environment), attention would be paid to two additional themes: good management and institutional development (GAVIM criteria). The memorandum “Mutual Responsibility”, which the Minister for Development Cooperation sent to the Lower House on 3 October 2003, confirms the policy outline.

Subsequent to the general restructuring of the development cooperation policy as a result of the sectoral approach, the Netherlands committed itself to the Paris Declaration on Aid Effectiveness (2005), which is aimed at aligning aid with the policies and institutional frameworks of the countries concerned, and on harmonization of donor aid.

In the evaluation report *Sector Support in Environment and Water (2008)* the IOB establishes that in the execution of the sectoral approach the emphasis was on technical-financial and policy aspects and cooperation between donors and central government. This led to the neglect of other actors. The implementation also had too little attention for concrete obstacles to effective service provision at local level. A specific poverty focus and support are particularly necessary in areas where there is a large difference in poverty level between households.

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2004 – 2010

A speech by the Minister for Development Cooperation in the FAO/Netherlands Conference on Water for Food and Ecosystems marked a new reorientation of the drinking water and sanitation policy. In her speech the Minister announced that the Netherlands wants to offer 50 million people sustainable access to safe drinking water and sanitation. Upon the introduction of the target the leading principle was the political will to work with a greater result orientation and to make a contribution to MDG 7. The Ministry’s preparation with respect to the content and orientation of this declaration of intent was limited.

The coalition agreement of the Balkenende IV cabinet added the project “Approaching Millennium Development Goals”, otherwise known as Project 2015, which is aimed at cooperation between public and private partners in the Netherlands to close the gap in reaching the Millennium Development Goals (Ministry of Foreign Affairs, 2007a). The goal of the project was to develop a strategy based on a scan of the progress towards the various MDGs and consultations with the partners involved. For drinking water and sanitation policy this resulted in the so-called Schokland agreement, the Netherlands Water Partnership and a number of public-private partnerships that led to additional investments for urban drinking water supply in, among others, Indonesia, Vietnam, Yemen and Mozambique.

The details about the policy intentions for the sector from the beginning of 2008 in a parliamentary letter about the “50 million target: drinking water and sanitation” are cited in the box below.

1. Principles

Contribution to MDG 7, target 7c

This 50 million target contributes to the realization of MDG 7. MDG 7 aims at creating access to clean drinking water and sanitation. Specifically, realization of this MDG means that between 2000 and 2015, 1.1 billion people worldwide should gain access to drinking water and 1.6 billion people should gain access to sanitation. The realization of this target is followed by the UNICEF/WHO Joint Monitoring Program (JMP). Currently the realization of the target at global level for drinking water is on schedule, but the realization with respect to sanitation lags far behind. In Africa MDG 7 will not be reached for either drinking water or for sanitation without extra efforts in the short term.

Target group

The target group is the poor who do not have access to safe drinking water and do not yet have improved sanitation facilities.

Program characteristics

The 50 million target is aimed at realizing access to simple and sustainable basic facilities (for example, wells, water kiosks and pit latrines) for the target group. Main criteria have been formulated by the JMP: at least 20 liters of water per person per day whereby the water source should be located at a walking distance of less than 1000 meters from the home. The JMP has defined several types of facilities as “improved” for sanitation. The Netherlands uses these criteria and definitions as their main frame of reference for program development and monitoring but adds criteria in specific situations: for example, in Bangladesh there is a strong emphasis on water quality due to the pollution of water sources with arsenic.

The program focus is on Sub-Saharan Africa. Due to the significant impact of safe drinking water and sanitation on women and girls (education, health, safety and dignity), the program contributes directly to equal opportunities for women and girls.

Realization of the target is estimated on the basis of expenditures, programs and realizations since 2004. The information presented in this letter is largely based on programs completed until now and contracts with implementing agencies.

Actual realization of the target will be monitored on the basis of reporting by the implementing agencies and will be presented in the departmental annual report and the biannual Result Reports. Determination of the actual number of beneficiaries reached will take place per investment on the basis of the proportion of Dutch financing as part of total financing (pro rata).

2. Operationalizing the target

The targets are achieved mostly by direct investments through multiple channels (multilateral, bilateral, private sector and NGOs). In the current planning approximately 80% of the 50 million target will be realized in this fashion.

The direct investment programs share the following common characteristics, in addition to the specific target group:

- as many integrated and jointly developed drinking water and sanitation facilities as possible; this is the only way that these facilities will be effective in reducing water-related diseases;
- alignment with the demand of the target group and coordination with the national policy and institutional framework of the particular country: the national policy plan for the sector and optimal use of the capacity of national institutions plays a central role; financing modalities should follow national procedures as much as possible;
- sustainability of the facilities: the facilities must be technically sustainable (appropriate choice of technology with realistic maintenance demands), as well as economically/financially and ecologically sustainable.

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Source: Letter to parliament regarding the “50 million target: drinking water supply and sanitation”, Ministry of Foreign Affairs, 2008a.

Furthermore, at the seventh sitting of the Human Rights Council the Netherlands recognized the right to safe drinking water and sanitation as a basic human right. The following was noted about this human right in the letter to parliament dated 13 May 2008: *“Recognition of that right grants the Netherlands, in policy discussions with partner countries, the right to point out the responsibilities of the government and the rights of the population, in particular the vulnerable groups. This makes a contribution to the reduction of the backlog in achieving the MDGs possible”* (Ministry of Foreign Affairs, 2008b).

In addition, in 2008 a resolution was adopted by the parliament declaring that 1% of the annual turnover of Dutch water companies can be used for projects in developing countries.

End of 2010 – 2011

The cabinet that took office in October 2010 has set a new course for Development Cooperation policy. The choice has been made to concentrate on four spear points: 1) safety and legal order, 2) food security, 3) water, and 4) sexual and reproductive health and rights.

The choice for the water theme was inspired by the specific knowledge the Netherlands has in this area and the opportunities this offers for the Dutch business community. The expansion of public-private partnerships and stimulation of investments by the Dutch water sector in developing countries were emphasized.

The objectives for the water policy are formulated as follows:

The Netherlands wants to use its knowledge and experience to contribute to effective water management with the following objectives:

- efficient and sustainable water use, particularly in agriculture;
- safe deltas and better management of flood areas, also in the context of climate change;
- improved access to safe drinking water and sanitation.

A decision was made to reduce the number of partner countries to 15. Cooperation in the area of water is possible for most countries.

The policy is aimed at comprehensively including country-specific cross-sectoral gender, good governance and environmental aspects. Good governance is the main cross-sectoral theme for water, whereby an accent is placed on the mutual accountability between organizations and water users.

The letter to parliament about water and development dated 9 January 2012 prolongs the policy aimed at MDG 7c (target figure of an additional 25 million people in 2015 in both cities and rural areas) in at least 8 countries and 10 cities and explicitly emphasizes the economic interests of drinking water supply and the role of local small and medium-sized businesses in achieving improved sustainability.

3.2 Responsibilities and instruments for policy execution

The Environment, Water and Climate and Energy Department (DME) is the point of contact for the policy that lies at the basis of the target 'a higher percentage of the population with sustainable access to safe drinking water and sanitation'. The department is responsible for policy development and formulation, execution, quality improvement and coordination.

Insofar as bilateral activities that can be brought under a specific embassy are concerned, the policy execution is in principle delegated to the embassies. DME is responsible for promoting an active attitude among the embassies with respect to policy implementation and monitoring. DME also supports a number of NGOs with its budget in the context of the joint financing program. DME is responsible for NGOs that work specifically in the area of water and sanitation. NGOs for which water and sanitation form part of a larger program fall under the management of the Social Development Department (DSO) or, in the case of emergency aid, the Human Rights, Good Governance and Humanitarian Aid Department (DMH).

Furthermore, a number of drinking water and sanitation activities are financed from the budgets of the Sustainable Economic Development Department (DDE – Development Related Export Transactions program ORET, presently Facility for Infrastructure Development ORIO) and from the United Nations and International Financial Institutions Department (DVF). In this case it concerns instruments that in themselves are not a result of drinking water and sanitation policy, but whereby some of the activities contributed directly or indirectly to the realization of the target of 50 million. The contacts DME has with other departments vary. The

contacts with DSO are of an ad hoc nature. DME maintains contact with DDE on a regular basis to ensure consistency in policy execution and attribution of results to the target figure. DME advises DVF in the allocation of resources. For more information about the specific activities per department, please refer to chapter 3.3 on policy execution.

As explained in the citation below from the 2008 letter to parliament about the 50 million target, the execution of the goal for drinking water and sanitation takes place through the usual channels for development cooperation: the bilateral channel, the multilateral channel and the private channel. Results for all these channels and financing modalities are also attributed to the target figure.

Bilateral channel

Realization of the target is largely achieved through the bilateral channel. In the bilateral cooperation the sector approach, which aims to improve the quality, effectiveness and sustainability of the assistance, is key. In partner countries where the drinking water and sanitation sector is part of the development cooperation program, such as Ghana, Indonesia and Mozambique, these programs have been intensified and expanded. In partner countries in which the Netherlands does not actively support the water sector, sector programs are financed through silent partnerships (SPs) with like-minded donors (such as in Tanzania).

In a number of cases drinking water and sanitation has been added as a component to running sector programs (Bangladesh and Mali, among others). Based on current agreements this will result in 11.2 million people gaining access to drinking water and 16.5 to sanitation.

Multilateral channel

Agreements have been signed with UNICEF so that in the coming six years 2.5 million people will gain access to safe drinking water or improved sanitation in Malawi, Mozambique, The Comoros and Ethiopia. It is anticipated that this program will be expanded in 2008 to a number of countries in Africa (Rwanda, Burundi, Zambia).

An agreement was also signed with UN-HABITAT for drinking water and sanitation in cities around Lake Victoria. The International Financial Institutions (IFIs) have seen their investments in the area of drinking water and sanitation decrease drastically in the past decade. Through strategic use of financing in the form of donations the Netherlands wants to enable the funds of the development banks (like IDA) to make large(r) loans with a strong result orientation possible. This will be achieved by making Dutch financing available for capacity building and institutional development in an early stage of the activity cycle, forming the foundation for larger investments from the funds and other donors.

Partners involved are the World Bank (through the Global Partnership on Output-Based Aid), the African Development Bank (through the Rural Water Supply and Sanitation Initiative) and the Asian Development Bank.

Private sector

In 2005 proposals from Aqua for All, Connect International and SIMAVI were approved in the context of the Thematic Joint Financing (TMF). In total some 900,000 people will gain access to clean drinking water and some 680,000 to improved sanitation.

In 2004 a “water window” was created within the ORET program, which stimulated investments in the water sector and particularly in drinking water supply and wastewater treatment. On the basis of the agreements concluded within the ORET, 3.1 million people will obtain access to drinking water. An important component is the Dutch contribution to financing of the drinking water supply in Khartoum, whereby 1.2 million people will gain access to drinking water.

The private sector is also mobilized through cooperation with the Netherlands Water Partnership and public-private partnerships (PPPs) whereby additional investments are generated in, among others, Indonesia, Vietnam, Yemen and Mozambique.

Attribution

Aside from the above mentioned direct investments approximately 20% of the targets will be achieved through general budget support to the development cooperation partner countries and Dutch core funding of the IFIs.

- Attribution of general budget support

The Netherlands supports the realization of investments in water supply and sanitation in the partner countries in which it provides general budget support. In attributing the general budget support towards realizing MDG 7, it has been assumed that the current volume of macro-support through 2015 for 18 countries will be set forth, resulting in a total estimate of DGIS macro-support of EUR 1.6 billion for the period from 2004-2015. Assuming an average budget of 5% for the sector, whereby it is assumed that half is made available for investments in direct service provision, and a “unit price” of EUR 45 for water supply and sanitation, the contribution from the macro-support to the output targets is estimated at approximately 1 million people for water supply and 1 million people for sanitation. This is an estimate that will be adjusted on the basis of actual macro and sector support.

- Attribution of IFI core funding

In attributing the Dutch core funding to the IFI funds (for example International Development Association, African Development Fund), it is argued that the IFIs finance investment programs that result in basic services. The attribution is based on continuation of the current level of contribution to these funds through 2015. Attribution takes place on the basis of the Dutch share of the funds, the percentage of the funds that are invested in water supply and sanitation and the unit price of EUR 45 per person mentioned above. On the basis of this attribution system, 6.5 million people will gain access to water supply and 8 million to sanitation in the period from 2004 through 2015.

Besides the activities mentioned above, there was cooperation with international organizations in the area of planning and monitoring, such as the World Bank Water and Sanitation Program and the UNICEF/WHO Joint Monitoring Programme, and with international interest organizations such as the UN Secretary General's Board on Water and Sanitation (UNSGAB).

For the countries that were selected for bilateral cooperation, the four-year Multi-Year Strategic Plan (MJSP) of the Dutch embassies is the basic tool for development assistance policy execution. With the help of the MJSP the policy priorities for bilateral cooperation are translated into operational targets, strategic results and activities. The definition of a strategic result is that it shows the intended short- and medium-term impacts of an intervention or a series of interventions. The added value that the embassies can contribute in achieving the objectives must be indicated when formulating these strategic results. Important elements of the MJSP are the general track record (TR) and sector track record(s) (STR), containing an analysis by the embassies of the developments in a particular country or sector. The Annual Report/Annual Plan has a short-term planning and control function here, and serves as an instrument with which to follow the course of the activities and make any necessary adjustments, including on the financial side. The level of the budgets is determined each year during the planning process, whereby the policy frameworks (letters to parliament, Memorandum of Clarification to the budget) are directive.

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Central policy steering by the responsible policy department DME takes place through the specification of the policy and financial frameworks prior to the formulation of the MJSP. MJSPs and the related TR and STRs are then checked against central policy documents, in the first place the Memorandum of Clarification; against speeches by the policymakers; answers to Parliamentary questions; promises to Parliament and policy memoranda approved by policymakers. Analysis of the approval reports from the central review shows that the central direction and check against formulated policy that lies at the basis of the policy objectives in the Memorandum of Clarification to the budget, is marginal.

At policy department level, the four-year Strategic Choice Plan (SK) is the basic tool for policy execution. Among DME's main responsibilities are, in addition to managing programs and projects financed from the central DME budget, advocating Dutch policy in international forums; translating the implications of international environmental and water policy to development programs and projects; strengthening the Paris agenda for donor coordination and harmonization; and supporting and checking the policy formulation through knowledge development, among others through support to knowledge institutions. In cases where the embassies are responsible, the department – on the initiative of the embassies – only plays an advisory and facilitating role. DME also facilitates communication and exchange of knowledge and experience between the department, the embassies involved and third parties by regularly organizing the so-called Environment and Water Week.

Policy is further operationalized and financial resources for development assistance activities are committed within the frameworks of the MJSP and the SK. The most important

types of activities are project assistance, sector program assistance and non-earmarked and earmarked contributions.¹⁷

The appraisal memorandum is the document on the basis of which the budget holder (embassies and departments) makes a decision about funding an activity. The appraisal memorandum indicates to what extent the proposed activity is line with the expected results in the MJSP of the embassy or in the department's Strategic Selection Plan.

3.3 Policy execution

Paragraph 3.3 outlines the activities that have been carried out and the related budgets (questions 4 and 5). The inventory of the activities and the budgets has been hampered by inaccurate information. In practice the departments and the embassies do not seem to apply the expenditure coding system consistently, resulting in often incomplete and sometimes incorrect financial reports at sector level. It is also difficult to gain insight into the expenditures for water supply and sanitation that are part of a broader program (such as generic expenditures by multilateral institutions).

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Classification of the expenditures on the basis of OECD Creditor Reporting System (CRS) codes ultimately provides the most reliable picture. Expenditures that form part of broader activities are calculated separately, as these cannot be obtained from the management information system of the Ministry of Foreign Affairs on the basis of CRS codes. Based on the expenditures constructed in this manner it appears that while the expenditures in the water supply and sanitation sector were significantly reduced after an initial increase in the nineties, the annual expenditures in the period 2004-2010 nearly quadrupled from approximately EUR 38 million in 2004 to over EUR 153 million in 2010, with a peak of nearly

¹⁷ **Project assistance:**

A development investment that, with respect to targets and resources, is limited to a specific intervention in a specific time period and that is executed by a project team (N.B. a project team can consist of specially contracted (expatriate) staff but also regular staff from a government organization in the particular developing country).

Sector program support:

Support that is allocated to one sector, for example, in the context of the Sectoral Approach. In practice this concerns sectoral budget support, sectoral (programmatic) basket financing and co-financing of sectoral adjustment programs with the World Bank.

Contribution, earmarked:

Earmarked financial support for a program of a national or multilateral institution with a fixed scope. In practice this concerns the partnership programs with the International Financial Institutions (IFIs) and the UN, specific program contributions to UN organizations and to international and national private sector institutions.

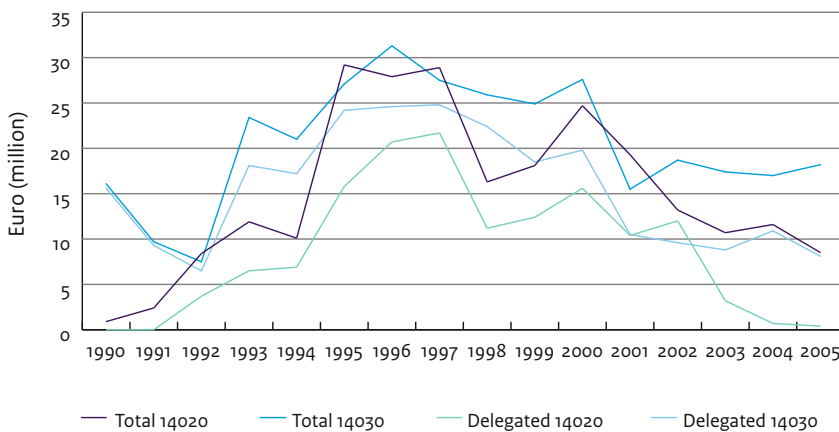
Contribution, not earmarked:

Financial support for the general resources of a national or multilateral organization. In practice this concerns supplementation of the International Financial Institutions' "soft funds", general contributions to UN organizations, subsidies for the MFOs, program funding for FMO, IBTA, PSOM and PUM, general contributions to international private sector institutions as well as national private sector institutions in developing countries.

EUR 190 million in 2009.¹⁸ The decrease in contributions as of 2009 is mainly due to the general cutbacks in the development cooperation budget.

The figure below shows trends in annual expenditures for total expenditures and expenditures delegated to posts and for small scale and large scale drinking water systems from 1990 to 2005.

Figure 3: Trends in annual expenditures for water supply and sanitation from 1990-2005

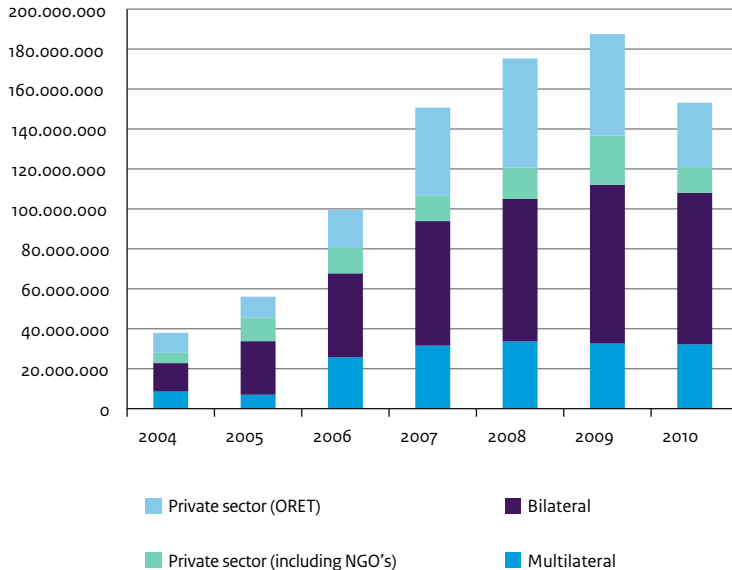


Source: Ministry of Foreign Affairs, information system, expenditures: CRS codes 14020 for large water systems and 14030 for small systems

The following figure shows the increase in resources and the distribution of the resources over the channels since 2004.

¹⁸ In the calculation of the total expenditure for water supply and sanitation, the attributions from general budget support of 1.5% and 1% for water supply and sanitation are not included because the actual spending of these amounts is very difficult to ascertain.

Figure 4: Distribution of water supply and sanitation expenses, 2004-2010 (in EUR)



Source: IOB reconstruction of expenditures based on CSR codes, ORET reports, CIDIN NGO database and 2009/2010 result reports¹⁹

Bilateral cooperation – delegated resources

The Netherlands supported some forty countries in the area of water supply and sanitation in the nineties. Most of this support went to eight countries: India, Bangladesh, Egypt, Yemen, Pakistan, Indonesia, Mozambique and Tanzania. With the introduction of the sector approach in 1999, Dutch development assistance concentrated on the so-called partner countries that qualified for structural bilateral assistance. In 1999, 22 partner countries were selected with which a long-term relationship would be set forth or entered into, in addition to a number of countries for thematic cooperation. The country selection was reviewed again in 2002/3, which resulted in a combined list of 36 countries. The water sector was chosen as a priority in seven of those countries: Bangladesh, Egypt, Yemen, Indonesia, Vietnam, Mozambique and Benin. The Netherlands had already been involved in the sector for several years in Egypt, Yemen and Mozambique. The choice for Bangladesh, Benin and Vietnam was partly influenced by the priority for water supply and sanitation, and the possibility to contribute towards reaching the MDGs in general and the “50 million target” in particular. In the 2007 policy memorandum the country selection was largely maintained

¹⁹ Financing for the ORIO program is not included in this figure because the expenditures for water supply and sanitation projects through 2010 were relatively limited. The multilateral generic resources for 2004 and 2005 are not included in this figure due to the lack of reliable information about the annual expenditures for this category. The multilateral expenditures for 2004 and 2005 are therefore an underestimate of the actual multilateral expenditures in these years.

but countries were grouped on the basis of three profiles: fragile states, countries in which realization of millennium goals could be accelerated, and middle income countries in which traditional development cooperation was going to be phased out and replaced with other forms of cooperation. Vietnam, Egypt and Indonesia belonged to the latter category, in which sector support was going to be phased out.

The following table for the period 2004-2010 shows that next to the seven partner countries, bilateral assistance was also provided for water supply and sanitation in several other countries.

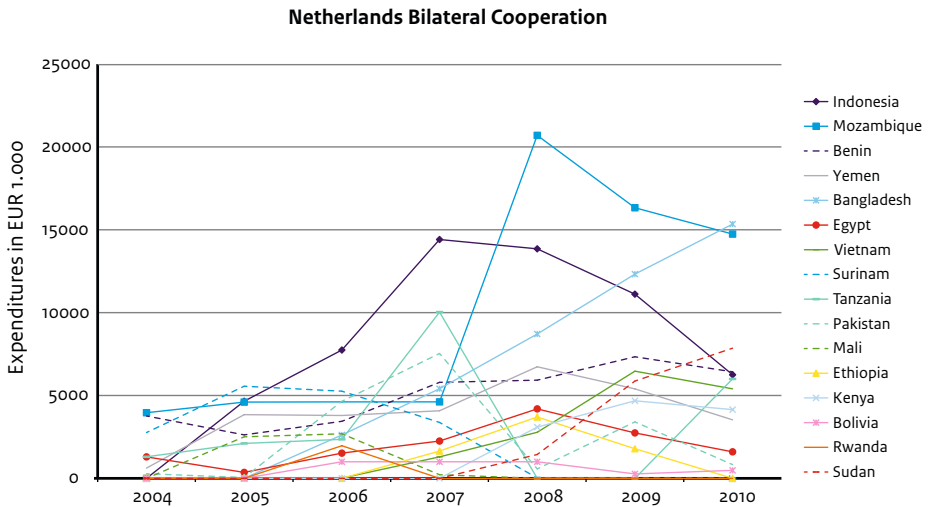
Table 1: Delegated water supply and sanitation budget expenditures, 2004-2010 (in EUR 1,000)

	2004	2005	2006	2007	2008	2009	2010
Indonesia	0	4,654	7,744	14,412	13,850	11,115	6,250
Mozambique	3,961	4,602	4,614	4,615	20,698	16,329	14,741
Benin	3,763	2,623	3,442	5,793	5,925	7,336	6,428
Yemen	619	3,844	3,793	4,078	6,733	5,399	3,530
Bangladesh	0	0	2,618	5,408	8,711	12,324	15,344
Egypt	1,294	359	1,522	2,251	4,191	2,741	1,600
Vietnam	0	0	13	1,296	2,779	6,468	5,401
Surinam	2,764	5,559	5,260	3,374	21	14	0
Tanzania	1,300	2,107	2,353	10,033	0	0	6,000
Pakistan	279	50	4,648	7,535	569	3,407	829
Mali	0	2,507	2,688	219	0	0	0
Ethiopia	0	0	0	1,647	3,700	1,787	0
Kenya	0	0	0	0	3,092	4,680	4,147
Bolivia	0	0	1,000	1,000	1,000	267	483
Rwanda	0	0	1,968	0	0	0	0
Sudan	0	0	0	0	1,440	5,870	7,855
Other countries	242	500	322	682	2,575	1,777	3,214
Total	14,222	26,805	41,985	62,343	71,284	79,514	75,822

Source: Ministry of Foreign Affairs, information system based on CRS codes 1410 (water resources policy and administrative management – partial), 1420 (water supply and sanitation systems), 1430 (basic drinking water supply and basic sanitation), 1450 (waste management/disposal) and 1481 (education and training in water supply and sanitation)

Extra obligations were taken on after the launch of the “50 million target” in 2005. This has led to a significant increase in the delegated bilateral expenditures, although this had decreased slightly since the cutbacks on development cooperation. The bilateral expenditures for water supply and sanitation have risen from EUR 14 million in 2004 to over EUR 75 million in 2010, nearly 50% of the total sector expenditures for that year. Figure 5 clearly shows the fluctuations in the support to water supply and sanitation in the various countries. The peak countries Bangladesh, Indonesia and Mozambique are also clearly visible.

Figure 5: Trends in bilateral expenditures for water supply and sanitation per country, 2004-2010



Source: Ministry of Foreign Affairs, Management information system

An overview from the JMP update 2010 shows that some of the countries mentioned above are not the countries with the lowest coverage. In 7 countries more than 80% of the population has access to improved water supply. These figures are lower for sanitation: in 7 of the 16 countries mentioned above, more than 50% have access to improved sanitation.

Sector budget support for the water sector - in the form of a financial contribution to the sector budget - is only provided in Mozambique. In a number of countries there is a detailed alignment of the execution format with the administration of the recipient countries (for example Yemen and Benin) and/or the assistance is more or less combined with the contribution from other donors in the form of basket or co-funding.

Initiation of and participation in public-private partnerships (PPPs) is a relatively recent phenomenon in the bilateral assistance relationship with a number of countries. Here, joint initiatives from governments, businesses and other actors such as NGOs are financed that focus on water supply and sanitation. The expectation is that the centralization of knowledge, experience and resources from various parties, such as for the management and exploitation of water supplies, can make a contribution to sustainable development in the sector. Examples are programs by Vitens-Evides International in Mozambique and Ghana. This form of cooperation forms part of bilateral sector programs in Mozambique, Vietnam, Yemen and Indonesia. A unique aspect of these activities is that they focus almost exclusively on improvement of urban water supply and sanitation.

Central resources

Outside of the country allocations, a number of activities are financed by the central budgets from the Environment, Water, Climate and Energy (DME), Sustainable Economic Development (DDE) and United Nations and International Financial Institutions (DVF) departments. From a reconstruction on the basis of individual activities and budget items it can be concluded that over the past years the central expenditures in the water and sanitation sector have more than doubled on an annual basis from approximately EUR 24 million in 2004 to over EUR 52 million in 2010.

	2004	2005	2006	2007	2008	2009	2010
Water supply and sanitation	9,785	13,133	24,310	25,193	27,101	22,059	16,183
Waste treatment	674	1,387	2,590	1,721	1,880	2,334	2,334
Training and education	1,890	1,633	2,807	2,258	2,716	1,694	2,344
Total	12,349	16,154	29,707	29,172	31,697	26,087	20,861

Source: Ministry of Foreign Affairs, management information system on the basis of CRS codes

Multilateral organizations

Most of the DME's financial resources go to a number of international and multilateral organizations that are active in the water supply and sanitation sector, among whom UNICEF (UNICEF-Netherlands Partnership Programme for Water and Sanitation), the African Development Bank (African Water Facility, Rural Water Supply and Sanitation Initiative), the World Bank (Water and Sanitation Program), UNSGAB (United Nations Secretary General's Advisory Board on Water and Sanitation), the EU (Water Facility) and the Asian Development Bank (Water Financing Partnership Facility).

The most important activities supported in the period 2004-2010 were:

- UNICEF WASH program (EUR 78.6 million)
- African Development Bank Rural Water Supply and Sanitation Initiative Trust Fund (RWSSI) (EUR 51 million)
- Water Supply and Sanitation Collaborative Council (WSSCC) 2008-2012 (EUR 34.4 million)
- Water Supply and Sanitation Collaborative Council (WSSCC) 2004-2006 (EUR 2.2 million)
- Asian Development Bank; Water Financing Facility (EUR 16 million)
- World Bank Water and Sanitation Programme (WSP) (EUR 15 million)
- UN Secretary General's Advisory Board on Water and Sanitation (UNSGAB) (EUR 3.6 million)
- UN HABITAT Water and Sanitation Trust Fund (EUR 9.3 million)
- UN HABITAT-MEKWATSAN (EUR 4.9 million)

The financial contributions are partly aimed at technical assistance and knowledge transfer in the context of activities for sectoral loans and investment programs by these international

organizations. Among the arguments used for this support is, aside from the availability of resources for the sector, the position it gives the Netherlands in the most important international forums and networks that bring and keep the water supply and sanitation sector on the international political agenda. Another argument for the financial participation is that it alleviates the DME management burden. These efforts towards mobilization of resources and influencing policy have not been further investigated.

The financial contributions to the UNICEF-Netherlands Partnership Programme for Water and Sanitation (UNICEF WASH program) deserve special mentioning. This concerns project financing of rural water and sanitation programs in six East African countries that could not be financed with bilateral resources or of which the embassies could or would not assume the management. The Dutch central budget funding of the UNICEF programme is the main explanation for the sharp rise in central budget expenditures in the period from 2006-2008.

The United Nations and International Financial Institutions Department (DVF) coordinates the Dutch input in UN organizations and international financial organizations such as the IMF, the World Bank Group and regional development banks. A portion of the Dutch financial contributions to the World Bank is earmarked for water supply and sanitation, in particular the contributions to the Global Partnership on Output-Based Aid (GPOBA) trust fund and the Bank-Netherlands Water Partnership (BNWP) trust fund. As budget holder of the cooperation project with the World Bank, the DVF functions as financial manager and the DME takes the responsibility for substantive tasks.

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The 2009-2010 Result Report (Ministry of Foreign affairs, 2011) indicates an average of EUR 30 million per year for water and sanitation through the multilateral channel. Based on this, an average annual contribution through multilateral generic resources of EUR 19 million can be calculated.²⁰

A recent evaluation of the World Bank support to water and development for 2007-2010 shows that the World Bank water supply portfolio has grown. Of a total of 556 water projects, 356 were aimed at urban facilities. Of these projects, 281 had at least a component aimed at facilities in rural areas, and 96 were primarily aimed at rural areas. Next to physical infrastructure, institutional development is increasingly a component in these projects. Progress in the area of sanitation is limited. This area shows a preference for capital intensive works: 32 projects supported wastewater treatment and 115 projects were aimed at sanitation at household level (IEG, 2010: 55).

NGOs

Additionally a number of NGOs received financial support from the DME budget. Some of these are executing organizations that aim at realizing facilities and others are mainly knowledge organizations. Sometimes organizations are a mix of the two. The most important are Aqua for All, the IRC International Water and Sanitation Centre (IRC), Women in Europe for a Common Future (WECF), Stichting DORCAS, the WASTE Issue program, WaterAid, Stichting Connect International, Aid Environment, the Red Cross, Plan Nederland and the RAIN Foundation.

²⁰ Calculated on the basis of information from the 2009-2010 Result Report on the total multilateral contribution to water supply and sanitation minus the earmarked amounts.

The types of activities carried out by these organizations are investigated on the basis of appraisal memoranda and end reports or annual reports.

Table 3: Types of activities carried out by supported NGOs

	Construction of W & S* hardware	Training and education	Provision of information	Capacity building	Influencing policy	Strengthening Dutch support	Networking
Action contre le Faim	X	X		X			
AidEnvironment (RAIN)	X			X	X		
Aqua for All	X			X		X	
Connect International	X			X			
Dorcas	X			X		X	
Red Cross	X	X		X		X	
IRC			X	X	X	X	X
ISSUE program	X			X	X		
Plan	X			X			
RAIN Foundation	X	X		X	X		
SKAT Foundation			X	X	X		X
Stichting 2015 (UNICEF Nepal)	X	X		X		X	
Stichting Deltares				X			
Streams of Knowledge			X	X			X
UWEP+ Waste program			X	X	X		
WaterAid	X			X	X		
WECF	X			X	X		

* W & S: water and sanitation

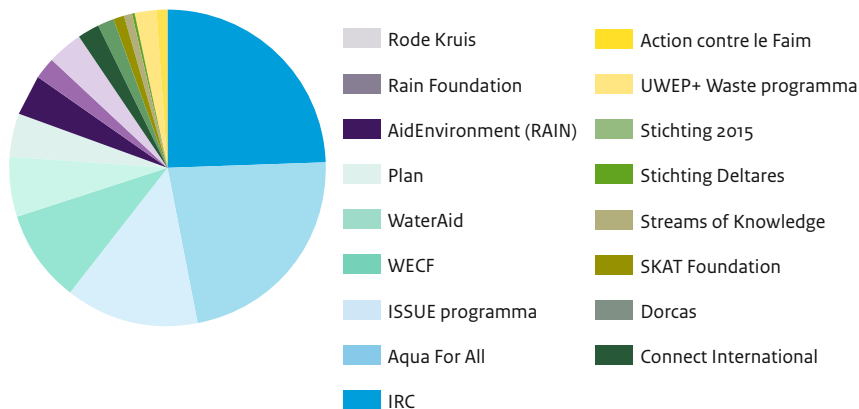
Source: appraisal memoranda, annual reports, end reports

The table shows that most organizations focus on constructing water supply and sanitation facilities (hardware). These programs are included in the calculation of the realization of the MDG target figure. A small number concentrate on training and education. All the NGOs indicate that they focus on capacity building. In nearly all cases this concerns increasing capacity among the target groups with the main aim of achieving the program or project objectives. Some of the organizations are active in the area of providing information, lobbying, influencing policy, and/or strengthening support in the Netherlands. Nearly all NGOs work together with local partners. These could be local NGOs or research institutes

that are active in the sector or other parties such as governments, schools and water supply companies. In about one-third of the cases the organizations work directly with the government, as implementer and/or supporter of policy execution. Many organizations focus specifically on participation of women and some on services for the poorest and marginalized groups.

As evident from the figure below, a great deal of the resources goes to the IRC International Water and Sanitation Centre (IRC) in The Hague. As international knowledge center, IRC is an exception in that it focuses only on information provision, capacity building, influencing policy and creating awareness, and not on the construction of facilities.

Figure 6: Directly financed NGOs



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Source: appraisal memoranda, annual reports, end reports

The public-private partnerships (PPPs) are also supported from the same budget category.

Organizations such as ICCO, Oxfam-Novib, SIMAVI and SNV are also active in this area and have received subsidies from central resources. They have been financially supported for a large part through the Co-Financing System (MFS) and fall under DSO management. In 2008 an estimated EUR 4 million was spent on water supply and sanitation through the co-financing organizations. In 2009 this was more than EUR 10 million.²¹

²¹ CIDIN NGO database, www.ngo-database.nl. Important to note is that these MFS organisations must secure at least 25% of their financing from other sources. The amount mentioned for this group of NGOs should therefore be seen as an indication.

Donation facility for export transactions and infrastructure development

The DDE department of the Ministry of Foreign Affairs is the budget holder for the Development-Related Export Transactions program (ORET) and the Facility for Infrastructure Development (ORIO). These programs did not result from water supply and sanitation policy but do contribute to the realization of the 50 million target figure.

The goal of the Development-Related Export Transactions program (ORET) is to strengthen sustainable economic development and the entrepreneurial climate in developing countries through a donation for the purchase of capital goods, services or works. The program provides subsidy for public infrastructure that is not commercially viable or financeable. This can be health care, transportation or water supply and sanitation projects. The instrument was available to Dutch companies that possess distinctive and competitive knowledge and skills. Management and control of the ORET program is outsourced to a consortium of two private companies (PricewaterhouseCoopers and Ecorys).²² The Dutch water supply and sanitation sector made frequent use of the ORET financing instrument.

Annex 3 provides an overview of ORET projects in the water supply and sanitation sector. This concerns a total of 42 projects of which 13 in China, 14 in Ghana, 3 in Mozambique and Vietnam and 2 in Albania, Gambia and Niger and 1 in Burkina Faso, Sri Lanka and Sudan. During the last five years most of the projects were financed from the ORET water window, which was established by the Minister for Development Cooperation in the course of 2004 to facilitate investments in the water supply and sanitation sector through soft financing. The development cooperation contribution varies from EUR 156,000 for the supervision of the Water Sector Project in Niger to EUR 24.4 million for the Omdurman water supply in Sudan. The average contribution per project is EUR 10.1 million. The payments took place on the basis of the progress of the financed activities. The payments have risen over the past six years from approximately EUR 10 million in 2004 to EUR 32 million in 2010.²³ Although the ORET program was succeeded by the ORIO program in 2008, expenditures will still be made for the program until 2015/2016.

The ORIO program has a different set-up. In the new set-up the recipient country is responsible for the subsidy request and there must be an explicit poverty component and untied procurement. The maximum subsidy has been increased from EUR 45 million to EUR 60 million, whereby expenses for design and maintenance of works can also be included within the ORIO program. Examples of poverty components are services for slums and water distribution and construction of water points for rural communities. At the time of the review a total of 27 water supply and sanitation projects for a total of over EUR 272 million had been approved. The program is managed by the Economic Information Service (EVD, now part of NL Agency) of the Ministry of Economic Affairs. The activities within the ORIO program at the time of the study had yet to begin. It is anticipated that the annual expenditures for ORET infrastructure will gradually phase out

²² The management and control of the ORET program fell under FMO until 2007.

²³ Expenditures here reflect the expenditures by the program implementer PwC. The actual expenditures by the DDE department differ through the use of advance payments.

and expenditures for the ORIO program will increase. Annex 3 contains an overview of the recipient countries, the number of approved activities, project expenses and the ORIO contribution. Until now EUR 2.8 million has been spent for the ORIO water supply and sanitation projects.²⁴

²⁴ Ministry of Foreign Affairs, Sustainable Economic Development Department (DDE)

Construction of the New El Azab Water treatment plant in Egypt



3.4 Monitoring and evaluation

Paragraph 3.4 covers question 6: In what way have the policy and policy execution been monitored and evaluated?

Monitoring

In practice monitoring concerns mainly following project and program progress and the timely discovery and analysis of factors that influence the planned progress. This task, aimed at direction and supervision, is the responsibility of budget holders, which are the DME, DDD and DVF for the activities funded from the central budget and the embassies for the delegated activities.

The departments and embassies support and supervise the execution of activities generally based on information obtained from progress reports, contacts with implementers and/or discussions with officials at various levels of government. In a number of cases external independent specialists are used for support and supervision, depending on factors such as the issues faced by the projects/programs, the capacity of the departments or posts to provide adequate supervision and the need for an extra source of information.

The IOB *Sector Support to Environment and Water* report established that monitoring by donors at sector level is aimed mainly at complying with agreements that concern institutional and policy changes and too little at ultimate policy execution at local level and from the execution level (IOB, 2008a). The impact evaluations of programs in the four countries with small scale, user-managed water supplies indicate that monitoring by governments and NGOs at local level seldom occurs and is not systematic (IOB 2007, 2008b, IOB/BMZ 2011 and IOB/UNICEF 2011). Initiatives towards improved monitoring have been taken for a number of programs. In relation to this, the so-called sustainability checks in the context of the UNICEF program in Mozambique are a notable initiative (IOB/UNICEF: 127). Another initiative is the development of an information system for monitoring achievable improvements in behavior using observation and behavior scales in the context of the BRAC program in Bangladesh (Karim et al., 2012).

Lack of clarity in project and program documents often hampers monitoring activities. According to HBBZ regulations, for the formulation of a proposed activity the “logical framework approach” must be used, in which inputs, outputs, outcome and impact must be clearly described. On the basis of project and program documents it appears that in practice this approach is not systematically applied, the descriptions are not always clear and the relationships - for example between inputs and outputs/outcome/impact - are often unclear. The impact studies indicate that it is not possible to establish the increase in the number of functioning supplies realized (new and rehabilitated) for successive phases of a project or program on the basis of reports.

As far as the programs by multilateral organizations are concerned, it was assumed that these take care of their own monitoring and evaluation. These organizations, too, suffer from shortcomings in this area. To illustrate, both the external evaluation completed by the World Bank Water and Sanitation Program in 2009 (Universalia, 2009) and the evaluation of the UN HABITAT Water and Sanitation Trust Fund completed in 2011 (Kruse et al., 2011) point at the absence of a clear monitoring and evaluation framework and data.

Monitoring of non-earmarked contributions such as through budget support is limited to following MDG 7c developments per country on the basis of UNICEF/WHO reports in the context of the Joint Monitoring Programme and additional WHO reports (WHO/UN-WATER 2010).

Outcome indicators included in project and program documents - usually concerning health impacts - are almost always qualitative. Some forms of financing and activities lend themselves less to the formulation of quantitative outcome/impact indicators. This is particularly true for budget support, financing of international organizations and institutional support activities. When this is indeed the case there almost always problems concerning availability and reliability of information and the attribution of changes in impact variables to the assistance provided. End reports offer little consolation. In practice the quality of the reports varies and is not safeguarded due to a lack of manpower and experience.

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At an aggregated level DME monitors the realization of targets based on internationally accepted definitions (250 users per water point for rural facilities). Realization figures prior to 2007, that is, from the beginning of the 50 million target in 2004, have not been entered for all activities, making exact realization figures difficult to find. At a central level the monitoring capacity is permanently under pressure, evidenced by the fact that the number of FTEs (2.5) has remained the same in recent years while the volume of expenditures has quadrupled.

Evaluation

Budget holders (departments and embassies) make decisions about individual project and program evaluations. The ministry's Management Information System offers the possibility to include information about planned/executed evaluations when entering projects and programs. This is not required, however, as a result of which there is not a good overview of the number of planned or completed evaluations. A print-out of planned and/or completed evaluations between 2004 and 2010 shows five planned project/activity evaluations at department level, of which it is unclear if these have actually been carried out. At the embassy level this results in only two planned evaluations (in Jakarta in 2012 and Maputo in 2010). An IOB inventory shows that a total of 12 decentralized evaluations were carried out between 2008 and 2010, of which only 1 matches the evaluations shown in the information system. These evaluations are mainly aimed at the information needed for the management of activities that are in progress and are unsuitable as a source of information for policy evaluations aimed at effectiveness.

A number of evaluations of completed projects have been carried out in the context of the ORET program. These evaluations are also unsuitable as a source of information about

effectiveness. The evaluations are limited mainly to direct results (outputs) and the general course of the project.

The IOB impact evaluations that serve as building blocks for this policy evaluation were hampered by the absence of usable baseline data and by the frequent difficulty in finding older documents about the past 10-15 years. The study about policy and policy execution points out that there was and still is a good understanding between the “owners” of the programs and projects (budget holders) and the other parties involved about the goal, approach, set-up, planning and timing of the IOB evaluations. DME used information from the impact studies among others for the Result Reports to Parliament.

3.5 Realization of the target figure

The MDG target figure has been an important motivator for increasing the Dutch contribution to water supply and sanitation. As mentioned in paragraph 3.4, DME monitors the realization of outputs on the basis of internationally accepted definitions. The number of people reached between 2004 and 2011 is estimated by the ministry to be 13 million for drinking water supply and 23 million for sanitation. Realization figures prior to 2007, that is, from the beginning of the 50 million target in 2004, are not available for all activities, making exact realization figures difficult to determine.

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From 2007 DME has tried to systematically keep track of the number of people reached. This works well for some of the programs. As is the case with overviews of expenditures, the great diversity in execution options hampers the gathering of information about realization figures. In practice a clear overview in which all the different channels and attributions are included appears to be very time consuming.

The table below shows the realization of the target figures until 2011 as estimated by the policy department. As the table shows, the information is not complete.

Table 4: Realization of target figure, 2005-2010								
Drinking water realization	2004	2005	2006	2007	2008	2009	2010	Total
Bilateral programs	0	0	0	710,234	651,488	1,975,446	622,631	3,959,800
Multilateral generic contributions	0	493,108	493,108	493,108	493,108	645,768	0	2,618,200
Multilateral programs	0	0	0	427,470	591,916	631,579	324,768	1,972,394
ORET/ORIO/FMO	0	0	0	137,000	447,788	0	39,794	2,730,109
PPP	0	0	0	115,751	3,465	0	0	119,216
NGOs	0	7,025	127,505	245,731	201,212	179,040	131,434	891,947
Emergency aid	0	0	0	0	0	0	0	288,050
Structural macro-support	62,425	72,060	98,934	106,800	0	128,270	0	468,489
Total	62,425	572,193	719,547	2,236,094	2,388,978	3,560,103	1,118,627	13,048,205
Sanitation realization	2004	2005	2006	2007	2008	2009	2010	Total
Bilateral programs	0	0	18,402	2,070,000	4,457,177	6,488,874	3,071,880	16,106,333
Multilateral generic contributions	0	841,198	841,198	841,198	841,198	810,145	0	4,174,936
Multilateral programs	0	0	0	98,786	456,072	508,832	426,432	1,490,122
NGOs	0	0	8,521	395,118	127,884	99,656	180,788	906,906
Structural macro-support	52,021	69,925	82,445	87,000	0	84,964	0	376,355
Total	52,021	911,123	950,566	3,492,101	5,882,331	7,992,471	3,679,100	23,054,651

Source: Ministry of Foreign Affairs, DME

Notable in these figures is the high estimation of the number of people who have obtained access to a sanitary facility. This result can be attributed mainly to the Dutch-supported NGO BRAC's program in rural areas of Bangladesh. The general trend points to the lag in sanitation coverage compared to water supply, as evident from the last JMP report (WHO/UNICEF, 2010). The impact studies carried out by the IOB (IOB 2007, 2008b, 2009, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011) and the recent World Bank evaluation (IEG, 2010) confirm the lag in sanitation coverage.

Agreements have been made with executing agencies about the methodology for calculating the contribution to the target figure. In doing so the definitions were in line with those for improved water sources and basic sanitation used in the UNICEF/WHO Joint Monitoring

Programme. The estimate of the realization figures is based on assumptions with respect to the number of users per water point. A large number of the water supplies are public or are shared by several households. These supplies are based on the international norm of 250 users per water point. This norm is based on each water point's capacity to provide people with enough water. In practice there are significant differences in the number of users per water point. The calculation of the number of beneficiaries based on attribution of general budget support and generic support to IFIs is not based on empirical data collection about realized improved water sources and sanitation facilities.

Yard connection in Yemen



3.6 Summary

Chapter 3 describes the development cooperation policy for water supply and sanitation executed by the Ministry of Foreign Affairs.

The Netherlands has been providing assistance in this area since the sixties. The fundamental principle has always been that the provision of enough clean water and a suitable toilet are prerequisites for good health and well-being, economic advancement and poverty alleviation. Initially the accent was on physical expansion of infrastructure for water supply. At the end of the eighties the accent was placed on user participation and especially on women as those primarily responsible for water supply and household hygiene, and on management and maintenance of facilities. In the early nineties water supply and sanitation became part of environmental policy. The attention to institutional development for integrated water management and strengthening of the broader institutional context increased. In the nineties the Netherlands supported some 40 countries in this area. From the end of the nineties the number of countries and sectors was limited in the context of a broad restructuring of the development cooperation policy. With the introduction of the sectoral approach the Netherlands concentrated the bilateral assistance in the so-called partner countries that were eligible for structural aid, and there was more emphasis on alignment with national policy and the national institutional frameworks and on harmonization of donor assistance. The water sector was specified as a priority sector for bilateral cooperation in seven of these countries: Bangladesh, Egypt, Yemen, Indonesia, Vietnam, Mozambique and Benin.

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The policy at the basis of the current objective, “a higher percentage of people with sustainable access to safe drinking water and sanitation” went into effect in 2004 and forms part of the Dutch contribution to the specific Millennium Development Goal to halve the proportion of the population that does not have access to safe drinking water and basic sanitation. The policy is aimed at the realization of access to simple sustainable basic facilities for as many poor people as possible who do not have access to safe drinking water and do not have an appropriate toilet. The geographical focus is on Sub-Saharan Africa. The expectation is that this policy will contribute to equal opportunities for women and girls.

The Environment, Water, Climate and Energy Department (DME) is the central point of contact for this policy. The policy is executed through the usual channels for development cooperation: the bilateral channel, the multilateral channel and the private sector. As far as the bilateral activities that can be grouped under a specific embassy are concerned, the financing and monitoring of the activities is in principle delegated to the embassies. Financial resources for the other channels come from the central budgets of DME and from other departments.

The Millennium Development Goals have been an important motivator for the increase in expenditures in this area. The annual expenditures between 2004 and 2010 for water supply and sanitation were nearly quadrupled to over EUR 153 million in 2010, with a peak of nearly EUR 190 million in 2009. The largest portion was spent through the bilateral channel, followed by the multilateral channel and private sector.

The bilateral expenditures delegated to embassies rose from EUR 14 million in 2004 to EUR 75 million in 2010. Next to the seven partner countries, bilateral assistance was given to several other countries in this area.

The central DME budget for this policy increased significantly from EUR 12 million in 2004 to EUR 20 million in 2010, with a peak of EUR 32 million in 2008. Most of the central DME budget went to a number of international and multilateral organizations that are active in the water supply and sanitation sector, among whom the World Bank and regional banks. An important multilateral partner is UNICEF in the context of the UNICEF-Netherlands Partnership Programme for Water and Sanitation. Among the arguments used for the support to multilateral organizations are the availability of extra resources for the sector (through the banks), the position it gives the Netherlands in the most important international forums and networks that bring and keep the water supply and sanitation sector on the international political agenda, and the limited management burden.

A portion of the general Dutch contribution to multilateral organizations such as the World Bank and regional banks is also spent on water supply and sanitation. Furthermore, a broad range of international NGOs that are committed to water supply and sanitation are supported by the central budget. A large portion of these resources goes to the IRC International Water and Sanitation Centre (IRC) in The Hague.

A relatively recent phenomenon in the bilateral assistance relationship with a number of countries, and financed from the central budget, is the public-private partnerships. These are almost exclusively aimed at improvement of urban water supply and sanitation.

From the water window established in 2004 by the Development-Related Export Transactions program (ORET), some EUR 300 million in soft financing was made available for water supply and sanitation investments between 2004 and 2011. The Facility for Infrastructure Development (ORIO), successor to ORET, also financed sector investments.

In practice monitoring concerns mainly the following of projects and programs by the budget holders and the timely discovery and analysis of factors that influence progress. For part of the projects and programs, external independent specialists were used. Evaluations of projects and programs in this area are mainly aimed at the information needs arising from the management of activities in progress and do not lend themselves as an information source for policy evaluation aimed at effectiveness. Impact evaluations are hampered by the absence of usable baseline data and by the difficulty in finding somewhat older documents from the past 10-15 years.

At an aggregated level the DME monitors the realization of the target figure with respect to the increase in the number of people who have obtained access to water supply and improved sanitation facilities. The number of people who has been reached by the ministry between 2004 and 2011 is estimated to be 13 million for water supply and 23 million for sanitation. Realization figures prior to 2007, that is, from the beginning of the 50 million target in 2004, are not available for all activities, making exact realization figures difficult to determine. At a central level the monitoring capacity is permanently under pressure, evidenced by the fact that the number of FTEs (2.5) has remained the same in recent years while the volume of expenditures has nearly quadrupled.

4

Impact and sustainability of results

4.1 Introduction

The Ministry has not formulated rules for measuring the impact of Dutch-assisted programs. In practice the available information about impact appears to be very limited. Against this background the IOB studied the impact of programs in five countries. The reports about the impact studies have been published separately per country (IOB 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011). The findings from the impact studies are compiled in this chapter. The outcomes of several third party evaluations, among which the recent evaluation of the World Bank support to the water sector (IEG, 2010) have also been used for this chapter.

This chapter begins with a short description of the situation prior to the programs reviewed, and of the programs themselves. This is followed by the findings, based on the review questions about impact and sustainability. The paragraphs each begin with an answer to the question, followed by an explanation and further details.

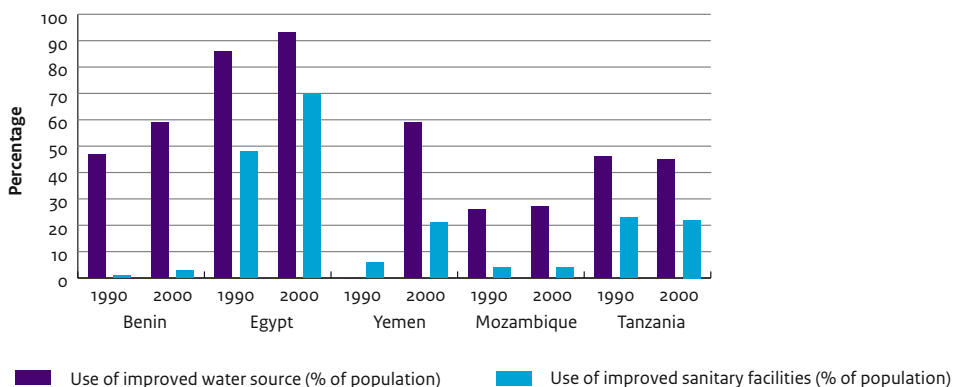
4.2 Issues prior to the interventions

The issues faced in the area of safe drinking water and sanitation prior to the interventions vary per country.

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The figure below provides an overview of the average percentage of the rural population that used an improved drinking water supply and/or improved sanitation facilities in the countries selected for impact evaluation in 1990 and 2000 on the basis of the information provided in the 2010 JMP update. The information is based on national surveys.

Figure 7: Use of improved drinking water sources and sanitary facilities in rural areas in selected countries in 1990 and 2000



Source: WHO/UNICEF 2010²⁵

²⁵ No national information about the use of improved water sources is available for Yemen for 1990.

The baseline situation for the program and project areas investigated also varied per country. In Benin a large proportion of the rural population in the locations where new water points were planned, already had an improved water source. In the program area in Egypt the main problem during the research period was a lack of water pressure in the water distribution system, resulting in most households only being able to get water from the tap at night. In Yemen the program villages initially only had access to water from an unprotected well. In Mozambique and Tanzania most households used available surface water.

Prior to the interventions studied, most of the rural population in Benin defecated in fields. In the program area in Egypt most people had a latrine that leads to a storage tank that has to be emptied frequently, but which is not emptied often enough. In Yemen a large proportion of the rural population in the program area already used a pit latrine. In Mozambique most of the rural population in the program area defecated in fields, while another part of the population used basic latrines made of local materials. In Tanzania most of the population had been using latrines made of local materials since the seventies. In many cases these did not meet the MDG 7 sanitary requirement of a slab for good separation of feces from human contact.

4.3 The evaluated programs

Most of the evaluated programs have allocated water supplies on the basis of community demand. The most common interventions are the construction of water supplies and the establishment of users' associations at communal level and training and education aimed at building and using sanitation facilities and improving hygiene. In Yemen connections to small scale domestic water distribution systems were realized. Toilets were also built in most programs, particularly in institutions such as schools. The program in Egypt was the only one to provide household connections to both a large scale water distribution system and sewerage systems. The governments of the partner countries play a central role in program execution, usually with NGO support. In the case of Benin, municipalities are currently responsible for the management of water supplies. The municipalities subsequently outsource the management to the private sector. In Egypt the large scale water supply and sewerage systems are run by a company that is part of a national holding company.

Table 5 provides a brief summary of the geographical focus of the programs, important elements of the strategy and the interventions of which the effects were measured. With the exception of Yemen the programs reviewed were ongoing during the review period. In Yemen the longer-term impact of completed projects was reviewed.

Table 5: Selected programs for impact evaluation		
Geographical focus	Strategy elements	Interventions of which impact was evaluated
Benin <i>départements</i> Mono-Couffo Collines, Borgou	<ul style="list-style-type: none"> • sector program • demand-driven allocation of water supplies to municipalities • municipalities are responsible and outsource exploitation of water supplies to the private sector • NGOs are contracted for training and education and for facilitation of the implementation process • role of the private sector in maintenance and repair of services 	<ul style="list-style-type: none"> • communal drilled wells equipped with a pump • small scale water distribution systems that serve public water points • latrines (particularly in schools) • training and education aimed at sanitation and hygiene
Egypt Fayoum province	<ul style="list-style-type: none"> • government-run large scale infrastructure for water production, distribution and wastewater processing • technical assistance for institutional development and capacity building 	<ul style="list-style-type: none"> • house connections to water distribution network • water quality control • improvement of water transport and distribution network to increase water pressure • house connections to sewerage systems
Yemen Dhamar and Hodeidah provinces	<ul style="list-style-type: none"> • demand-driven allocation of water supplies to communities • water supplies managed by users' associations • technical assistance for strengthening capacity of local, provincial and national institutions 	<ul style="list-style-type: none"> • small scale domestic water distribution systems provided with water meters • construction of latrines in selected villages and institutions • hygiene training and education directed at women
Mozambique Manica, Sofala and Tete provinces	<ul style="list-style-type: none"> • program executed by UNICEF together with the government • data- and demand-driven allocation of water supplies • water supplies managed by users' associations • NGOs contracted for mobilization of municipalities, for training and education and for facilitating the implementation process • role of the private sector in operation and maintenance of facilities 	<ul style="list-style-type: none"> • communal drilled wells equipped with a pump • Community Approach to Total Sanitation (CATS)*

Table 5: Selected programs for impact evaluation		
Geographical focus	Strategy elements	Interventions of which impact was evaluated
Tanzania Shinyanga region	<ul style="list-style-type: none"> • demand-driven allocation of water supplies • central role for administrative water and sanitation teams at regional and district level in program execution • water supplies managed by users' associations • NGOs involved in quality control of wells and support of users' associations • role of private sector in operation and maintenance of facilities 	<ul style="list-style-type: none"> • communal wells equipped with a pump • Participatory Hygiene And Sanitation Transformation (PHAST)**

* The Community Approach to Total Sanitation (CATS) aims to shock the population and create a feeling of shame and repulsion by, among others, demonstrating the pollution of water and food by fecal matter combined with a system of rewards and recognition for villages where the fields are free of human feces. The objective is to increase the awareness of communities and mobilize them to build and use toilets and improve hygiene.

** Participatory Hygiene and Sanitation Transformation (PHAST) aims to stimulate communities to improve sanitation and hygiene with the help of local volunteers.

The Dutch contribution to the costs of the evaluated programs varies. In Yemen, Mozambique and Tanzania the contribution concerned the greater part of the costs. In Benin and Egypt the Dutch contribution concerned a portion of the costs.

The Netherlands was an important donor to the national water sector program in Benin during the review period. In the program area in Egypt the contribution mainly concerned long-term technical assistance to the responsible government agency and financial assistance for the construction of a water purification plant and an innovative wastewater treatment plant. In all cases the program impact, including the government contributions, users, and where applicable the impact of other donors and NGOs, was analyzed. The impact of the specific Dutch contribution could not be isolated. The Dutch contribution is, however, described in the reports.



Communal waterpoint in Mozambique

4.4 Use of the new, improved water sources

The water supplies have led to a significant increase in the number of people who use an improved water source as primary source. There are, however, also limitations. Some beneficiaries already used an improved source. In all cases of communal water supplies, some households continue to collect additional water from often unsafe sources, sometimes also for drinking water. Some did not switch to the new improved source at all, or only for part of the year. Different factors explain the limited use of improved sources, such as the long distance to the source, the large number of users of the improved water source and proportionately longer waiting times, use of rainwater during the rainy season and incidental reduced water production from wells during the dry season.

In the communities in the sample in Benin, the new water supplies led to an average increase in use by 30% up to 84% of the households over a two-year period. The increase in use of the improved water source in the intervention villages in Yemen was nearly 100%. In the program area in Mozambique the percentage of the population that uses an improved water source increased from 16 to 28% over a two-year period. In the program area in Tanzania the percentage of the population that uses an improved water source as primary water source increased from 10 to 43% between 1990 and 2007.

In Benin 38% of the rural communities in the sample already had access to one or more improved water sources in line with the norm of 250 users per water point, prior to the water interventions reviewed. This can be explained by the allocation of water supplies on the basis of community demand and not or only partially on the basis of the norm. In Egypt most households already had access to a house connection to a water distribution network but in most households no water comes out of the tap as a result of poor water pressure.

The definition for access to drinking water used in the framework of the JMP includes 20 liters per person per day for domestic purposes (drinking, cooking and personal hygiene). Of this at least 5 liters must come from a safe water source for drinking, for washing of food that is not cooked and for hygiene such as hand washing. The amount of water taken from improved water sources is usually more than 5 liters per person per day. The impact studies show that in all cases of communal water supply a part of the population also uses unsafe water, sometimes also for drinking water. The total water consumption is in some cases significantly less than the recommended 20 liters per person per day (such as in rural areas in Yemen and Mozambique). A fluctuating number of households in the communities do not use the improved water source at all or only use it during a part of the year. There are a number of explanations. In Benin many households use rainwater during the rainy season (the primary source for 33% of households and a supplementary source for 38%).

| 72 | Furthermore, unprotected wells are used in addition to the improved water sources. In the program area in Mozambique 31% of the households did not switch to the improved water source at all, mainly because of the distance to the source. Limited use is also explained by the large number of users per water point and the resulting long waiting times at the well. In Tanzania approximately 40% of the user groups in the sample reported that besides protected wells, traditional unimproved sources are used, although this varies per household and per season. This is explained by the fact that wells produce less water during the dry season. Some of the wells in the area even dry up.



Testing water quality in Benin

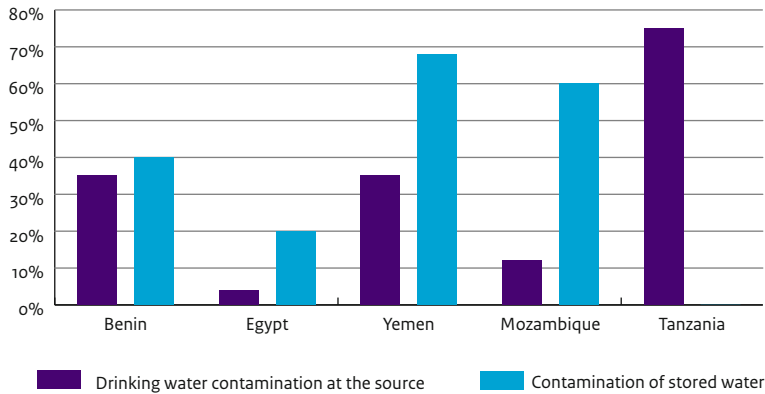
4.5 Drinking water quality

The water from improved sources is not always safe. Water quality tests show that there are often substantial quantities of E. coli in the water, indicating the presence of feces. The more basic the technology for the water supply, the more often the water is polluted. In many cases the pollution occurs or worsens during transport and domestic storage. An experiment in the context of the impact evaluation with an improved water storage facility in Benin shows a strong effect on water quality. In a few cases high fluoride content was detected.

The drinking water quality was tested in all countries.²⁶ The table below shows the presence of E. coli (for explanation see footnote 5). Communal water supplies in Benin, Yemen, Mozambique and Tanzania in particular showed a high incidence of E. coli contamination. In even more cases E. coli was found in water stored in the home at the point of use.

²⁶ Water is tested on the basis of WHO standards for drinking water safety (WHO, 2006).

Figure 8: *E. coli at the water source and at household level*



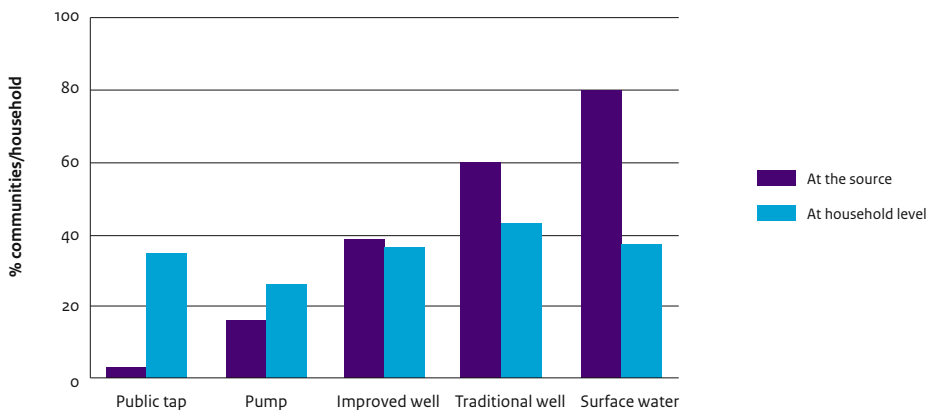
Source: IOB 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011

Note: There is no information available for Tanzania with respect to surface water contamination.

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In Benin the water quality was tested for various types of water sources and for domestic water storage. The following figures illustrate that the more basic the technology, the more often the source is polluted. The figure also shows that ultimately the effect of an improved source on the quality of the drinking water at the point of use has largely disappeared.

Figure 9: *E. coli at various water sources and at household level in Benin*



Source: IOB/BMZ 2011

In the program area in Egypt, water from the Nile is treated in water purification plants, which adequately reduces pollution. In this particular case widespread water pressure problems cause most households to resort to water storage. Of the water tested that was stored in traditional pots, 20% shows pollution with E. coli.

Water pollution at the source is explained among others by the lack of adequate protection of water sources from pollution and by the presence of latrines and cattle nearby wells. Water is polluted during water transport and storage by dirty hands and by pots and containers with which the water is transported and in which the water is stored. Pollution of stored water can also be the result of mixing water from an improved source with water from an unimproved source.

Users of the water supplies indicate that they are aware of the importance of protection and maintenance of wells and treatment of drinking water, but in practice this is not (regularly) done. In Benin, findings point at a reduction in drinking water treatment after construction of improved water supplies.

In Tanzania and Yemen there was a high score on fluoride content at some of the sources (65% of the tests in Tanzania and an average of 13% in Yemen). An overly high level of fluoride can be a health hazard.

Water storage in Egypt





Drinking water in Benin

4.6 Sanitation and hygiene

Execution of integrated policy components directed at sanitation and hygiene is often difficult and impacts of these components on the population have so far been limited. There are, however, some promising results. The CATS approach, introduced by UNICEF and innovative for Mozambique, has resulted in a significant increase in the use of toilets and improved hygiene in a short period of time. The BRAC program in Bangladesh shows a significant increase in a short period of time, in the percentage of the population that has improved sanitation facilities. In both programs the emphasis is on the responsibility of the households for building and improving of their own toilets. It is not yet clear if the results achieved are sustainable. Sanitary facilities built by some programs or by third parties are often perceived by households as being too costly. Investments in sewerage systems and house connections are, still, largely dependent on subsidies. Sanitation and hygiene are often low priorities for governments, as evidenced by the limited efforts and capacity in this area and the implementation of training by donor-financed NGOs.

Since the end of the eighties a hygiene component has been added to the policy objective aimed at drinking water and sanitation. A differentiation can be made between training and education aimed at behavioral change and training (soft components) and the construction of sanitary facilities (hardware). Training and education are primarily aimed at avoiding contact with pathogens, especially those coming from feces, through the use of improved sanitary facilities; hand washing with soap or ash; covering and treating drinking water; safe disposal of babies' and young children's feces; clean storage of kitchen utensils; and safe removal of wastewater and domestic waste.

Most programs try to promote the use of sanitary facilities and hygiene through training and education. This is based on households bearing the related expenses. Furthermore, investments have been made in toilets in public buildings or institutions, such as in schools. These as such are not attributed to the specific MDG 7 goal for improved sanitation. The program in Egypt is the only program of the five programs reviewed that has a substantial component for sanitary infrastructure at household level (sewerage systems, house connections, wastewater treatment plants).

The table below gives an overview of the findings from the partial studies with respect to the impacts of training and education.

	Households remember education and/or training	Demonstrated impact
Benin	35% of locality leaders remembered community worker talking on hygiene in 2009	increase from 2009-2010: <ul style="list-style-type: none"> • safe disposal of waste and children excrements from 10% to 20% of hhs in localities with leader that remembered community worker talking on hygiene
Egypt	no	none
Yemen	a small number of households remember campaigns	none
Mozambique	most households remember training/ education	increase from 2008-2010: <ul style="list-style-type: none"> • latrine use from 41% to 62% hhs of which 13.6% as a result of CATS • washing of hands after toilet use from 20% to 40% hhs • treatment of drinking water from 2% to 18% hhs
Tanzania	one-third of the households remembers training/education	hand washing before meals but not after toilet use

Source: IOB 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011

In Mozambique there was a substantial impact from the innovative Community Approach to Total Sanitation (CATS) and the use of latrines (13.6% increase in two years) and a similar decrease in feces in the field within a relatively short period of two years.²⁷ Many latrines, however, do not yet meet the established criteria (IOB/UNICEF 2011:94). Latrine hygiene, in the sense of the absence of fecal matter, is good in all the communities (94% clean toilets in 2010), and use of soap or ash during

²⁷ The CATS builds on experience that was first gained in Bangladesh with the Community Led Total Sanitation movement. This aims at open defecation free (ODF) communities and as a first step, the use of a safe and sustainable toilet (Movik and Mehta, 2010). A program supported by AusAid, SNV and IRC in five countries in Asia supports local governments to combine CLTS programs with 1) strengthening the local private sector's services for building and improvement of inexpensive, but more safe and sustainable latrines and 2) improvement of own government services in this area, such as education and monitoring.



Open Defecation Free Community in Mozambique

hand washing has increased (40% of households in 2010 compared to 20% in 2008). These changes are most prominent in communities with CATS interventions. In 2010, 20% of households reported to be treating drinking water compared to 2% in 2008. A follow-up impact analysis planned for 2013/2014 will provide more insight into the sustainability of the impacts.

Another Dutch-assisted program initiated in 2007 that shows promising results is the NGO BRAC's WASH program that is being executed in rural areas of Bangladesh with a population of approximately 40 million. The approach for construction and improvements of sanitary facilities encompasses a broad range of activities aimed at awareness and action by the communities and households involved to encourage households to build or improve latrines, in combination with small loans for poorer households, subsidy for the poorest households and loans and training for small local entrepreneurs. The percentage of the population with (improved) sanitary facilities has increased significantly in a short time. Convenience, social status and privacy are important motivators. Quality of improvements, such as hygienic use and maintenance of latrines, and sustainability of improvements require more attention (Gordon-Walker et al., 2011).²⁸

In Benin the reported access to a private toilet in the sample was only 8%. Twelve percent of households reported having access to a shared or public latrine, but only 2% of the households actually used them. A new shared or public toilet, however, does initially result in an increase in use. This finding can be explained by poor maintenance of these latrines. Hygiene is still lagging

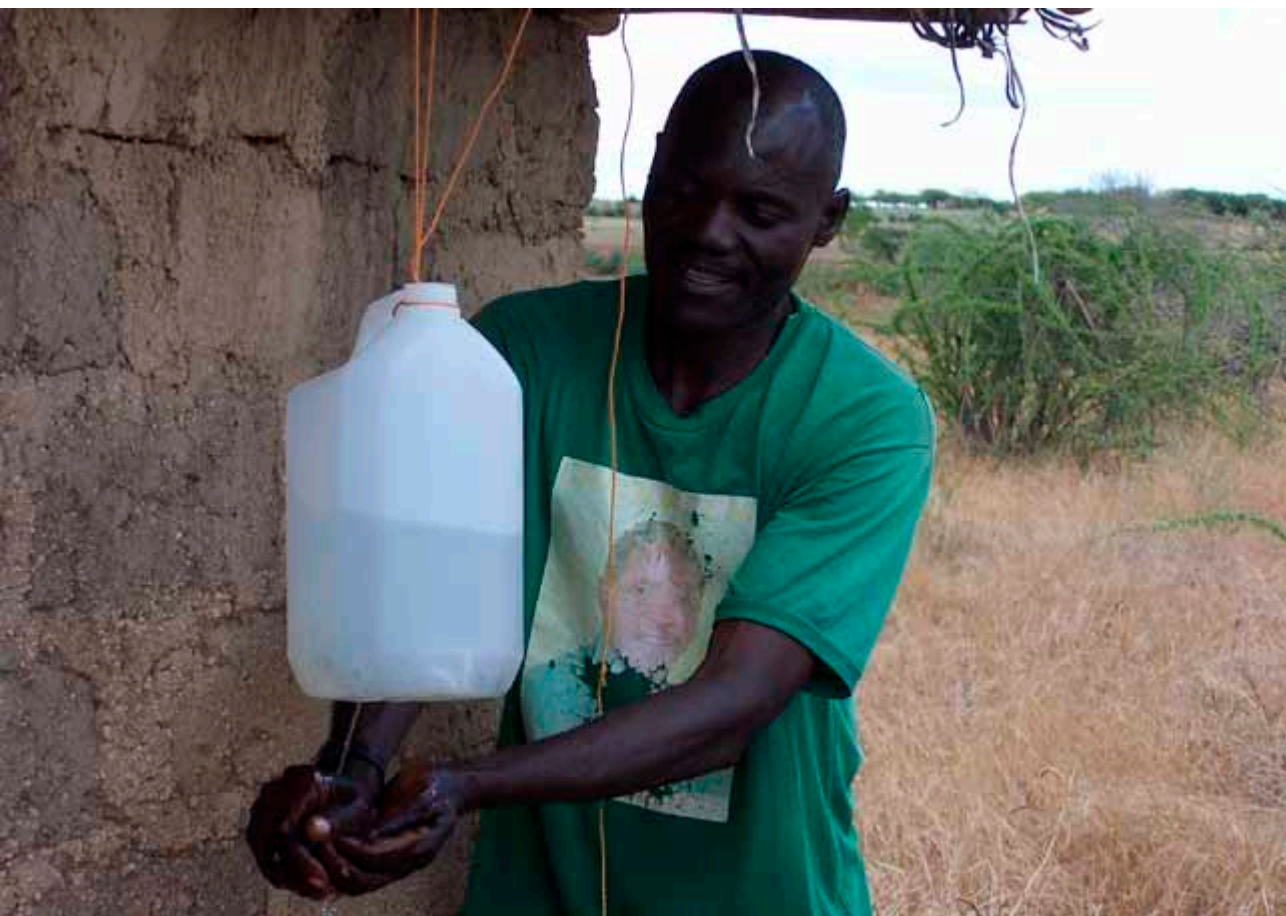
²⁸ Another strategy applied for promoting the construction and use of toilets is a specific strategy aimed at women, for example in Vietnam (Sijbesma et al., 2010)

far behind. Only 10% of households take measures to safely dispose of children's feces; 20% covers water during transport; 25% uses a separate container for drinking water and 10% treats water before drinking. With the construction of improved water supplies, treatment of drinking water has even declined slightly.

In the project area in Yemen no impact from training or education could be shown but there did appear to be a link with water interventions. The percentage of households in the sample with a connection to a water distribution system, that also had a latrine (69%), was significantly higher than the households in similar villages without a connection (48.5%). The percentage of households that scored well on clean toilets and modern water containers was also higher in these villages.

In the program area in Tanzania most households have been using simple latrines made from local materials since the seventies. In many cases these do not entirely meet the sanitary criteria. Improved demonstration latrines introduced by the program did not have a demonstrable effect. While the Water User Groups (WUGs) that manage the water supplies usually appear to have good knowledge about improved sanitation and hygiene, this knowledge is not always applied (for example, hands are often washed before meals but usually not after using the latrine).

Hand washing facility in Tanzania



In the program area in Egypt the proportion of houses with a connection to a sewerage system rose from 3% in 1990 to approximately 21% in 2009, an increase of about 510,000 people. Most connections were realized after 2000. Households with a connection to a sewerage system also wash their hands with soap more often. This finding can be explained by socioeconomic differences with households in villages without a sewerage system. Sewerage system connections have been introduced in larger and wealthier villages. Most households have a storage tank that fills up quickly and must be emptied frequently, which is costly and whereby overflows put pressure on health conditions. The problem is exacerbated by the fact that some of the households (10% of the sample) allow the wastewater to drain into nearby canals, and canal water is sometimes used for domestic purposes.

The underlying studies and other evaluations present cost- and priority-related explanations for the fact that sanitation is lagging behind. The studies indicate that many households perceive the toilets constructed by the programs as being too costly (Benin, Yemen, Tanzania).²⁹ The World Bank evaluation concludes that the willingness of households to pay for sanitation is overestimated. Poor households often cannot afford the sanitary facilities provided. Many countries are reluctant to lend money for sanitation, particularly when the materials to be purchased are not capital intensive. Investments in capital-intensive works, and especially technically complex sewerage systems with wastewater purification plants, are too expensive for many poor countries or areas (IEG, 2010: 56-57).

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The responsible government agencies are often not adequately equipped to handle the construction and maintenance of sanitary facilities (idem: 80). They often also lack the necessary capacity to execute complex training and education aimed at behavioral change. The latter is due to the predominantly technical orientation of these institutes. The cooperation between authorities for water and health also remains limited. Interventions aimed at behavioral change are usually carried out by NGOs (IOB 2008b, IOB/BMZ 2011 and IOB/UNICEF 2011).

²⁹ Cairncross and Valdmanis (2004) present several other factors that influence the choice of households for sanitation. Although the price of sanitary facilities is mentioned most often as a reason for lack of access, also other factors play a role, such as the lack of motivation to invest in real estate on land that does not belong to them, or lack of knowledge concerning the real costs for sanitary facilities (p.29)



Sanitation en hygiène education in Benin

4.7 Time savings and use of time saved

An important positive impact of water supplies is the time savings from collecting water, as a result of the shortened distance to and/or shorter waiting times at the water point. The most important beneficiaries are women and girls. Time saved is mostly used for unpaid activities such as unpaid work on the land. Impact on women's income is as yet limited. Girls have more time for schooling.

As can be seen in the overview below, an important positive impact of the water supplies is the time savings from collecting water. Next to women and girls, men and boys are also involved in collecting water, especially in Yemen, but to a much lesser degree. The time saved is used by women mostly for unpaid activities, among which unpaid economic activities such as collecting firewood and working on the land, often also for self-supporting purposes. Benin was the only country in which 35% of the respondents at household level reported that women also used time saved for income-generating activities.

The impact of improved water supply on the percentage of girls attending school was only evident in the program area in Yemen (4-8% increase in the percentage of girls attending village schools). In Benin and Mozambique there are indications that girls use some of the time saved for education. Women in the sample in Egypt reported benefiting from time saved less than in other countries.

Table 7: Impact of time savings and the use of time saved				
	Average time savings in minutes per trip	Average time needed in minutes per trip after intervention	Use of time saved by women	Impact on participation of girls in education
Benin	15*	16	<ul style="list-style-type: none"> household activities income-generating activities (35% of households) 	43% of children reported using time saved for studies
Egypt**	64	0	<ul style="list-style-type: none"> household activities working on the land relaxation 	no impact on percentage of girls attending school
Yemen**	n.a.	0	<ul style="list-style-type: none"> household activities collecting firewood working on the land 	4-8% higher increase in the percentage of girls attending village schools compared to villages without water network
Mozambique	n.a.	n.a.		no impact on percentage of girls attending school
Tanzania	39	27	<ul style="list-style-type: none"> household activities collecting firewood working on the land 	40% of Water User Groups reported use of time savings by girls to attend school

* Benin: For smaller villages the average time saved per trip was greater (22 minutes) than for large villages (7 minutes). The average time needed after the intervention is 16 minutes, excluding waiting time. Including waiting time this is just over 30 minutes. The average distance is less than 400 meters.

** Egypt and Yemen: reported time saved for the transition from a public water point to a house connection.

Source: IOB 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011

4.8 Health

Positive impacts of the interventions on health are, with the exception of the program in Tanzania, modest or non-existent. Optimal health impacts from drinking water and improved sanitary facilities are only realized with a) sufficient water during the entire year at a shorter distance for improved hygiene and b) safe water for consumption and c) broad access to and hygienic use of toilets. In practice these conditions are rarely met. Furthermore, the health impacts are determined by the severity of the problems. The impact studies only show a demonstrable health impact from training and education in the case of the Community Approach to Total Sanitation in Mozambique. The experiment with a closed container for transport and storage of water in the context of the study in Benin showed an immediate positive impact on the health of children.

Table 8 shows that with the exception of the program in Tanzania, the impacts on the reduction of disease incidence in the programs and projects reviewed are modest. In the program area in Tanzania, 26% of the reduction in the diarrheal disease incidence could be explained by increased use of improved water supplies managed by a Water User Group (WUG). The substantial impact can be explained in part by the severity of the drinking water

problem prior to the water interventions, when the population was still largely dependent on water from holes dug in riverbeds. While an impact from training and education on hygiene could not be shown, children did, for example, wash their hands before meals.

In many villages in the program area in Yemen the incidence of diarrheal disease has increased, but is less (13%) in households that are connected to a water distribution system. This impact can be explained in part by the fact that many more households in these villages use a toilet and the toilets are cleaner. In Egypt the situation at the start was already reasonably good and the three interventions studied - water quality control, improved water pressure and house connections to a sewerage system - all contributed to a modest decrease of 9% of the diarrheal disease incidence. No health impact on the population could be shown in Benin. This is explained by the fact that some of the drinking water becomes polluted during transport and storage and because only a very small proportion of the population uses a toilet. A small scale experiment in the context of the study with improved and clean water storage containers in households in Benin reduced the percentage of households with a child suffering from vomiting within the last four weeks from 7% to 3%. In villages in the Collines region served by a hygiene project or a community worker who had talked about hygiene the percentage was reduced to 4%. In the program area in Mozambique a 3% reduction in the incidence of diarrheal disease in a short period of about two years was shown to be the result of the Community Approach to Total Sanitation. Taking into account that the education and training components of other programs studied did not have a demonstrated effect, this result is remarkable.

Table 8: Health impact	
Benin	No demonstrated effect. A small scale experiment with improved water containers showed a reduction of the percentage of hhs with a child suffering from vomiting within the last four weeks from 7 to 3%.
Egypt	9% reduction in diarrhea, explained by all three interventions reviewed (water quality control, improved water pressure, connection to sewerage system).
Yemen	Most households reported an increase in incidence of diarrhea, but lower incidence (13%) was reported by households with a connection to a water distribution system.
Mozambique	3% reduction of disease incidence, explained by the Community Approach to Total Sanitation.
Tanzania	26% reduction in the incidence of diarrhea, explained by the increased use of an improved water source.

Source: IOB 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011



Water storage experiment in Benin

The previous paragraphs provide insight into the explanatory factors behind the modest health impacts on the population, such as the presence of beneficiaries who already used an improved water source prior to the water intervention; the pollution of the water at the source, and during transport and storage; and additional sometimes use of unsafe sources and sanitation and hygiene that were lagging behind. Other policy-related, institutional and economic factors also play a role, such as a lack of priority and capacity for the components aimed at behavioral change of the population and willingness and ability of the beneficiaries to pay for the intended sanitary facilities.

4.9 Access by poorer households

The water supplies have in general benefited poor communities and households, but the poorest communities have less access to these services. In most programs the households belonging to the larger and relatively wealthier communities have until now had a better chance of obtaining access to an improved water supply than households in smaller and poorer communities. Within rural communities exclusion of households from access to an improved water source does not occur often. Sanitation has until now benefited mostly wealthier villages and households or households with a more than average increase in wealth.

Table 9 provides an overview of the findings with respect to the distribution of benefits, with an emphasis on the access of the poorer parts of the population compared to the wealthier parts.

Table 9: Distribution of facilities		
	Drinking water supply	Sanitary facilities
Benin	Larger and wealthier locations have a greater chance of an improved water source. The poorest quarter of the locations have less chance of an improved water source than the wealthiest quarter.	Wealthier communities had a greater chance of being beneficiaries of a sanitation and hygiene project and/or public latrines than poorer locations.
Egypt	The relationship between wealth and having a house connection has diminished. Nearly all households now have a connection. Water pressure is better in wealthier villages but the difference is minimal.	House connections to a sewerage system were introduced in relatively more wealthy villages. Sanitation problems faced by the rest of the population as a result of overflowing storage tanks and drains into canals get very little attention.
Yemen	Small communities have less chance of a private connection to a water distribution system. Within communities themselves households are seldom excluded. Nearly half of the respondents indicated that there were some households that did not have to pay for water.	Households with a connection to a water distribution system more often have a toilet.
Mozambique	Wealth does not play a role in access to improved water sources.	There is an increase in ownership and use of toilets, particularly in households with a higher than average increase in wealth.
Tanzania	50% of the users' groups reported that not all households are members of a Water User Group and that those who are not members also do not have access to the improved water source.	Nearly all households use a toilet built with local materials.

Source: IOB 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011

As indicated in the overview above, households in Benin that belong to the larger and wealthier communities or villages have a greater chance of access to an improved water source than smaller, often more remote villages. This can be explained by the fact that it is easier for these communities to pay the requested contribution for the construction of the facilities. For the program area in Egypt the findings indicate that the relationship between wealth and having a house connection to the water distribution network has diminished. At the time of the study more than 90% of the households had a house connection. Households belonging to larger communities in Yemen also had a greater chance for a private connection to a water distribution system. The demand-driven selection of beneficiary villages also has a political dimension, whereby some communities benefited from contacts and capacities of their leaders while others suffered from a lack of leadership and/or local conflicts.

Most of the studies show that within rural communities with drinking water supplies, the majority of households have access to the water supply. An exception is the program area in

Tanzania. Just under half of the Water User Groups reported that not all households are members and that non-members did not have access. The characteristics of these households were not systematically studied. In some interviews it appeared that households that were not members were migrants who had recently moved to the area.

As mentioned in paragraph 4.6, the impact analysis of the program in Egypt shows that households in the wealthier communities have a greater chance of having a connection to the sewerage system. That is where the systems have been constructed up to now. In Mozambique the analysis shows an increase in ownership and use of latrines in households with a higher than average increase in wealth.

4.10 Development opportunities of women and girls

Women play a central role in collecting and often also paying for drinking water. Next to workload reduction and time savings, positive results have been achieved with promoting the participation of women in programs and their capacity for management of water programs, especially in Mozambique and Tanzania. In most countries a number of women are involved in execution of sanitation- and hygiene-related components, as paid project or NGO employees or as volunteers. However, this does not guarantee opportunities for development. Benin was the only country in which a substantial number of respondents reported that women used time saved, in addition to unpaid activities, for income-generating activities. In Yemen a small, gradual impact could be shown on the participation of girls in education. In Benin and Tanzania it was reported that girls used some of the time saved to study or to go to school.³⁰

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The impact studies indicate that particularly in Mozambique and Tanzania participation of women in the management of water supplies has increased. In many water committees the number of women and men participating is nearly equal. An external monitoring report from the BRAC program in Bangladesh points at more or less equal participation in village committees for drinking water and sanitation (Mooijman and Ahsan, 2011). NGOs are contracted that often work with female staff for executing tasks. In Yemen local women are hired specifically to promote the role of women in the improvement of hygiene and sanitation. Focus group discussions with women indicate that the participation of women in water committees and in program execution does not guarantee that the specific needs of women will be taken into account, for example, doing everything possible to quickly repair broken water supplies.

Table 7 in paragraph 4.7 shows that time saved by women is mainly used for unpaid activities, including economic activities such as collecting firewood and working on the land. Benin was the only country in which one-third of the respondents reported that women used time saved for income-generating activities. Another study shows that the impacts of time savings on women's income can be improved by linking them to development projects for

³⁰ Due to the often greater demands for privacy women often have to walk further or sometimes only defecate after dark, adjusting their eating and drinking habits accordingly with possible health risks as a result (Sijbesma, 1998). This problem and the related impacts of sanitation on health as well as social and economic impacts, were not reviewed in the impact studies.

economic development aimed at women (Sijbesma et al., 2009). The same table 7 shows that the proof of impact of interventions on the percentage of girls attending village schools is limited to a small impact on the percentage of school-aged girls attending village schools in Yemen. Furthermore, 40% of the children in the sample in Benin and one-third of the users' committees in the program area in Tanzania reported that some of the time saved is used for studies or for attending school.

Women and children collecting water in Tanzania



4.11 Sustainability of results

The availability of functioning water supplies is reasonably assured for the short term. The capacity and government and NGO resources necessary to ensure community water supply and sanitation, however, fall short. The role of the private sector is limited. Partial subsidies continue to be necessary. Sustainability of sanitation and improved hygiene are largely dependent on the fundamental conviction and possibilities and willingness of the people themselves to pay for these and to make the improved practices part of their everyday lives.

Lack of sustainability of water supply has been a cause for concern for a long time. As mentioned in chapter 2, a number of principles aimed at sustainability of water supplies were accepted - the so-called Dublin Principles. These emphasize participation of users in the financing and management of facilities and the importance of water as an economic good for which the costs should be borne by the end users.

As mentioned in paragraph 1.3, various sets of factors have been identified that determine sustainability: technical (quality infrastructure, maintenance), financial/economic (willingness and availability of resources for costs of maintenance, repairs and replacements), ecological factors (such as in relation to availability and quality of groundwater) and related institutional and political-administrative factors. The latter often play the largest role and have received the most attention in the studies. The World Bank evaluation confirms that institutional weaknesses are often the cause of project failures in this area (IEG, 2010: 49).

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Institutional factors

At the time of the studies most of the water supplies in the samples were functioning. For communal water supplies the functioning is often explained by the presence of a users' association for management of the supplies. Nevertheless, over the years an increasing number of the facilities fall into disrepair. The contribution of (local or regional) governments to service provision has been limited up to now due to a lack of capacity, experience and resources. Local governments often depend on local NGOs to mobilize local communities and for training and education, but future financing of these organizations is not ensured. The contribution from the private sector has been limited up to now because investments and service provision in this area is often not commercially attractive.

The percentage of functioning communal water supplies has increased over the years and was reasonably high in the samples in the program areas during the review (between 80 and 90% of the supplies). The high percentage is explained by factors such as the presence of a users' association (especially Yemen, Tanzania, Mozambique and to a lesser extent Benin), the presence of well-organized communities and leadership (Yemen), the absence of alternative improved sources (Egypt, Yemen, Tanzania), because a large proportion of the supplies is relatively new (especially Mozambique), and because supplies that have fallen into disrepair are rehabilitated by the government with donor support (especially in Benin, Mozambique). As mentioned earlier, the program area in Egypt was faced with low water pressure. Only 10% of the households indicated that they did not have a water pressure problem. Eighty-one

percent of the households only had enough pressure in the water connection at night. The water supplies are subject to wear and tear and break down in time. In Benin 20% of the water supplies break down within five years. This percentage is high compared to other countries. In Yemen, for example, 80% of the supplies realized were still functioning 10 years after the end of the project. Factors that can explain these differences are the traditionally stronger community organization in rural areas and the lack of alternative source in Yemen, while in Benin other sources are available in many communities. Explanations for the breaking down of services are often a combination of factors such as poor maintenance, limited availability of technicians for maintenance and/or repair, poor management and in some cases, conflicts between user groups or within water committees. In Benin problems with the quality of the constructed infrastructure were also mentioned.

Waterpump operator in Yemen



In Egypt the institutional sustainability of the large scale water supplies is reasonably secure. The systems have been strengthened for commercial use and with Dutch technical assistance and the costs have been reduced.

User groups for operation and maintenance of communal water supplies are often very motivated, but not always in a position to manage the systems autonomously and to solve all the problems that occur. With the exception of Egypt the policy is executed in a context of decentralization of responsibilities to lower levels of government. The studies indicate that local governments are generally rather inexperienced and are still in the middle of a capacity building process. The World Bank evaluation indicates that the water projects that are executed in a context of administrative decentralization had difficulty meeting expectations. In cases in which the available budget and authority were in line with responsibilities, projects showed positive results (IEG, 2010: xiv). In Yemen the capacity of the local levels of government is still very weak and the quality of the relationships with the branch organizations of the national authority for rural drinking water and sanitation varies. The local governments in Benin, Mozambique and Tanzania are also in a capacity building phase. For Benin the findings of the impact study point at inadequate government supervision of the enforcement of regulations with respect to the services provided by the private sector, such as guarantees for new systems and the sharing of information about exploitation of services. Most local governments do little to monitor the organizations that manage facilities to help them solve problems they cannot solve themselves. Mechanisms for accountability to the users/consumers are hardly developed. Capacity for finding solutions to water quality and environment problems (such as water wells drying up) is still lacking. Consequences of climate change have hardly been considered.³¹

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In most countries lower levels of government are strongly dependent on local NGOs for program execution. In the programs reviewed, the NGOs play a role in promoting user participation and training and education for sanitary facilities and hygiene, in Benin, Mozambique and Tanzania in particular. Government financing of NGOs after donor financing has ended is not assured in any of the countries. In view of their dependence on donor financing, one can question whether user-managed systems that are dependent on NGOs are the best solution. Improvement and strengthening of local governments and services with a mandate for health education and the facilitation of local processes may not deliver quick results, but could be more sustainable in the long run.

³¹ A study by the international organization WaterAid indicates that budgetary and other conditions necessary for local governments to actually take responsibility for service provision in the area of drinking water and sanitation and to contribute to the realization of the water supply and sanitation MDG are often lacking (WaterAid, 2008).

Initiatives were taken in all the program and project areas to strengthen the role of the private sector, often with limited success (with the exception of the construction of physical infrastructure). For the private sector, investments and service provision in this area are often not interesting from a commercial point of view. The initiative of the Benin government to allow local governments to contract the private sector for the exploitation of water supplies is under pressure from a loss of profits, particularly from the supplies in smaller, often more remotely located communities and villages that use mostly rainwater during the rainy season.³²

The World Bank evaluation indicates that in most countries water is provided by the government. Participation of the private sector has increased but has, particularly in rural areas, largely not materialized. Where government wants to involve businesses, a well-functioning regulatory system is a necessity. In many cases such a system has not successfully emerged, which has limited the involvement of the private sector (IEG, 2010: xiv).

Clarity as to the roles and responsibilities of the various actors and institutions involved has in general increased. Project, government and/or NGO initiatives aimed at information exchange, coordination and cooperation between government, businesses, NGOs and end user interest groups can contribute to mutual trust and problem approach. In most programs efforts focused on this, also for the longer-term security of water supplies, are lacking. The program in Tanzania is a good example of an approach that is, among others, aimed at clarifying and strengthening relationships between government, businesses and NGOs (IOB, 2007).

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Financial-economic factors

User contributions and income from water are often not sufficient for major repairs and replacement of infrastructure in the long term. It is not clear whether the government can and will bear these costs in the long term. The role of the private sector is limited by unattractive conditions. Many households in rural areas perceive improved sanitation as being too expensive.

In most situations studied, the combination of user contributions and income from the sale of water is enough to pay for maintenance and small repairs. Many user associations did not, however, appear to be in a position to save for larger repairs and replacement of expensive parts of the infrastructure. It is therefore not realistic to assume that water supplies in rural areas can be maintained for the longer term in rural areas without (partial) subsidies. The World Bank evaluation also indicates that the user associations have not performed well with respect to cost coverage (limited to management and maintenance) (IEG, 2010: 51).

³² A World Bank desk study argues that local private operators for rural water supplies can offer hope (World Bank, 2010). There are also indications that the development of marketing capacities for small providers of products and services in this area, as part of their business, can contribute to sustainable improvements (Sijbesma et al., 2010).

As explained in the section about institutional factors, the contribution of the private sector to economic sustainability of water supplies in rural areas through investments in services for maintenance, repair and exploitation of small scale supplies has been limited until now, because these are often not commercially attractive.

As indicated in paragraph 4.6, households perceive the sanitation provided by programs as being too expensive. In Egypt the level of investments and operational subsidies for investments in sewerage systems and wastewater treatment for the future is not ensured and dependent on further economic development. Low tariffs put further pressure on financial sustainability and furthermore contribute, in combination with a fast growing population, to an increased demand and possibly in the future unsustainably high water consumption. ORET reports also indicate poor financial sustainability of large scale infrastructure interventions as structural point of attention.

Invoice for water in Yemen



The World Bank evaluation reports that economic analyses have only been carried out for one-third of the drinking water supply projects and fewer than half of the projects for sewerage systems and wastewater treatment, and that the majority of these projects did not meet their economic targets (IEG, 2010: 58).

Ecological factors

The most important ecological factor that came forth from the studies is the availability of (ground) water. In Yemen and Tanzania some of the wells dried up as a result of a diminishing groundwater levels. In Egypt the water supply is vulnerable due to the dependency on water from the Nile. Increasing problems with the availability of groundwater are anticipated for parts of Benin and in Mozambique the necessary groundwater for drilled wells is not available everywhere. Very little thought has been given to the effects of climate change.

Table 10: Sustainability of water and sanitation per country	
Benin	<ul style="list-style-type: none">• 20% of the water supplies in the study fell out of use within five years;• A large number of the water supplies have been rehabilitated by the government with donor funding• The policies and roles and responsibilities of beneficiaries are clear;• Trust of the users/consumers in the governments and the private sector that run water supplies is low in many cases;• Responsibility of governments for supervision of water companies is relatively new and resources and capacity are limited. The accountability function is as yet underdeveloped;• Exploitation of rural water supplies by the private sector is new and the businesses still have little experience;• Regulations for the private sector with respect to guarantees for the technical quality of systems and exploitation of facilities are not always adhered to and there are no sanctions;• Income from the sale of water is not enough for major repairs and long-term replacement of infrastructure;• Some of the water supplies run by the private sector are not profitable, particularly in remote areas and where people use mostly rainwater during the rainy season;• NGOs play an important role in facilitating the execution and in training and education, but future financing of NGOs and these activities is not guaranteed;• The collection of and payment for water is mostly women's business. Participation of women in local structures is, however, noticeably low. The impact evaluation did not provide evidence that serious efforts are being made towards participation of end user groups and protection of consumer interests.
Egypt	<ul style="list-style-type: none">• Institutional and financial sustainability of the businesses responsible for the exploitation of the facilities is reasonably assured, depending on further stability and economic development. Relationships with local government and NGOs that play a role in solving infrastructure and service provision problems are often poorly developed;• Tariffs set by the national government put cost coverage, especially for sewerage systems, under pressure;• Economic sustainability at the level of investments for sewerage systems at the time of the study and operational subsidies was not ensured;• Availability of enough water, in part in view of the increased demand and high consumption, is a point of attention;• Many consumers are not satisfied with the services provided, especially as a result of limited water pressure and poor sanitary facilities. This puts pressure on the willingness to pay (more) for services provided.

Yemen

- 10 years after construction approximately 85% of the realized water networks were still functioning. The number that is no longer functioning is slowly increasing, especially in villages without a water committee. The increase can be attributed to poor management, lack of resources for expensive repairs and replacement, and conflicts;
- Roles and responsibilities at community level are clear, but the functioning of Water User Associations and management committees are gradually showing some erosion;
- Relationships between the technical role of the provincial branch agencies of the national authority for the rural supplies and the planning, facilitating and monitoring role of local authorities are becoming increasingly clear for all parties, but the quality of the mutual relationships varies and the necessary capacity for policy execution is insufficient;
- Resources for major repairs and replacement of infrastructure is lacking in places;
- Provisions for institutional maintenance by the Water User Associations and for monitoring and finding solutions for problems that undermine sustainability are also lacking.

Mozambique

- Overall clear policy and institutional framework;
- Good progress in the percentage of functioning supplies (from 54 to 82% in two years) in the presence of a users' association in which both men and women participate; percentage of organizations with a maintenance group; payment for water;
- Capacity of local governments for financing and policy execution is still very limited;
- Private sector cannot adequately perform its role in providing repair services due to unattractive market conditions;
- NGOs play a key role in mobilization and support of local communities and development of user associations. Future financing for these associations is not guaranteed;
- User contributions for financing infrastructure and water proceeds are not enough for major repairs and replacement of infrastructure;
- Strengthening of user associations and institutional maintenance is largely dependent on NGOs temporarily financed by donors.

Tanzania

- Good progress in the percentage of functioning services (approximately 90% at the time of the study);
- Step-by-step approach contributed to clear roles and capacity of users' associations, governments involved and the private sector;
- Approach is integrated into the local government's program cycle;
- Local governments have a central role in the execution of policy through administrative water and sanitation teams;
- Capacity at all levels – regional, district and Water User Group – has been strengthened as was evident from increased speed of execution/implementation and increase in the number of functioning water supplies;
- Breaking down of some of the services is explained by factors such as weak management at times, lack of resources for expensive repairs and replacements, and sometimes conflicts;
- User contributions to costs and income from water are not sufficient to cover the costs of expensive repairs and replacement of infrastructure;
- At the time of the study there was not yet an adequate solution for necessary repair services;
- A pragmatic approach and structure for institutional maintenance and support of Water User Groups in solving problems they cannot solve alone were lacking;
- Availability of sufficient groundwater is a problem for some of the constructed wells;
- Monitoring was mainly aimed at the short-term realization of water supplies and Water User Groups and seldom at local institutional and other constraints that put pressure on the sustainability the water supplies.

4.12 Summary

The Ministry of Foreign Affairs has not established rules for measuring impact of Dutch-assisted programs. In practice the available information about impact appears to be very limited. Against this background, IOB has studied the impact of programs in five countries – Benin, Egypt, Yemen, Mozambique and Tanzania. The evaluations provide a broad impression of the effects of programs in rural areas of Sub-Saharan Africa in particular. Results from third-party evaluations were also used.

Most of the programs evaluated are characterized by allocation of drinking water supplies on the basis of community demand. The most common interventions are the construction of basic water supplies at community level and training and education aimed at building and use of toilets and better hygiene. In Yemen private domestic small scale water distribution systems were realized. Most programs also built toilets, particularly in institutions such as schools. The program in Egypt was the only one to provide house connections to both a large scale water distribution system as sewerage systems. Most communal water supplies are managed by users' associations. The governments of the partner countries play a central role in program execution, usually supported by NGOs. In the case of Benin, governments have been responsible for managing and maintaining rural water supplies for the past several years. The management is then outsourced to the private sector. In Egypt the large scale drinking water and sewerage systems are run by a company that is part of a national holding company.

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The impact studies confirm that the new drinking water supplies have led to a significant increase in the number of people who use an improved water source as primary source. There are limitations, however. Some beneficiaries already used an improved water source. In all cases of communal water supplies a large number of the households collect additional water from less safe traditional sources, sometimes also for drinking. A fluctuating number of households did not use the improved water source at all or only used it during a part of the year. This is attributable to various factors such as the distance to the water source, the sometimes large number of users of the improved water source and proportionately longer waiting times, use of rainwater during the rainy season and reduced water production from wells during the dry season.

Execution of integrated policy aimed at sanitation and hygiene components is often laborious and impacts of these components on the population have up to now usually been limited. There are, however, some promising results. The CATS approach, introduced by UNICEF and innovative for Mozambique, has resulted in a significant increase in the use of toilets and improved hygiene in a short period of time. The BRAC program in Bangladesh also shows a significant increase in a relatively short period of time, in the use of toilets. In both programs the emphasis is on the responsibility of the communities and households themselves for building and improving their own toilets and improved hygiene. Convenience, social status and privacy are important motivators. It is not yet clear to what degree these results are sustainable. Many households in other programs perceive the costs of sanitary facilities constructed by others as being too high. Investments in sewerage

systems and house connections usually benefit relatively wealthier households and are until now strongly dependent on subsidies. Sanitation and hygiene often have a low priority in governments, as evidenced by the limited investments and capacity in this area. In practice training and education and facilitation of execution at the local level is usually done by NGOs.

An important positive effect is time savings gained from water collection, as a result of a reduced distance to and/or shorter waiting times at the water points. The most important beneficiaries are women and girls. The time saved is mostly used for unpaid activities. Next to reduced workloads and time savings, positive results have been achieved with the promotion of the participation and capacity of women for management of drinking water supplies, particularly in Mozambique and Tanzania. These results do not yet contribute significantly to their development. In most countries a number of women are involved in the execution of sanitation and hygiene-related components, as paid NGO project employee or as volunteer. Benin was the only country in which a substantial number of the respondents reported that women used time saved for income-generating activities, in addition to household activities and unpaid work on the land. The impact analyses only showed an effect on the percentage of girls attending (village) schools in the project area in Yemen. In Benin and Tanzania a large proportion of the respondents reported that girls used time saved for studies or to attend school.

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Positive impacts of health interventions are, with a few exceptions, modest or non-existent. Optimal health impacts from drinking water and sanitation are realized with a) sufficient water during the entire year at a shorter distance for improved hygiene and b) safe water for consumption and c) broad access to and hygienic use of toilets. Interventions aimed at this can strengthen one another's effects. In practice these conditions are rarely met. Furthermore, the health impacts are determined by the severity of the problems. The impact studies only show a demonstrable health impact from training and education in the case of the Community Approach to Total Sanitation in Mozambique. A small scale experiment with improved transport and storage systems in the context of the impact study in Benin showed an immediate positive impact on the health of children.

The availability of functioning drinking water supplies for the short term has improved over the years and is reasonably assured. The capacity and resources needed from governments and NGOs to secure the future of the communal water supplies and sanitation, however, are not sufficient. For communal water supplies, the functioning is often explained by the presence of a users' association. Over the years however, an (increasing) number of the water supplies break down. The contribution of local governments to ensure the water supplies has until now been limited by a lack of capacity, experience and resources. Lower levels of government often depend on local NGOs to mobilize local governments for training and education, but future financing of these organizations is not guaranteed. Various initiatives have been taken to promote the role of the private sector in drinking water and sanitation but this role often remains limited, particularly in rural areas because investments and the services provision are often not commercially attractive. User contributions and income from water are usually sufficient for maintenance and minor repairs but

often not for major repairs and replacement of infrastructure in the long term. It is not clear whether the government can and will bear these costs in the future. The sustainability of improved sanitation and hygiene is largely dependent on the fundamental convictions and possibilities and willingness of the people to pay for this and to make the improved practices part of their daily lives.

5

Policy Efficiency

5.1 Introduction

The following questions are addressed in this chapter:

- How do the costs of the facilities realized relate to the benchmarks used and the benefits achieved?
- Was the policy executed efficiently?
- Has monitoring and evaluation contributed to efficient policy execution?

Policy efficiency is defined as the degree to which the direct results achieved – the outputs – measure up against the costs of the technology selected, the input, and the way these are put into effect. Available information about costs, among which the contributions from the target group, governments and other donors, is unfortunately limited. The costs of facilities, based on available information, were compared with the unit price used by the Ministry of Foreign Affairs to be able to gain at least some insight into efficiency. This unit price does not take into account costs of improved hygiene, maintenance and repair and replacement of parts, nor the costs of training and education, capacity building and technical and institutional maintenance. Due to the lack of information about the costs of the selected means and information for calculating benefits as a result of reduced incidence of disease and time savings, calculations of cost effectiveness were also limited. The available calculations are presented in paragraph 5.2. Aspects of policy execution and monitoring and evaluation that influence efficiency are also discussed.

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5.2 Costs and benefits of drinking water and sanitation facilities

Costs per person of drinking water supplies vary, depending on the chosen technology and the number of users per water supply. The costs of basic water supplies are often somewhat lower than the unit price used by the Ministry of Foreign Affairs. House connections cost significantly more. Simple water supply technology often is at the expense of the quality of the water supplied. Costs incurred by households themselves for building their own toilets with local materials are considerably lower, but these facilities often do not meet the sanitation criteria entirely. The unit price is a bit low for the toilets that are built by programs. The costs of these facilities are too high for many households. The generally limited impacts of the programs reviewed on health and development and the benefits (to the extent that these could be calculated) of reduced disease incidence and income from time savings indicate moderate cost effectiveness, with the exception of the program in Tanzania.

Costs of water supplies

On the basis of available information from Netherlands-supported programs the ministry has calculated an average amount of EUR 33 per person for construction of basic improved water supply and EUR 10 per person for sanitary facilities.³³ On the basis of amounts used by multilateral organizations a decision was made to apply an average unit price of EUR 25 per person for drinking water and EUR 20 for sanitary facilities. The total unit price of EUR 45 for drinking water and sanitation is used for the allocation of the number of basic water

³³ These low costs for sanitary facilities are in part determined by the low costs of large programs in rural areas in Asia (Vietnam and Bangladesh) (Ministry of Foreign Affairs, 2008a).

supplies and sanitary facilities realized with Dutch support through indirect contributions (budget support and generic multilateral contributions).³⁴

The table below shows that the costs of water supply and sanitation differ per program. The sources for the estimated costs are explained in the footnotes.

Table 11: Costs of water supply and sanitation (in EUR per person)						
Water	Unit price applied	Benin	Mozambique	Yemen	Tanzania	Egypt
Public improved water supply	25					
• Small scale network with public taps		33-43 ³⁶				
• Drill hole fitted with hand- or foot pump		55 ³⁷				
• Drill hole fitted with handpump			21 ³⁸			
• Shallow improved well fitted with handpump					7.85 ³⁹	
• House connection to water network				80 ⁴⁰		n.a.
Sanitation						
Basic (unimproved) latrine			1.60 ⁴¹		n.a.	
Improved latrine	20	27 ⁴²		36 ⁴³		

Source: IOB 2007, 2008b, 2010, IOB/UNICEF 2011, RNE Cotonou

³⁴ The African Development Bank uses an amount of EUR 39 per person for drinking water supply and basic sanitation in rural and (semi-urban) areas. The World Bank applies a unit price of about EUR 23 per person for drinking water supply and UNICEF calculates an amount of approximately EUR 30 per person for drinking water and basic sanitation (Ministry of Foreign Affairs, 2008a).

³⁵ The calculation for Benin was made on the basis of information provided by the Dutch embassy. EUR 17 million was spent for the installation of 78 small scale water distribution networks. A total of 1,600 public standpipes were connected. Assuming a standard of 250 users, this project reached $(1,600 \times 250 =) 400,000$ people. This would result in an average cost of $(17,000,000/400,000 =)$ EUR 42.50 per person. In 2010, 9 networks were constructed for a total amount of EUR 2.2 million. With these 9, 272 public standpipes were connected, reaching a total of $(272 \times 250 =)$ 68,000 people. The per capita cost of this project amounts to $(2,200,000/68,000 =)$ EUR 32.3 (source: HMA Cotonou). Due to the scattering of some villages over a large area, the 250 users per water point could very well be an overestimate, making the costs shown an underestimate of the costs per person.

³⁶ Calculated costs on the basis of the investment costs for the installation of a handpump (IOB/BMZ, 2011: 117) of FCFA 8,961,000 (EUR 13,661) divided by the average standard number of 250 users = FCFA 35,884 (EUR 54.6).

³⁷ Calculated cost per drill hole in 2010 was EUR 5.255. On the basis of the standard of 250 users per well, the costs are approximately EUR 21 per user.

³⁸ See IOB, 2007: 59.

³⁹ These costs do not concern the costs involved in drilling the drill holes as existing wells were used. These were rehabilitated and fitted with a water pumping system and distribution system to a domestic tap.

⁴⁰ IOB/UNICEF, 2011b: 66.

⁴¹ Households with a private latrine spend an average of EUR 150 for the latrine. Assuming an average household size of 5.6 persons this amounts to EUR 26.70 per person.

⁴² Reported costs of a latrine (EUR 257) divided by the average household size of 7.1 persons.



Exploitant of small piped water supply system in Benin

The costs for the program in Tanzania were calculated at EUR 7.85 per person (shallow wells fitted with a handpump); for Mozambique the costs calculated for construction of improved water supply are EUR 21 per person (drill hole fitted with a handpump). In Benin the costs were noticeably higher at EUR 55 per person for a drill hole fitted with a handpump and EUR 33-43 per person for a small scale network with public taps. With the exception of the sector program in Benin, the difference in costs can be explained by the differences in technology and number of users of the improved water source. The costs of the shallow wells in Tanzania are relatively low. This technology can only be applied, however, if the necessary groundwater is available at a limited depth. The costs of house connections are significantly higher than the unit price used by the ministry. In Yemen the costs per person were lower than the EUR 128⁴³ mentioned in the literature but the costs calculated do not include drilling the drill hole. For Egypt the costs of the investments in physical infrastructure could not be calculated due to a lack of information about investments by the government.

The average costs of latrines realized in the context of the programs reviewed are higher than the unit price used (Yemen EUR 36, Benin EUR 27). The costs of private toilets built by households and made totally or partially of local materials (Mozambique, Tanzania) are much lower, but as mentioned in paragraph 4.6, these often do not meet the established criteria. The costs of latrines built and improved by people themselves with the help of small local entrepreneurs in the context of the BRAC WASH program in Bangladesh are low.

⁴³ Cairncross and Valdmanis, 2004: 47.

The estimated costs vary between EUR 9 and EUR 18 (Mooijman and Ahsan, 2011). A domestic connection to the sewerage system is considerably more expensive than the construction of a simple latrine. The Global WSSA 2000 report gave EUR 157 as the average cost of a connection to the sewerage system (WHO/UNICEF, 2000).

Costs of activities aimed at improving hygiene were not reviewed. These costs are difficult to ascertain due to a lack of reliable and useable data. Besides the costs of training and education there are also costs related to the changes this causes within households (for example, buying soap for hand washing and racks to store kitchen utensils).⁴⁴ Determining maintenance costs is also difficult because this is mainly done on a volunteer basis.⁴⁵ Worldwide averages vary from EUR 0.04 to EUR 1.60 per person per year. In a publication by Cairncross and Valdmanis (2004) an amount of EUR 0.80 per person per year is assumed, which amounts to 2.5% of the calculated capital costs.

The IRC International Water and Sanitation Centre in The Hague has launched the WASHCost initiative for the development of a common framework and guidelines with which cost calculations and comparisons can be streamlined (IRC, 2010). The WASHCost approach uses a life-cycle costs approach, whereby capital costs, operational and small maintenance costs, large repair and replacement costs, and direct and indirect support costs are differentiated.⁴⁶ It is expected that this approach will result in the costs being significantly higher than assumed until now in donor policies and recipient countries. The information about these various types of costs for sustainable water supplies is not available for the programs reviewed.

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Benefits from reduced disease incidence and time saved

The Disability-Adjusted Life Year (DALY) method developed by WHO calculates the years lost due to disease resulting from poor drinking water and sanitation facilities based on the highest life expectancy in the world (currently Japan). A DALY represents a weighted average of less or more serious cases of diarrhea and is equivalent to 0.1 DALY per incident of diarrhea.⁴⁷ Benefits from healthy years saved can be compared against the costs incurred to provide insight into cost effectiveness. Cairncross and Valdmanis (2004) point at programs aimed at hygiene promotion as being on average the most cost effective (3 USD per DALY averted), followed by sanitary facilities (11 USD per DALY averted).

Concrete application of interventions aimed at drinking water, sanitation and hygiene within the programs reviewed, however, show an overall modest effect on health and limited benefits as a result of reduced disease incidence and income from time saved. Calculation of benefits from healthy years saved in the programs reviewed was possible with the available data for the programs in Egypt and Tanzania, as shown in table 12. Information about the costs of the sizeable investments by the government in Egypt is unavailable so it cannot be calculated whether these are higher than the calculated benefits from healthy years saved. For Tanzania the outcome on the basis of the estimated annual benefit of EUR

⁴⁴ Cairncross and Valdmanis, 2004: 37-38.

⁴⁵ Cairncross and Valdmanis, 2004: 6.

⁴⁶ WASHCost, No.3, December 2010; WASHCost, Briefing Note 1, April 2010.

⁴⁷ http://www.who.int/healthinfo/global_burden_disease/GBD2004_DisabilityWeights.pdf.

3.19 million and expenses of approximately EUR 1 million per year is positive. The Benin study does not show a relationship between the improved water supplies and the reduction in the incidence of diarrhea. The information available from Yemen is not suitable for calculation. In the Mozambique study, problems with data collection hampered the analysis of the number of healthy years saved.

Country	Effects measured	Years saved (DALYs) per year	Years saved x annual income (in EUR millions) per year
Benin	1. Improved water supply 2. Sanitation and hygiene promotion	none	none
Egypt	1. Water pressure 2. Water quality 3. Sewerage	22,620	18.1
Yemen	1. Improved water supply 2. Sanitation and hygiene promotion	unknown	unknown
Mozambique⁴⁸	1. Improved water supply 2. Sanitation and hygiene promotion	unknown	unknown
Tanzania⁴⁹	1. Water User Group 2. Improved water supply 3. Sanitation and hygiene promotion	11,726	3.19

Source: IOB 2007, 2008b, 2010, IOB/BMZ 2011 and IOB/UNICEF 2011

The table is based on a number of assumptions. The years “saved” are calculated on the basis of incidence of diarrheal disease. The estimated saving can be an underestimate as other diseases can also be avoided by improved water supply and sanitation. A second assumption is that the user uses the days that he/she would otherwise be ill for income-generating activities. This is only the case for some of the users of the water supply and sanitation facilities.

For Egypt a calculation was made of extra income on an annual basis as a result of time savings from water collection, which amounted to USD 50 million (IOB, 2010). In this case it should be noted that the respondents did not report use of time saved (especially by women) for income-generating activities. Time saved in other areas is also used mostly for unpaid domestic chores and work on the land. An exception is Benin, where a calculation of use of time saved for economic activities results in an annual gain per household of EUR 22 for a first water connection and EUR 9 for an additional water connection (IOB/BMZ,2011).

⁴⁸ Due to inconsistencies in conducting the surveys in Mozambique, it is quite probable that the data regarding the presence of diarrheal disease is a serious underestimate of the actual figures. The calculation of benefits on the basis of DALYs saved therefore does not present a reliable picture.

⁴⁹ For the calculation of healthy years saved in Tanzania, use has been made of dispensary data of diarrhea-incidence in 2003, the earlier mentioned reduction of 26% of diarrhea-incidence due to a new improved water source in the area and the total amount of beneficiaries of improved water sources up until 2007 in the program area (IOB, 2007). Considering the underlying assumptions of this method of calculation, the reported amounts should be regarded as an indication.

5.3 Effectiveness of the policy processes

The effectiveness of policy execution improved in the nineties. The Millennium Development Goals stimulated an increased realization of basic water supply and sanitation. The ministry has committed to a greater result-driven approach. The central directing and monitoring of policy aimed at sustainable impact is, however, hindered by fragmented execution by multiple policy departments and a large number of embassies, in combination with a limited policy and management capacity of the responsible policy department and a certain degree of tension between the thematic policy and the partially overlapping policy aimed at sector support and at development-related export transactions and infrastructure.

As described in paragraph 3.1, the efficiency of the policy execution in the beginning of the nineties was far from optimal. There was too much emphasis on construction of infrastructure and many water supply and sanitation facilities rapidly fell out of use due to poor operation and maintenance. The state was the key player in terms of sector regulation and policy execution, often far below cost and without a clear policy framework, and executed by an inefficient and fragmented collection of organizations and projects. Much has been improved since then, whereby the emphasis was placed on an integrated approach to drinking water supply and sanitation, a country demand driven participatory approach, appropriate technology, the role of users in users' associations, the role of women, decentralized policy execution and user-borne costs. These principles have contributed to efficient policy execution.

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As described in paragraphs 3.3 and 3.5, the MDGs have contributed to an increase in the policy-related efforts and the number of basic water supply and sanitation facilities realized. The expenses have benefited mostly the construction of infrastructure for drinking water supply. The underlying studies indicate that improved water supply infrastructure alone is not enough to guarantee improved health. The existing emphasis on infrastructure for drinking water supply is partly a political and institutional problem. Many of the countries involved have until now shown little willingness to invest in sanitary facilities and “software” such as training and education and facilitating implementation, and to take the necessary measures to do so.

The ministry has made a real effort towards a greater result orientation of the assistance, as evidenced by the results reported (Foreign Affairs, 2005, 2007b, 2009, 2011). Directing and monitoring the execution of the thematic policy by the responsible DME department is, however, hampered by fragmented execution by a large number of budget holders (departments and embassies). In addition staff capacity of DME is permanently under pressure, as demonstrated by the fact that the number of staff positions (2,5) did not increase since 2004 in spite of the quadrupling of the budget.

Directing and monitoring is also hampered by a certain degree of tension between the thematic policy and overlapping policy aimed at sector support and at development-related export transactions and infrastructure. Much of the energy in sector support has gone into new forms of cooperation between donors and the central government in the partner countries. This has strengthened the role of the central government, but participation of

other actors has been neglected (IOB, 2008a). This despite central governments being largely dependent on lower levels of government, NGOs and the private sector for drinking water supply and sanitation. Because of the accent on large scale infrastructure executed by relatively large companies, the instruments for development-related export transactions (ORET) and development-related infrastructure development (ORIO), are often not in harmony with the thematic policy that emphasizes an integrated approach to affordable, sustainable drinking water and sanitation and hygiene for the part of the population that does not have access to services.

5.4 Contribution to monitoring and evaluation

The information available from the ministry's information system as well as monitoring and evaluation have been improved but are not optimal. The responsible policy department has made agreements with implementing agencies about reporting results (outputs) at the level of the end users. The department monitors progress partially on the basis of these reports. Realization figures for the period prior to 2007, that is, from the beginning of the 50 million target in 2004, have not, however, been entered for every activity, which makes precise realization figures difficult to obtain. The information available regarding planned and executed evaluations is not complete. Impact studies are hindered by the absence of usable baseline data and by the fact that particularly older documents, which can provide insight into results over a longer period, are often difficult to find. The impact studies indicate a lack of information about local bottlenecks that undermine or contribute to service provision and sustainability of the water supplies and sanitary facilities. Budget holders use missions by external consultants for managing program and project execution. These missions are useful in themselves but would benefit from more empirical research and improved monitoring and evaluation at the policy target group level.

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The World Bank evaluation shows that the Ministry of Foreign Affairs is not the only organization suffering from inadequate information. The evaluation recommends strengthening of data collection and use so as to gain better insight into the relationship between water, economic development and project results, as well as for monitoring demand-driven management and identifying aspects that are effective or ineffective, with special attention to sustainable financing of facilities (IEG, 2010: xv).

5.5 Summary

Costs per person of the drinking water supplies vary, depending on the technology chosen and the number of users per water supply. The costs of basic communal drinking water supply are often somewhat lower than the unit price of EUR 25 per person used by the Ministry of Foreign Affairs. House connections to a water distribution network are considerably more expensive. Basic technology for water supply can, however, be at the expense of the quality of the water supplied.

A unit price of EUR 20 per person is somewhat low for the sanitary facilities built by programs. The costs of private toilets built entirely or partially by households themselves using local materials are lower, but these often do not meet all the sanitation criteria. The costs of sanitary facilities constructed by programs are perceived as being too high by many households.

The unit price used does not take into account the costs of improved hygiene; maintenance, repair and replacement of parts; training and education; capacity building; and technical and institutional maintenance. These costs are not available for the programs reviewed in the impact studies.

To the extent that benefits resulting from reduced incidence of disease and income from time saved could be calculated, these are, with a few exceptions, limited. The benefits could be increased in a number of cases by shifting the excessive attention to realization of physical infrastructure, to interventions aimed at constructing and improving low cost privately owned toilets and hygiene, improving access for the poorest households and facilitating processes of change.

The efficiency of policy execution improved in the nineties. The MDGs have been an important motivator for increased realization of basic drinking water supply and sanitation. The ministry has committed to a more result oriented approach. Steering and monitoring the efficient execution of the thematic policy by the responsible policy department is, however, hampered by fragmented execution by multiple policy departments and a large number of embassies. In addition this is hampered by a certain degree of tension between the thematic policy and (partially) overlapping policy aimed at sector support and development-related export transactions and infrastructure in combination with limited policy management capacity within the responsible policy department. Monitoring at the level of direct policy results has improved but there is insufficient information about factors that improve or undermine the quality of service provision and sustainable impacts.

Annexes

Annex 1 About IOB

Objectives

The remit of the Policy and Operations Evaluation Department (IOB) is to increase insight into the implementation and effects of Dutch foreign policy. IOB meets the need for the independent evaluation of policy and operations in all the policy fields of the Homogenous Budget for International Cooperation (HGIS). IOB also advises on the planning and implementation of evaluations that are the responsibility of policy departments of the Ministry of Foreign Affairs and embassies of the Kingdom of the Netherlands.

Its evaluations enable the Minister of Foreign Affairs and the Minister for Development Cooperation to account to parliament for policy and the allocation of resources. In addition, the evaluations aim to derive lessons for the future. To this end, efforts are made to incorporate the findings of evaluations of the Ministry of Foreign Affairs' policy cycle. Evaluation reports are used to provide targeted feedback, with a view to improving the formulation and implementation of policy. Insight into the outcomes of implemented policies allows policymakers to devise measures that are more effective and focused.

Organisation and quality assurance

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IOB has a staff of experienced evaluators and its own budget. When carrying out evaluations it calls on assistance from external experts with specialised knowledge of the topic under investigation. To monitor the quality of its evaluations IOB sets up a reference group for each evaluation, which includes not only external experts but also interested parties from within the ministry and other stakeholders. In addition, an Advisory Panel of four independent experts provides feedback and advice on the usefulness and use made of evaluations. The panel's reports are made publicly available and also address topics requested by the ministry or selected by the panel.

Programming of evaluations

IOB consults with the policy departments to draw up a ministry-wide evaluation programme. This rolling multi-annual programme is adjusted annually and included in the Explanatory Memorandum to the ministry's budget. IOB bears final responsibility for the programming of evaluations in development cooperation and advises on the programming of foreign policy evaluations. The themes for evaluation are arrived at in response to requests from parliament and from the ministry, or are selected because they are issues of societal concern. IOB actively coordinates its evaluation programming with that of other donors and development organisations.

Approach and methodology

Initially IOB's activities took the form of separate project evaluations for the Minister for Development Cooperation. Since 1985, evaluations have become more comprehensive,

covering sectors, themes and countries. Moreover, since then, IOB's reports have been submitted to parliament, thus entering the public domain. The review of foreign policy and a reorganisation of the Ministry of Foreign Affairs in 1996 resulted in IOB's remit being extended to cover the entire foreign policy of the Dutch government. In recent years it has extended its partnerships with similar departments in other countries, for instance through joint evaluations and evaluative activities undertaken under the auspices of the OECD-DAC Network on Development Evaluation.

IOB has continuously expanded its methodological repertoire. More emphasis is now given to robust impact evaluations implemented through an approach in which both quantitative and qualitative methods are applied. IOB also undertakes policy reviews as a type of evaluation. Finally, it conducts systematic reviews of available evaluative and research material relating to priority policy areas.

Annex 2 Terms of reference for the policy review

1. Reason for and aim of the policy review

In 2011 a review was planned for the policy that forms the basis for the Ministry of Foreign Affairs goal 'a higher percentage of the population that has access to safe drinking water and sanitation'. This policy forms part of the Dutch contribution to the realization of the Millennium Declaration for poverty alleviation and the stimulation of development adopted by heads of state at the UN Millennium Conference in 2000.

The government-wide Regulation for Periodic Evaluation and Policy Information (RPE 2006) prescribes that a policy review consists of the following components:

1. Description and analysis of the problem that lies at the basis of the policy
2. Description and motives of the role of the government
3. Description of the policy goals reviewed
4. Description of the instruments used and analysis of the effects on society
5. Description of the allocated budgets

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The regulation also determines that, to the extent possible, the policy review should make use of impact evaluations ex post. For the benefit of the policy review, the Policy and Operations Evaluation Department (IOB) carried out five impact evaluations in Benin, Egypt, Yemen, Mozambique and Tanzania respectively. A framework terms of reference was established to this end in 2007. In addition to the impact evaluations in the five countries, the policy review will also be based on a study of the policy and policy execution as well as useful evaluations carried out by other organizations.

On the one hand the policy review serves as a source of information for the justification of the policy execution, and on the other hand as a means to filter out lessons and points of attention for policy improvement.

2. Policy background

2.1 Dutch development cooperation policy for drinking water supply and sanitation

The Netherlands has been involved in stimulating access to drinking water supply and sanitation in developing countries since the 1960s. Over the years the general policy goal has been formulated in many policy documents and in a variety of ways. The main principle has always been that the provision of enough safe water and sanitary facilities are fundamental conditions for health and well-being, economic progress and poverty alleviation.

Attaining the target related to Millennium Development Goal 7c: "to halve, by 2015, the proportion of people without sustainable access to safe water and basic sanitation" lies at the

basis of the policy. In 2004, in the context of the contribution to the MDG 7, this goal was converted into the so-called “50 million target” by the incumbent Minister of Development Cooperation, with the aim of setting a Dutch target of reaching 50 million people with access to improved drinking water and sanitation by 2015.

In a letter to parliament in 2008 the policy is further explained as follows.

1. Principles

Contribution to MDG 7, target 10

This 50 million target contributes to the realization of MDG 7. MDG 7 aims at providing access to both clean drinking water and sanitation. Specifically, realization of this MDG means that worldwide, between 2000 and 2015, 1.1 billion people should gain access to drinking water and 1.6 billion to sanitation. The realization of this goal is monitored by the WHO/UNICEF Joint Monitoring Programme. Currently, from a global perspective, the realization of the goal for drinking water is on schedule but the realization with respect to sanitation lags far behind. In Africa the MDG will not be achieved for either drinking water or sanitation without extra efforts in the short term.

Target group

The target group is poor people who do not yet have access to safe drinking water and improved sanitary facilities.

Program characteristics

The 50 million target is aimed at realizing access to simple and sustainable basic facilities (for example, wells, water kiosks and pit latrines) for the target group. Main criteria have been formulated by the JMP: at least 20 liters of water per person per day whereby the water source should be located at a walking distance of less than 1000 meters from the home. The JMP has defined several types of facilities as “improved” for sanitation. The Netherlands uses these criteria and definitions as their main frame of reference for program development and monitoring but adds criteria in specific situations: for example, in Bangladesh there is a strong emphasis on water quality due to the pollution of water sources with arsenic.

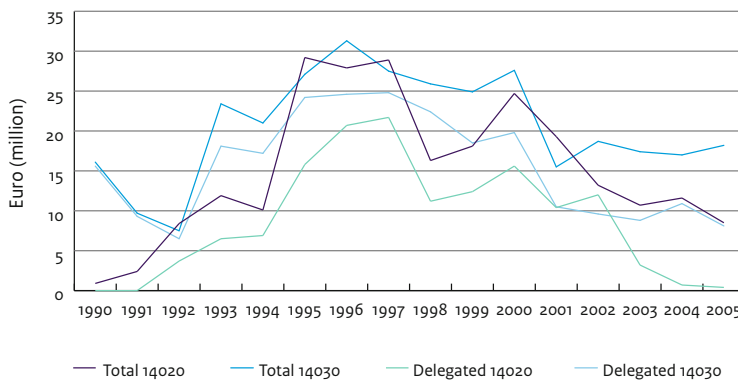
The program focus is on Sub-Saharan Africa. Due to the significant impact of safe drinking water and sanitation on women and girls (education, health, safety and dignity), the program contributes directly to equal opportunities for women and girls.

The cabinet that took office in 2010 set forth the policy aimed at MDG 7, but without the target figure.

2.2 Policy execution

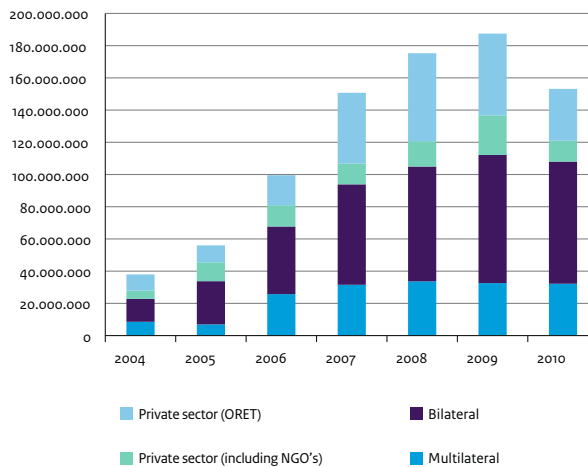
The assistance to drinking water supply and sanitation occurs through a number of channels. The two figures below provide an overview of the development of the expenditures.

Figure 1: Trends in annual expenditures for water supply and sanitation from 1990-2005



Source: Ministry of Foreign Affairs, information system, expenditures: CRS codes 14020 for large water systems and 14030 for small systems.

Figure 2: Distribution of water supply and sanitation expenses, 2004-2010 (in EUR)



Source: IOB reconstruction of expenditures based on CRS codes, ORET reports, CIDIN NGO database and 2009/2010 result reports⁵⁰

⁵⁰ Financing for the ORIO program is not included in this figure because the expenditures for water supply and sanitation projects through 2010 were relatively limited. The multilateral generic resources for 2004 and 2005 are not included in this figure due to the lack of reliable information about the annual expenditures for this category. The multilateral expenditures for 2004 and 2005 are therefore an underestimate of the actual multilateral expenditures in these years.

Bilateral channel

A large proportion of the financing occurs through the bilateral channel. The Netherlands has been assisting some forty countries in the area of drinking water supply and sanitation since the nineties. Most of this financing went to seven countries: India, Bangladesh, Egypt, Yemen, Pakistan, Indonesia and Mozambique. Benin and Tanzania have also received significant contributions since 2004. Most programs and projects are aimed at services in rural areas.

Extra obligations were taken on after the launch of the “50 million target”. Until 2010 this led to a significant increase in the delegated bilateral expenditures. These decreased again in 2010. The bilateral expenditures have risen from EUR 14 million in 2004 to over EUR 75 million in 2010, nearly 50% of the total sector expenditures for that year.

Private sector

The largest amount of financing through the private sector concerns investments through the ORET (and as of 2009, ORIO) program. The aim of this program is to strengthen sustainable economic development and the entrepreneurial climate in developing countries through donations for the purchase of capital goods, services or works. The degree to which the project proposals at ORET and ORIO concern investments in drinking water supply and sanitation differs per year. The opening of the so-called water window in 2005 was a stimulus for drinking water supply and sanitation projects.

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A part of the execution through the private sector occurs through NGOs. These are NGOs that have received either direct financing for execution of a specific program in the area of drinking water supply and sanitation, or subsidy through the Dutch Co-Financing System (MFS) for general program support, which also includes water supply and sanitation programs. In 2008 and 2009 an average of EUR 10 million annually went to directly financed NGOs while approximately EUR 4 million annually was spent through the MFS.⁵¹

Policy execution also takes place through public private partnerships (PPPs), whereby the private sector is given a key role in project formulation and execution. There are currently four PPP agreements for urban drinking water supply: two in Indonesia, one in Mozambique and one in Vietnam.

⁵¹ The sector amounts via MFS organizations are only available for 2008 and 2009 (www.ngo-database.nl). Important to note is that these MFS organizations must secure at least 25% of their financing from other sources. The amount mentioned for this group of NGOs should therefore be seen as an indication.

Multilateral channel

Policy execution also takes place through the multilateral channel. This concerns financing of cooperation between multilateral institutions such as UNICEF's Water, Sanitation and Hygiene (WASH) program and the World Bank Water and Sanitation Program. There is also an amount reserved for drinking water supply and sanitation within the amounts made available by multilateral institutions such as the African and Asian Development Banks and the European Commission. The following large scale multilateral programs were executed in the period between 2004 and 2010:

- UNICEF WASH program (EUR 78.6 million)
- African Development Bank Rural Water Supply and Sanitation Initiative Trust Fund (RWSSI) (EUR 51 million)
- Water Supply and Sanitation Collaborative Council (WSSCC) 2008-2012 (EUR 34.4 million)
- Water Supply and Sanitation Collaborative Council (WSSCC) 2004-2006 (EUR 2.2 million)
- Asian Development Bank; Water Financing Facility (EUR 16 million)
- World Bank Water and Sanitation Programme (WSP) (EUR 15 million)
- UN Secretary General's Advisory Board on Water and Sanitation (UNSGAB) (EUR 3.6 million)
- UN HABITAT Water and Sanitation Trust Fund (EUR 9.3 million)
- UN HABITAT-MEKWATSAN (EUR 4.9 million)

3. Evaluation criteria and questions

The specific goal of the policy review is to provide insight into the efficiency and effectiveness of the policy executed, for purposes of accountability and policy improvement. Effectiveness is defined as the degree to which the direct results of policy – the outputs – have contributed to the sustainable realization of the policy objectives. Efficiency concerns the process of policy development and execution and the level of the costs of the direct results, as well as the benefits.

In line with the RPE the policy review focuses on the following review questions:

1. What is the problem that lies at the basis of the Dutch development policy for drinking water and sanitation?
2. What objectives has the Dutch government formulated for its contribution to solving the problem? What is the policy theory with respect to the realization of the objectives?
3. How is the responsibility for policy and policy execution specified and how has the policy been executed?
4. What activities have been developed?
5. What is the level of the budgets that have been allocated?
6. In what way have the policy and policy execution been monitored and evaluated?
7. What progress has been made towards reaching the targets for access to safe drinking water and sanitation?
8. What is the impact of the Netherlands-supported interventions?
 - a. What was the situation prior to the interventions?
 - b. What are the most important interventions for drinking water and sanitary facilities and for improved hygiene?
 - c. What is the effect of interventions on the use of improved water sources and basic sanitary facilities?
 - d. Do the interventions ensure safe drinking water?
 - e. Have the facilities led to time savings for water collection?
 - f. What is the time saved used for?
 - g. Have the improved facilities led to health improvements for the users?
 - h. Are there differences in the possibility of access to facilities for poorer and better off households?
 - i. Have the facilities led to development opportunities for women and girls?
 - j. Are the results sustainable?
9. What is known about the efficiency of the policy?
10. What lessons can be derived from the findings?
 - a. What is the relationship between the costs of the facilities realized, and the benchmarks used and benefits?
 - b. Was the policy executed with a view to obtain desired effects?
 - c. Did monitoring and/or evaluation contribute to policy execution?
11. What lessons can be derived from the findings?

4. Methods and techniques

The answers to the questions will be based on the following methods and techniques.

Policy, policy execution and target realization (questions 1-7)

The description of the policy and policy execution will take place on the basis of:

1. available documentation such as policy documents, budgets, annual plans and reports and other reports concerning policy execution;
2. inventories and analyses of financial and monitoring information from the management information systems of the Ministry of Foreign Affairs;
3. additional conversations with employees of the departments of the Directorate General for International Cooperation (DGIS).

Impacts (question 8 and sub-questions)

The response to the question about policy impacts will primarily be based on the five impact evaluations executed by the IOB. Three of the five studies concern bilateral projects, one concerns a multi-donor sector program and one concerns a program executed by a multilateral organization (UNICEF). While the impact evaluations cannot be considered entirely representative for all the programs and projects, they do provide broad insight into policy impacts for drinking water and sanitation in rural areas, and especially in Sub-Saharan Africa. Policy reviews and broad program reviews of multilateral and private sector drinking water and sanitation-related activities partially funded by the Netherlands will also be used.

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Impact evaluations

Four groups of related interventions can be distinguished:

- improvement of water supplies: improved water sources and/or distribution, such as water supplies or standpipes at communal and/or household level (hardware);
- improvement of sanitary facilities (hardware) that ensure hygienic separation of feces from human contact, such as flush toilets that are connected to a sewerage system, septic tank or well and latrines with a slab that drain into a pit;
- interventions aimed at drinking water quality that ensure protection or treatment of water against microbiological pollution and/or safe storage at the source or at household level such as water filters, treatment with chlorine, disinfection by sunlight, boiling and pasteurizing;
- hygiene and health training and education and the promotion of specific behavior such as hand washing with soap or ash.

These interventions reduce the risk of internal diseases such as diarrhea, dysentery and cholera by creating barriers for pathogens that are transmitted to the human body from feces by fingers, flies, dirt, food and water. There may also be other factors that make water unsafe, such as excessive levels of fluoride or metal in the drinking water.

Possible patterns as well as differences in results of the impact studies will be studied for the policy review. A mix of quantitative and qualitative methods and techniques were used for the impact evaluations. Changes in impact variables over time in communities and households with interventions and with similar communities and households without interventions were measured and analyzed. Next to quantitative methods, qualitative methods were also used in the impact studies, such as interviews and focus group discussions. The qualitative methods were mostly used for studying the sustainability of the results, and for supplementing the quantitative findings. For more information about the specific methodology used for each impact study, refer to the specific country report.

The impact evaluations in the five selected countries concentrate on the period from 1990 (the internationally agreed starting year for measuring the coverage of the target figures for the Millennium Development Goals) or whatever later point in time the Netherlands-assisted programs commenced. Due to a lack of baseline information from the beginning of the projects or programs, the quantitative measurement of impacts on health for most of the studies concentrates on a baseline study and effects of recent interventions.

Multilateral channel

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The Mozambique country impact study provides insight into the impacts achieved through the UNICEF WASH program (see above). Furthermore, efforts will be made to gain insight into the impacts achieved through the multilateral channel by using available broad policy and program evaluations that have been executed through the multilateral channel. Should additional and more relevant evaluations become available, these too will be used in this review. For lack of information, as there are no reporting requirements for generic contributions to multilateral institutions within the water and sanitation sector, these contributions will be excluded from the review.

Private sector

Financing of drinking water supply and sanitation through the private sector occurs largely through the ORET program for development-related export transactions and ORIO for development-related infrastructure development. To the extent possible, statements about effectiveness will be made on the basis of available reports. To gain insight into the progress of the projects financed by the ORET program, the ORET conducts evaluations of completed projects. While these do not meet IOB guidelines, some indicative statements may be made on the basis of these studies.

As far as the activities conducted by NGOs are concerned, the way in which NGOs that obtained direct financing, contribute to attaining the policy objectives (in terms of the types of activities) will be described. This will be done using appraisal memoranda and annual reports from the organizations concerned.

Efficiency

Efficiency concerns the costs of the water supplies in comparison to the unit price used by the ministry. To the extent possible, program benefits will be calculated and compared to

program costs on the basis of available data. Findings from the partial studies with respect to the policy execution processes will be analyzed for factors that stimulate or hinder policy execution. Furthermore, the contribution of monitoring and evaluation at the various levels to the quality of the policy processes will be reviewed.

Lessons

Points of attention for policy and policy execution have been formulated for each of the impact evaluations in the five countries. Lessons for policy and policy execution will be distilled from the studies for the policy review.

5. Methods and techniques

The IOB is responsible for the evaluation report. Rita Tesselaar is the responsible inspector. Jolijn Engelbertink is the research assistant. Antonie de Kemp and Henri Jorritsma are the IOB co-readers. Furthermore, a reference group comprised of representatives from the policy departments involved and external specialists will comment on the final report. Members of the reference group are:

- Christine Sibjesma, International Water and Sanitation Centre (IRC)
- Jan Willem Gunning, Amsterdam Institute for International Development/Free University of Amsterdam
- Dick van Ginhoven, Environment, Climate, Water and Energy Department
- Pim van der Male, Environment, Climate, Water and Energy Department

Annex 3 ORET and ORIO drinking water supply and sanitation projects

ORET drinking water supply and sanitation projects				
Country	Project name	Exporter	Transaction value (EUR)	ORET contribution (EUR)
Albania	Vlore Water Infrastructure Rehabilitation Project (supervision)	Haskoning Nederland	1,865,000	1,108,976
Albania	Vlore Water Infrastructure Rehabilitation Project	A. Hak International	24,371,000	12,679,500
Burkina Faso	Ouagadougou Water Supply Project Lot 2.3	ASI / SFT	10,853,139	5,426,569
China	Jingmen City No.2 Solid Waste Treatment	DHV	2,800,163	1,171,297
China	Wastewater Treatment Chengdu Sanwayao	DHV	8,596,573	3,438,629
China	Wujin Wastewater Treatment	DHV	2,256,158	1,342,463
China	Zhejiang Huangyan Wastewater Treatment	DHV	4,574,105	2,744,463
China	Tangshan Nanpu Wastewater Treatment Plant	DHV	4,519,651	2,616,497
China	Jieshou Municipal Sewage Treatment Plant	Ondeo Industrial Solutions	4,628,558	2,777,135
China	Huainan City Wastewater Treatment Plant	DHV	4,492,424	2,658,271
China	Huainan Drinking Water Supply Project	DHV	4,477,201	1,567,020
China	Hefei Wangtang Wastewater Treatment Plant	DHV	3,935,335	1,377,367
China	3rd Ph.Nanchan Qingyun Water.Supply Plant	Nijhuis Pompen B.V.	3,912,391	1,369,337
China	Wuwei Wastewater Treatment Plant	DHV	5,053,600	1,768,760
China	Jingzhou Hongguang Wastewater Treatment Plant	DHV	5,883,765	2,048,818
China	Ma'Anshan Wastewater Treatment Plant	DHV	5,626,965	1,969,438
Gambia	Greater Banjul Area Water Supply	Ballast Nedam Africa	33,776,000	17,523,000
Gambia	Greater Banjul Area Water Supply (supervision)	Haskoning Nederland	2,450,550	1,442,690
Ghana	ATMA Water Supply System	Tahal Group	41,029,976	21,338,519
Ghana	Ghana-Kasoa Interconnection Project	Denys Engineers and Contractors	12,230,167	6,350,333
Ghana	Kwanyaku Water Supply	Denys Engineers And Contractors	24,136,000	8,447,600
Ghana	Cape Coast Water Supply Project	Haskoning Nederland	3,115,000	1,858,837
Ghana	Cape Coast Water Supply Project	Ballast Nedam Ghana	36,970,000	19,153,250

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Ghana	Tamale Water Supply Ghana	Biwater Contracting	44,999,870	23,750,000
Ghana	Baikrom Water Works and Supply	Spaans Babcock	25,823,000	13,524,000
Ghana	The Barekese Water Supply Project, Kumasi	Ballast Nedam Ghana	37,426,767	19,807,484
Ghana	Kwanyaku Water Supply System	Denys Engineers And Contractors	4,131,000	2,152,310
Ghana	Water Supply Takoradi	Haskoning Nederland	1,134,451	397,058
Ghana	Water District Accra (supervision)	Haskoning Nederland	680,670	238,235
Ghana	Development Water Treatment Plant (supervision)	Haskoning Nederland	1,882,341	658,819
Ghana	Odaw Drainage Improvement Works	Interbeton	15,783,383	5,524,184
Ghana	Odaw Drainage Improvement Works 2	Interbeton	8,397,017	3,198,000
Mozambique	Chimoio, Manica and Gondola Water Supply Project	SMEC International Pty Ltd	1,720,241	860,121
Mozambique	Chimoio, Manica and Gondola Water Supply Project	China Henan International Corporation Group Co Ltd	28,131,672	14,065,836
Mozambique	Maputo Water Supply Project (MWSP)	Fundo do Investimento e Patrimonio do Abastecimento de Aguao	37,200,000	18,600,000
Niger	Waste Sectoral Project	Denys Engineers and Contractors BV	17,954,472	9,022,730
Niger	Waste Sectoral Project	TR Engineering	312,540	156,270
Sudan	Omdurman Water Supply and Optimisation	Biwater Contracting Pty Ltd	44,287,425	24,358,084
Sri Lanka	Negombo Water Supply Augmentation Project	Biwater Contracting	36,330,181	19,656,418
Vietnam	Hai Duong Water Supply Project	DHV	17,071,175	8,558,681
Vietnam	Tan Hiep Water Supply Project	DHV	14,785,994	7,444,141
Vietnam	Vinatex Wastewater Treatment Plant	Stork Aqua	3,969,976	1,389,492
Total			593,575,896	295,540,632

Source: Ministry of Foreign Affairs - Sustainable Economic Development Department (DDE)

ORIO drinking water supply and sanitation projects			
Country	Number of activities	Total project costs (EUR)	ORIO contribution (EUR)
Bangladesh	1	47,184,753	24,334,753
Bolivia	1	20,319,258	7,891,740
Bosnia and Herzegovina	2	35,988,536	10,356,100
Gambia	1	12,910,988	5,313,719
Ghana	2	87,714,191	31,144,591
Indonesia	1	6,630,000	2,320,500
Kenya	2	77,960,194	27,443,627
Mozambique	3	76,216,543	38,071,226
Niger	2	49,333,630	24,876,015
Senegal	1	26,324,491	14,110,851
Serbia	1	23,011,000	8,118,350
South Africa	3	117,907,833	42,372,536
Vietnam	6	77,143,277	27,438,619
Zambia	1	15,456,000	8,350,000
Total	27	674,100,694	272,142,627

Source: Ministry of Foreign Affairs – Sustainable Economic Development Department (DDE)

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The Netherlands contributes to the Millennium Development Goal target to halve, by 2015, the proportion of the world's population that does not have access to safe drinking water and basic sanitation. This policy review provides insights into the policy that has been implemented towards that goal and its effects. Many facilities have been realized with Dutch aid, mainly to the

benefit of women and children. Impacts on health, however, are for the most part modest or non-existent. The sustainability of the facilities has improved but the necessity of institutional maintenance is not sufficiently acknowledged. More clarity is needed as to how the costs of drinking water facilities will be funded in the absence of full cost recovery.

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