

REPUBLIC OF KENYA

Ministry of Water and Irrigation



Implementation Plan for Sanitation (IPS) 2009 (The Water Sector Sanitation Concept - WSSC)

August 2009

Preamble

The sanitation crisis is growing. Efforts to increase access to sanitation facilities hardly keep pace with the additional needs of population growth, leaving the poor increasingly marginalised. The sanitation situation in the densely populated settlements of the urban poor (sanitation hotspots / cholera corridors) is already unacceptable by human rights standards. 95% of excreta and sewer effluent is discharged into the environment poorly treated or not treated at all, polluting water resources and thereby worsening the living conditions of people and hampering economic growth (e.g. tourism). Existing facilities are underperforming. There was no adequate focus on sanitation in the past and the potential of reaching a high number of people through onsite systems has not been exploited. Up-scaling of access and fast tracking protection of water resources is now urgent.

Sanitation is a shared responsibility between sectors and calls for an enabling framework that activates forces from all sectors involved in sanitation. Leadership in sanitation, exercised through the Ministry of Public Health and Sanitation (MoPHS), shall embrace all stakeholders from the different sectors and encourage them to contribute much more than in the past. Each sector should be encouraged by the lead and sector ministries to maximize contributions in the different fields of sanitation and adhere to the standards set by the different ministries for their areas of responsibility. Progress can only be achieved with the combined effort of all associated sectors and their stakeholders.

All sanitation projects, regardless of which sector is implementing them, need to be comprehensively designed to include soft and hard components.

The water sector reform has made good progress in water coverage and resource management. Water sector institutions are ready to give sanitation the same priority and use the dynamic of the reform to boost access to sanitation with infrastructure /facilities development and controlled disposal of excreta and effluent (hardware).

The Implementation Plan for the Water Sector Sanitation Concept, IPS (WSSC) is intended to help give sanitation in the water sector the same importance and priority as it receives in the Kenya Vision 2030 and the Medium Term Plan. It shall be seen as a contribution of the water sector institutions to solving the growing sanitation crisis. The IPS (WSSC) concentrates on the water sector and its links to the other sectors involved in sanitation, but does not intend to determine the roles of institutions in other sectors.

It offers a clear strategy for the sector institutions to contribute to off- and on-site sanitation infrastructure development, and indicates targets and strategic actions as well as the required budget and enforcement mechanisms.

The IPS (WSSC) demonstrates the determination of the Ministry of Water and Irrigation (MWI) to put sanitation higher on the agenda at all levels and reverse the disengagement of the past to enable significant contribution by the sector institutions.

FOREWORD



Demand for sanitation services in Kenya is increasing with the high population growth and rapid urbanisation. At the present pace of development there is fear the country may not meet the sanitation targets of the Millennium Development Goals (MDGs). Sanitation coverage, estimated at 50%, is low. This has a negative impact on economic development due to costs related to productivity of citizens and businesses, to pollution of the environment leading to increasing tensions between community and industry, etc. It is known that wastewater discharge and pollution have the worst impact on the environment. Access to sanitation is now considered to be a human right that the Ministry and sector institutions must take seriously and work progressively to reach full achievement.

The water sector reform has opened up opportunities for accelerated attention to sanitation development just as it opened avenues for improved access to water. The elaboration of the sanitation concept for the water sector is intended not only to mobilise the required resources to accelerate the development of sanitation but also to create room for other players to effectively contribute to this joint effort. The concept elaborates the intended contribution by the Ministry of Water and Irrigation to the efforts of all other ministries and the different sector stakeholders, and further recognises the important role that the Ministry of Public Health and Sanitation is required to play in providing policy leadership and coordination of actors in the sanitation sector. The concept recognises the importance of applying various appropriate approaches to achieving sanitation targets. It focuses on rapid up-scaling of access through a combination of large sewers and onsite/decentralised systems for the safe disposal and effective treatment of human waste. Further, it is innovative because it explores the economic potential of sanitation by promoting reuse of by-products for energy generation, soil conditioning and irrigation (forestation and agriculture), and aquaculture. Approaches that promote recycling will not only save the country foreign exchange on importation of fertiliser, but more importantly reduce the damaging effects of climate change and generate a significant revenue stream resulting from carbon emission revenues (CERs) if methane gas is captured in major quantities and used.

Due to the new framework created by the water sector reform, water sector institutions have improved performance, mainly in the water supply sub-sector. This potential will now be harnessed to improve sanitation. The Water Services Trust Fund (WSTF) will expand the Urban Project Concept (UPC) to include sanitation and serve the urban poor on an increasingly large scale and provide appropriate standards. The Water Services Regulatory Board (WASREB) shall generate and effectively monitor appropriate indicators to track coverage of safe and sustainable sanitation. The Water Services Boards (WSBs) shall increase investments in sanitation and ensure concurrent development of water and sanitation facilities while water service providers (WSPs) shall be encouraged to promote access to safe sanitation within their operational areas. It is my sincere hope that all actors shall support this concept to be implemented by the MWI in order to make a substantial contribution to sanitation to improve the living conditions and livelihoods of all Kenyans.

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Acronyms and Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
Bn	Billion
BOT	Build, Operated, Transferred
CBOs	Community based organisations
CPC	Community Project Cycle
CRDA	Christian Relief Development Association
DPs	Development Partners
DWOs	District Water Offices
EcoSan	Ecological Sanitation
GoK	Government of Kenya
GTZ	German Technical Cooperation
HR	Human Rights (to water and sanitation)
ICESCR	International Covenant on Economic, Social and Cultural Rights
IPS (WSSC)	Implementation Plan for the Water Sector Sanitation Concept
JMP	Joint Monitoring Programme
KEWI	Kenya Water Institute
KIHBS	Kenya Integrated Household Budget Survey
KNBS	Kenya National Bureau of Statistics
KSh	Kenya shilling
Maji data	Database for urban poor (pro-poor mapping)
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
Mio	Million
MoE	Ministry of Education
MoH	Ministry of Health
MoLG	Ministry of Local Government
MoPHS	Ministry of Public Health and Sanitation.
MoPND	Ministry of Planning and National Development and Vision 2030
MTEF	Medium Term Expenditure Framework
MWI	Ministry of Water and Irrigation
NEMA	National Environmental Management Authority
NESHP	National Environmental Sanitation and Hygiene Policy
NGOs	Non Governmental Organisations
NIMES	National Integrated Monitoring and Evaluation System
NWSS	National Water Services Strategy
O&M	Operation and maintenance
ONEA	Office National de l'Eau et de l'Assainissement (Burkina Faso)
PICS	Project Implementation Concept for Sanitation
PPIP	Pro-Poor Implementation Plan
PPP	Public Private Partnership
PROMIS	Project Management Information System.

SIP	Sector Investment Plan
SIS	Sector Information System
SPA	Service Provision Agreement
SWAp	Sector Wide Approach to Planning
ToR	Terms of Reference
TSC	Teachers Service Commission.
UDDTs	Urine Diverting Dehydrating Toilets
UN-Habitat	United Nations Human Settlements Programme
UPC	Urban Project Concept
VIP	Ventilated Improved Pit Latrine.
WAB	Water Appeals Board
WARIS	Water Regulation Information System
WaSBIT	Water Service Board Investment Tool
WASREB	Water Services Regulatory Board
WRM	Water Resources Management.
WHO	World Health Organisation
WRMA	Water Resources Management Authority
WRUAs	Water Resources Users Association
WSBs	Water Services Boards
WSPs	Water Services Providers
WSS	Water Supply and Sanitation
WSTF	Water Services Trust Fund
WSWG	Water Sector Working Group

Executive summary

The development of this sanitation concept paper and implementation plan was triggered by the large supporting votes from stakeholders and participants during the annual water sector conference of 2007. This indicates the growing importance of sanitation in the water sector.

The overall objective of the IPS (WSSC) is to accelerate coverage of sanitation, using appropriate technologies that protect the environment and reuse effluent and excreta (productive sanitation). The acceleration shall be achieved by using the momentum of the water sector reforms to engage all water sector institutions as well as other players in the sector as part of the overall and cross sectoral contribution to sanitation.

The importance of water and sanitation in assisting Kenya to move from a developing country to a rapidly-industrialising middle income country is well covered in the Government of Kenya's Vision 2030 and its first Medium Term Plan for the period 2008-2012, where access to water and sanitation facilities and the quality of water resources have been prioritised as key areas for development. This is further reinforced by the fact that the MDG on sanitation is the slowest progressing of all Goals. 60-88% of all diseases are linked to insufficient water supply and basic sanitation. The socio-economic and environmental costs are colossal. Health economists reckon that for every Kenya shilling (KSh) invested in sanitation seven shillings of economic benefits can be gained. In addition, insufficient sanitation affects the education of girls in particular and is responsible for the loss of working days, leading to low productivity. Access to improved sanitation installations is therefore important for human dignity, self-esteem, gender equality and poverty reduction!

The first Medium Term Plan 2008-2012 projects that the population will be around 42 million by 2012. The impact of this increase on sanitation, particularly in the informal settlements, will be devastating if the current trend in access to sanitation is not changed.

Sanitation infrastructure is as important as hygiene education and marketing. Good infrastructure (water and sanitation) will reduce diarrhoea by 51% and when combined with hand washing campaigns by 87%. Good drinking water quality and sufficient quantity combined with sanitation infrastructure reduces diarrhoea morbidity by 65%. The MWI is determined to fulfil these responsibilities, combined with the responsibility of protecting water resources from pollution, in order to achieve satisfactory public health levels. The sanitation crisis can only be reversed with the combined efforts of the different sectors and levels involved. Comprehensive sanitation policies and strategies recognise the link between sanitation, water, health and environment. Water sector institutions offer crucial contributions to the sanitation goals.

Key challenges in sanitation are therefore identified as follows: low access and inadequate sanitation facilities, high public health risks in the fast-growing urban low income settlements (high density equals high risk), lack of sanitation facilities in public places and institutions, increasing contamination of raw water resources, failure to apply technologies for reuse of excreta and effluents (productive sanitation), limited financial resources, insufficient capacity in planning/implementation/operation, limited participation by institutions and the private sector, de-linking of water supply from sanitation and last but not least the insufficient data base and information.

The demand for sanitation is recognised as follows: Presently, 18.1 mio people need to have additional access. Maintaining the present planned coverage rate of 19% through sewer systems until 2020 would need investments of KSh 12.4 billion (this is double the sanitation investment carried out by MWI in the last 10 years). If the coverage through sewer systems with large networks shall be raised to 25% in 2020, investments of around KSh 22.5 bn would be needed (KSh 1.875 bn annually). For the support of household sanitation KSh 30 bn would be needed annually. The rough estimation for investments in public sanitation facilities is KSh 1 bn, and for schools and other public institutions KSh 15.8 bn.

The new approach of MWI as documented by this paper endeavours to reverse the above challenges by recognising that sanitation intervention requires the involving of all sector institutions and players (private sector, NGOs, etc.), using their potential as already demonstrated with the achievements in water supply. The water sector reform opens numerous opportunities for sanitation which need to be taken on board. Safe sanitation shall fulfil the requirements of the human right to sanitation and shall only be counted as sustainable access to safe sanitation if safe disposal of sludge and effluent is guaranteed. In addition, a special focus shall be directed to improve sanitation coverage and public health in the crowded settlements in the urban setting (hotspots). Improving sanitation shall contribute to better health, protection of the environment and income generation. The approach, therefore, will make a substantial contribution to poverty alleviation.

Appropriate technology will be very important in speeding up access to sanitation and the protection of environment, because the link of water/sanitation to the environment is as important as the link of water/sanitation to health. Key technology proposed is tertiary treatment of effluent for productive sanitation, EcoSan, etc.

Sustainable sanitation in line with the Millennium Development Goals (focusing on access) and in line with human rights (focusing in addition on public and institutional sanitation) shall receive increased attention. Facilities receiving high amounts of effluent (sewage treatment plants and onsite sanitation facilities at public places and institutions) shall be designed for the reuse of effluents to produce biogas, fertiliser and water for irrigation in order to protect the environment (stop pollution and water stress) and generate the advantages of sanitation for production. The MWI with its sector institutions shall focus investments on sewer with large collection networks and decentralised (onsite) treatment systems (ablution blocks in slums, public places and institutions) giving particular attention to the safe disposal of effluent and reuse. Because it protects water resources and the environment, EcoSan solutions will receive high priority and will be applied where appropriate and socially acceptable.

The sanitation sector shall move towards more involvement by professionals. This shall be achieved by outsourcing of operation of big treatment plants, onsite facilities for treatment, etc. to the private sector and by involving WSPs under regulation in promoting and operating sanitation facilities. The preferred financing channels shall be the WSBs and the WSTF in order to ensure implementation according to national concepts and standards. The principle of users pay (at least O&M costs) shall be maintained with cross-subsidisation for the benefit of the poor.

The involved water sector institutions in sanitation are — on national level — the Ministry of Water and Irrigation (MWI), Water Services Regulatory Board (WASREB), Water Services Trust Fund (WSTF), Water Resource Management Authority (WRMA) and the Kenya Water Institute (KEWI). On regional level are the Water Services Boards (WSBs) and on local level the Water Services Providers (WSPs), the private sector, the community based organisations (CBOs) and the Water Resources Users Associations (WRUAs), NGOs/Civil Society Organisations

The annual targets for sanitation reflecting water sector priorities are:

Priority	Systems and people reached annually (KSh/capita)	Annual Funds	Key water sector institution	Focus on:
1	Sewer with extensive networks reaching 435,000 additional people (KSh 4,310/c)	1.875 bn	MWI, WSBs	MDGs
1	Sewer with onsite treatment / ablution blocks reaching 120,000 (KSh 625/c)	0.075 bn	WSTF, WSBs	MDGs
3	Subsidy programme urban house hold sanitation reaching 200,000 underserved from 2011 on (KSh1,000/c)	0.200 bn	WSTF, WSPs	MDGs
2	Public sanitation reaching 60,000 people (KSh 1,000/c)	0.060 bn	WSTF, WSBs	HR
2	Institutional sanitation reaching 10,000 people (KSh 2,000/c)	0.020 bn	WSTF	HR
3	Rural sanitation for productive use reaching 20,000 underserved (KSh 500/c)	0.010 bn	WSTF, WRMA	MDG

Up-scaling of access to sanitation and protection of water resources is crucial. For this the MWI and the WSTF will concentrate on resource mobilisation for sanitation infrastructure in order to go beyond the above proposed minimum investments. Investments shall be channelled where the highest benefit is achieved and improvements can be reached rapidly on a large scale. Concurrently, marketing of sanitation through MoPHS should also be scaled up to run in tandem with the investments.

Enforcement of IPS (WSSC) shall be ensured by the MWI with the help of WASREB (standards and guidelines) and WSTF. The WSTF shall elaborate a Project Implementation Concept for Sanitation (PICS) for the water sector institutions that include communication, subsidies and monitoring. The MWI and the sector institutions shall help development partners and NGOs to align to the PICS. There will be close cooperation between the lead Ministry (MoPHS) and other Ministries involved in sanitation, and adherence to standards shall be ensured.

All sector institutions shall include indicators for sanitation in their performance contracts, related to the strategic actions and targets of the IPS (WSSC) from 2009 on. Monitoring of performance and improvement of information shall be ensured with the help of the information systems developed in the water sector (Waris, WaSBIT, Promis, etc.). The information shall be shared regularly with all sectors involved in sanitation. There shall no longer be reporting on water that does not include sanitation.

1. Rationale and objectives

1.1 Rationale

Access to sanitation is not improving (see table below). Population growth is particularly rapid in the settlements of the urban poor, where the number of sanitation hotspots is increasing. The first Medium Term Plan 2008-2012 projects that the population will be around 42 million by 2012. The impact of this increase on sanitation, particularly in the informal settlements, will be devastating if the current trend in access to sanitation is not halted. Presently, 95%¹ of excreta and sewer effluents are discharged into the environment without treatment, directly affecting the living conditions of the population, economic growth and the development of entire sectors (tourism, agriculture, etc.) through polluted ground and surface water.

There are different sources of information on the current sanitation situation. Some of the latest data are as follows:

Sanitation coverage	Year 2000 ²	Year 2006 ³
Flush systems (sewerage/septic tanks)	38.1%	11.0%
Latrines (VIP, covered and uncovered pits)	45.4%	73.0%

56% of urban households in Kenya use latrines compared to 78.8% of rural households.⁴ The same survey shows that 49.3% of latrines in urban areas and 41.1% in rural areas are shallow⁵. This is a source of widespread pollution of the environment and in particular of water resources. In Nairobi Province 89% in the low income settlements/slums use shallow pit latrines — a situation that is simply unacceptable from a public health perspective.

So not only is sanitation coverage not progressing, the existing facilities/latrines pollute surface and ground water. The challenge of improving environmental health and reducing waterborne diseases remains unchanged because of widespread pollution through inadequate technology. Therefore, the statement of the Kenya Integrated Household Budget Survey (KIHBS) in 2007 that 84.0% of all Kenyan households use adequate human waste disposal facilities is disputable.

The MWI is responsible for improving coverage of water and sanitation, as well as for the monitoring and management of water resources. Therefore, the sector institutions need to be more involved in sanitation than previously, including the safe disposal of excreta and effluent, if the MWI wants to achieve the national goals. Contribution to sanitation must be comprehensive and take on board not only soft- and hardware components but also the links to protecting the environment through safe disposal of excreta from onsite sanitation, collection and disposal of solid waste, productive sanitation / agriculture / energy, etc.

Sanitation in the water sector was not high enough on the agenda in the past, and enforcement of treatment and disposal has been lacking. Hence the MWI has decided to extend the dynamics of

¹ Prof. Kloss, 2009

² Kenya Demographic and Health Survey Kenya; Projections report 2000

³ KIHBS 2007

⁴ According to the Kenya Integrated Household Budget Survey (KIHBS) 2005/06 dated August 2007, in urban areas VIP – 6.8%, uncovered pit latrines – 29.2%, covered pit latrine – 20%, in rural areas VIP – 5.3%, uncovered pit 36.7%, covered pit 36.8%.

⁵ The KIHBS defines 'depth' of latrines as the level of human waste from the top surface (i.e. sanitary platform), 'shallow' if less than 10ft and 'deep' if more than 10ft

the water reform process to mainstream sanitation. The encouraging progress so far achieved in access to water should now be extended to sanitation, and enable the MWI in future to report substantial progress in sanitation coverage and protection of water resources.

In 2006 the MWI launched the Sector Wide Approach to Planning (SWAp) process in the water sector. One of the achievements in the development of the water sector SWAp is the enhancement of dialogue between stakeholders and increased accountability/transparency of sector institutions through the organisation of regular sector meetings (WSWG – Water Sector Working Group) and annual sector conferences. At these annual occasions all sector stakeholders agree on annual sector undertakings. One of the undertakings for 2008 was the “Development of a pro-poor sanitation concept for the water sector with up-scaling of coverage”. Among all the undertakings proposed, sanitation received the most support from the stakeholders. This indicates the importance participants at the conference attributed to sanitation issues. The fact that 2008 was declared as the International Year of Sanitation may have helped to put sanitation higher on the political agenda in the water sector. In addition, the further development of the SWAp will help to move away from the isolated project approach and support national programs through basket funds such as the WSTF. The development of the SWAp in the water sector shall also be used to strengthen coordination among the sector players for sanitation and to develop a coordination mechanism under the leadership of the MoPHS.

The elaboration of the IPS (WSSC) focusing particularly on the contribution to poverty alleviation is a further step to improve the support the water sector can provide for sanitation. This development commenced with a long term focus expressed by the National Water Services Strategy (NWSS), the Pro-Poor Implementation Plan (PIIP) for the NWSS and specifically with the Position Paper on Sanitation issued by the MWI. The IPS (WSSC) must be seen as the next logical step to advance further in the promotion and implementation of sanitation.

The Ministry of Health (MoH), previously the lead ministry for coordination in Sanitation matters, has gazetted the National Environmental Sanitation and Hygiene Policy (NESHP) which is now implemented by the newly created Ministry of Public Health and Sanitation (MoPHS). In addition, the Local Government Act covers sanitation as well and the Ministry of Local Government (MoLG) through its municipalities is engaged in the promotion of public and institutional sanitation. The MWI, being responsible for infrastructure development on water and sanitation, is determined to accelerate the contribution to the national goals for access to sanitation. The present concept outlines how water sector institutions can provide significant support to improve the living conditions of the Kenyan population by improving access to sanitation infrastructure, particularly for the low income population (the poor). The close coordination between MWI, MoPHS with its NESHP, as well as MoLG, will create synergies in the form of improved quality of facilities and behavioural change due to better alignments to standards. Through improved harmonisation in working groups funds will be used more effectively (e.g. concentration on hotspots). In addition, other sectors will increasingly use technology for re-use and healthy disposal especially for public, institutional and industrial sanitation.

1.2 Objectives

The MWI has placed the sanitation crisis higher on the political agenda and set the following objectives for the IPS (WSSC):

Overall objective: **Accelerate coverage of sanitation with technologies protecting the environment and reusing effluent and excreta.**

This shall be achieved by using the momentum of the water sector reform and engaging all water sector institutions in sanitation.

The specific objectives are:

- 1 **Put sanitation higher on the agenda, develop a framework of action and solicit full support and commitment from all stakeholders in the water sector** — mainstreaming sanitation in order to ensure **concurrent development of water and sanitation.**
- 2 **Increase coverage of sanitation** (including public sanitation) by particularly **concentrating on sanitation hotspots.**
- 3 **Enhance cooperation/harmonisation with other sectors on sanitation.**
- 4 **Improve enforcement of sanitation standards and national sanitation technology concepts** to ensure **efficient disposal of waste water at user level.**
- 5 **Improve operation of sewage collection and treatment systems and promote the economic and social benefits of wastewater⁶.**
- 6 **Mobilise increasing funds for sanitation** and provide incentives for implementation.
- 7 **Ensure adequate response to emergencies / disasters that require sanitation intervention.**

This shall ensure that coverage for sanitation progresses at the same encouraging rate as access to water and that the sanitation demonstration measures presently underway are preparing stakeholders for up-scaling, especially for the benefit of the poor. In addition it shall reinforce efforts to protect water resources from pollution.

2. Water sector reform and opportunities for sanitation

Different sectors in Kenya are undergoing deep-rooted reforms in order to improve sector performance; this affects not only government institutions but also the contributions of the private sector and civil society organisations. The common goals in all the sectors are wider coverage for the population with infrastructure and basic services, and the sustainability of basic services with increased quality, specifically for the poor. This will enable the move from a developing country to a middle income country according to the Government of Kenya (GoK) Vision 2030. For sub-sectors such as sanitation, where achievement of goals depends on the contributions of several sectors/ministries, it is understood that the lead ministry (MoPHS) encourages the other sectors to maximize the benefits of sector reforms with regards to their contributions to the common goals of the sub-sector. This is what the MWI intends with the present IPS (WSSC).

⁶ Waste water includes human waste from dry sanitation systems

The water sector reform has achieved several important milestones. The most remarkable intermediate result is that the decline in water coverage has come to a halt. The trend has reversed due to several significant changes and improvements. There are strong indications of improvements due to commercialisation of service provision in the urban setting, an enhanced pro-poor orientation since the implementation of the water sector reform, and the introduction of a regulatory regime. Improved revenue collection, monitoring of performance indicators, improved corporate governance, increased engagement of WSPs in informal settlements, etc. have led to improved service levels in many towns, and increased coverage in towns where commercialisation⁷ has been introduced.⁸

2.1 Achievements in water service provision since the water sector reform

- Water services are increasingly professionalised and gaining in quality with socially responsible commercialisation in the urban areas. This has led to better service provision and the reversal of declining coverage.
- Water systems and their operation become increasingly sustainable with rising cost recovery and socially responsible commercialisation in the urban setting. Residents in the settlements of the poor are better served by formal service providers.
- Standards for water services and facilities are elaborated and gradually enforced.
- More and more water services are formalised and WSPs are ready to extend service provision to the settlements of the urban poor. Increasingly, the low income population has access to water at lower cost than from informal service providers with, in addition, a better water quality controlled to national standards.
- Information and monitoring of service provision, coverage, performance, etc. is improving and made public through reporting. This has led to improved service provision to the benefit of the consumers.
- Funds for investment are continuously rising, improving services and allowing to extend infrastructure to low income settlements with quality-controlled service provision.
- Investment planning is improving.
- Demonstration projects are carried out and lessons learned are utilised to build capacity in sector institutions, the private sector and civil society organisations. The ground is therefore prepared for large up-scaling measures.
- Stakeholders are mobilised to align to the principles of the sector reform.
- Best practices are communicated.

These achievements are possible because the new sector institutions work with increasing professionalism and implement comprehensive concepts leading to sustainability of systems.

The institutions established during the reforms, the private sector and civil society organisations in the water sector show great interest in contributing to sanitation. This interest and the proven potential of the water sector reform shall now be used for the development of sanitation in close collaboration with the MoPHS and other involved ministries.

⁷ Socially Responsible Commercialisation, WASREB, March 2007

⁸ Refer to WASREB publication 'Socially Responsible Commercialisation 2007'

There is no need to create new additional institutional structure for sanitation in the water sector. The existing institutions can and are willing to take sanitation on board. For the WSPs, incentives shall be created to boost their interest in sanitation.

The aim is that the ongoing demonstration activities are used to gradually upscale the contribution of the water sector to sanitation.

2.2 Potential benefits for sanitation generated by the water sector reform

Similar to the development of improvements for water supply, the water sector will concentrate on the following in sanitation:

- Involve professionals (including the private sector / water utilities) at all levels, especially for development and implementation of facilities and improvement of services. This should help up-scaling of infrastructure and services with increasing quality level.
- Aim at sustainability of infrastructure and its management gradually by ensuring cost recovery and involvement of socially responsible commercially-oriented providers in the urban setting. This will ensure that future generations also benefit from the investments undertaken presently.
- Set standards for the development of facilities and enforce standards set by other ministries e.g. MoPHS on the software components.
- Promote sanitation through formalised service providers and concentrate on the settlements of the urban poor. This will lead to higher coverage rates to match the fast growing population, and a higher quality of infrastructure and services.
- Improve baseline data, especially for low-income urban settlements, and make the information accessible to the public through regular reporting. This will improve priority setting and transparency.
- Increase the number of project proposals (e.g. to the WSTF)⁹ for the acquisition of funds.
- Include sanitation in investment planning.
- Increase demonstration projects in order to enhance capacity building at the sector institutions, private sector and civil society organisations for up-scaling.
- Mobilise all stakeholders for sanitation and make them align to the sector concept.
- Publish best practices regularly.

3. Facts about sanitation

The sanitation situation of a country is a key indicator for its level of development. The MDG sanitation target affects 40% of the world population and is the largest target for development, as the repercussions of poor sanitation are the largest killer of children. Despite these undoubted facts sanitation, is not prioritised by many governments, is often considered as the “last chapter of development¹⁰” and, unfortunately, it is the MDG target most off-track.

⁹ Project proposals, e.g. submitted and financed by the WSTF, carried out by the sector institutions are aligned to national concepts and are part of the overall sector wide planning

¹⁰ Rosemarin, 2007

The importance of water and sanitation (MDG 7) for the achievement of all other MDGs and as an instrument for sustainable development, economic growth and poverty reduction is undisputed.

3.1 Importance of sanitation for health

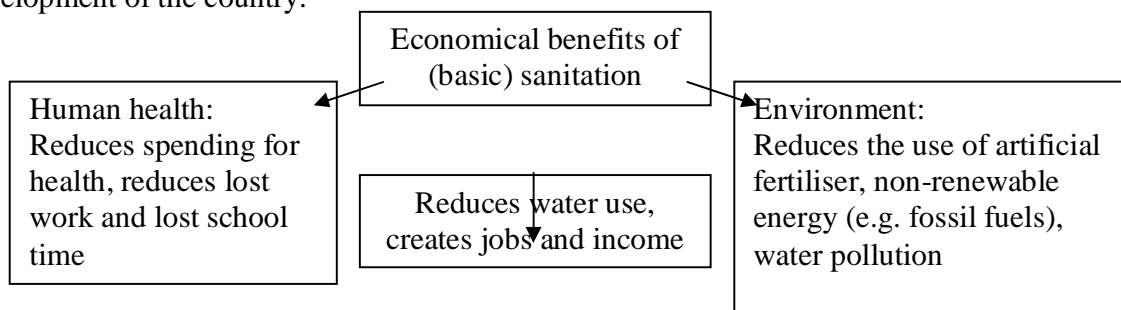
Worldwide it is estimated that 60-88% of all diseases are linked directly or indirectly to water supply and sanitation, whereby the highest incidence is noted in crowded low income urban settlements. In Ethiopia 75% of patients in hospitals in urban areas suffer from water- and excreta-related diseases.¹¹ Diarrhoea kills more children every year than all armed conflict worldwide combined. It only trails pneumonia as the biggest killer of small children in the world, ahead of tuberculosis, AIDs and malaria.. Africa is the continent with the biggest potential for improvement.

Despite such alarming data, sanitation in Kenya is still not receiving adequate attention and access is not substantially improving. Kenya finds itself more or less in a situation comparable to most countries in Africa south of the Sahel.

3.2 High socio-economic and environmental costs of inadequate sanitation and effluent treatment/disposal

Contamination of water resources has a direct and generally devastating implication on public health. Although health economists reckon that every one shilling invested in sanitation can reap seven shillings in economic benefits¹², the funds available for sanitation and the efforts undertaken trail far behind the spending on health and drinking water supply. MWI has therefore undertaken steps to put sanitation higher on the political agenda. One of these was the organisation of the East African Regional Conference “Accelerating Access to Sanitation” held in Nairobi in November 2007, as a prelude to the International Year of Sanitation.

Insufficient access to sanitation installations and hygiene education increases the incidence of diarrhoea and the prevalence of worm infestations, which have a huge effect on nutrition and mortality. It also has a tremendous effect on spending on health, funds which could otherwise be used to help reduce poverty. In addition, it affects significantly school attendance and therefore the level of education, mainly for girls. Missing separate and hygienic sanitation installations at schools and public places is directly linked to low education and insufficient participation in public life of girls and women. This combined with loss of working days due to illness and caring for the sick leads to low productivity and poses serious limits to the economic development of the country.



¹¹ CRDA, 1999

¹² Guy Hutton, WHO, 2006

Access to improved sanitation installations is important for human dignity, increasing self-esteem, gender equality and poverty reduction!

3.3 Sanitation infrastructure and hygiene education: equally important

It is a fact that outbreaks of waterborne diseases such as cholera mainly occur during the rainy season and generally in crowded urban areas (rainy season is cholera season). Uncontrolled and insufficient disposal of human excreta is responsible for contaminating water resources used for human consumption or flooding of human settlements with untreated effluent.

Safe sanitation infrastructure guaranteeing good disposal of human excreta through adequate facilities reduces:

- diarrhoea by 36%,
- cholera by 66%,
- worm infestation by 12 – 86%

Safe water supply facilities reduce:

- diarrhoea by 15%,

Washing hands reduces: - diarrhoea by 36%,¹³

Adequate infrastructure (water and sanitation) will reduce diarrhoea by 51% and combined with hand washing campaigns by 87%.

This proves that access to infrastructure/facilities ensuring safe disposal of excreta, especially in the crowded settlements of the poor, combined with large scale hygiene education, is the key to improving sanitation and therefore better living conditions for the Kenyan population.

Despite large sensitisation campaigns over a long period the sanitation situation has not improved, although need has been turned into huge demand due to sensitisation and marketing. The implementation approaches must balance the efforts to provide infrastructure/facilities, sensitisation and marketing because with one component alone the job cannot be done. Missing facilities is presently one of the major bottlenecks in sanitation, which can be addressed with mechanisms such as subsidies for construction within the framework of promotion campaigns.

3.4 Improved access to sanitation: a combined effort by different sectors and levels

Due to the multi-disciplinary nature of sanitation, coordination and joint decision making between ministries at the national level is critical. In Kenya this coordination role at the national level has been given to the Ministry of Public Health and Sanitation.

Significant progress in improving access to sanitation can only be achieved if the contributions of each involved sector (health, water, education, housing, local government, etc.) leads to up-scaling of coverage. Coordination needs to create an enabling environment where the contributions of all sector institutions are accepted as long as they follow the standards issued by the different sector ministries for their fields of responsibilities. Coordination should enhance rather than limit the contributions of the different ministries and stakeholders.

It is a widely recognised principle that water and sanitation projects should be implemented concurrently. Water and sanitation cannot and must not be de-linked. In addition the link

¹³ Esrey, Ethiopia

between environment and sanitation (a clean environment helps break the cycle of diseases) is as important as the link between sanitation and health. Thus, a comprehensive sanitation policy/strategy must recognise the **links “water - sanitation - health - environment”** and give all of them the same priority. The MWI as custodian of water supply, sanitation infrastructure development and water resource management holding responsibilities for effluent/excreta control is therefore a key player in the sanitation sub-sector.

For the delivery of sanitation a combination of infrastructure development, hygiene education and advocacy/social marketing is needed, and all of these elements shall be integral components for any agency from the various sectors involved in planning and implementing sanitation projects and particularly for all actors in the water sector. In addition, implementation cannot be left to authorities alone but must include professionals from the private sector (providers and artisans) and civil society.

Next to the policy level and sector institutions, municipalities, communities and households have to play an active role in sanitation at the local level in order to ensure awareness, acceptability and sustainability of sanitation.

3.5 Water sector institutions offer crucial contributions to sanitation

Water sector institutions can bring substantial improvements to sanitation coverage and environmental hygiene. For instance, since the water sector institutions in Burkina Faso (ONEA – WSS service provider) took the initiative (with the consent of other ministries involved in sanitation) to promote sanitation installations in the 90s the coverage of sanitation in the capital Ouagadougou jumped from 6% in 1996 to 46% in 2004.

Reforms in the water sector offer new opportunities which can be used not only for the supply of drinking water and water resource management but also for sanitation.

3.6 Difference in rural and urban sanitation

The high population density in urban areas makes it often impossible to place a sanitation facility at each household and therefore solutions like ablution blocks are needed. Lacking or inappropriate sanitation facilities makes living conditions much worse in urban than in rural areas. Pollution of water resources through insufficient sanitation is particularly high in urban areas. Investments in these areas achieve high sanitation coverage in a short time. Consequently, densely populated areas need to have particular attention. Solutions like ablution blocks, decentralised waste water treatment with bio-digesters etc. needs professional management skills in order to achieve sustainability of operation. Commercial viability is a key factor for success.

As the poverty index is higher in the rural than urban setting and the acceptance of reuse of excreta and urine is higher, support to provide sanitation facilities cannot be neglected in rural areas. In rural areas communities have to play the key role in sanitation development and promote technologies with the highest economic benefits for the users. Acceptance of EcoSan solutions is often very high because of increased food production as a result of the use of EcoSan by-products.¹⁴ Most households own land on which the by-products can be utilised and they are

¹⁴ Very high acceptance has been observed in Ugunja and Mumias areas of Kenya, EcoSan Project EU-SIDA-DANIDA-GTZ, 2009

willing to share the facilities with others in order to generate more organic fertiliser. The risk that sanitation facility pollute water resources is smaller in the rural than in the urban areas.

The incentive for improved sanitation in rural areas is mainly linked to the use of sanitation by-products, whereas in urban areas it is public health and the protection of water resources.

3.7 Productive sanitation — benefits of re-use

The potential to exploit wastewater and excreta is large and includes aquifer recharge, irrigation, energy production, agricultural use of sludge, aquaculture, etc. Experience has shown that utilisation of this potential leads to substantial financial savings and job creation, resulting in improved commercial sustainability and efficiency of treatment plants. In addition, the use of biogas reduces emissions into the atmosphere contributing to devastating climate changes.

4. Sanitation challenges in Kenya

4.1 Sanitation activities insufficient to meet the rapid population growth

Population growth and rapid urbanisation put a new dimension to the challenge in water and especially in sanitation. More and more emerging sanitation hotspots continue to create increasingly inhuman living conditions in the informal settlements. The transformation of Kenya into a rapidly industrialised middle income country will not be possible if the sanitation challenge is not mastered. By the end of the first Medium Term Plan 2008-2012, it is projected that the population will be about 42 million. The impact of this on sanitation, particularly in the informal settlements, will be devastating if the current trend in access to sanitation is not changed.

4.2 Cross sectoral nature of sanitation

Because of the cross sectoral nature of sanitation, coordination and harmonisation are crucial if the current trend is to be reversed. Harmonisation efforts to be undertaken by the MWI and sector institutions have to extend to other government ministries, e.g. to the Office of the President for emergencies, MoPHS for sanitation policy as the lead ministry, to the MoLG for planning of infrastructure and for public and institutional sanitation, to the Ministry of Roads for storm water drainage, to the Ministry of Education for sensitisation and education on sanitation, to NEMA for the environmental protection, etc....

The coordination and harmonisation at the local level between the different sectors is acceptable despite challenges / disputes at the national level caused by different understanding and interpretation blocking actions on the ground. Nevertheless, all ministries need to work together to set the right enabling framework in which all sector players such as sector institutions, civil society organisations and the private sector can maximize their input in the different areas of sanitation. This includes the efforts to harmonise the legal framework.

4.3 Low access to sanitation installations (private and public) with rapid urbanisation

Low access to sanitation and the growing sanitation crisis particularly visible in the urban informal settlements is the result of rapid population growth and urbanisation in Kenya. Efforts in the past to improve the sanitation situation have not been adequate to make up for the

increasing demand¹⁵. The development of slums in major towns and cities is also due to the rapid rural-urban migration. The lack of physical planning by some of the councils is amplifying the growth of unplanned settlements. According to the estimation of the first MTP the population will be around 42 million by 2012. The impact of this increase on sanitation will be particularly felt in the informal settlements.

It is estimated (National Water Services Strategy) that access to safe sanitation facilities in Kenya is in the urban areas only 55%¹⁶ and in the rural areas only 45% (estimation based on the requirements of human rights to sanitation). However more than 50% of this population are said to access sanitation through the use of traditional pit latrines which, though acting as means of disposal, are to a large extent a nuisance, do not provide dignity and pollute water sources, both ground and surface water. Only around 19%¹⁷ of the urban population are connected to sewer networks. This means that in Kenya a total of 18 mio people live with unacceptable health risks due to missing sanitation facilities (more than 6.5 mio from 11 mio in urban and 11.5 mio in rural areas). This situation is simply unacceptable as it hampers social and economic development, pollutes the environment (sanitation hazard) and breaches the human right to sanitation.

High density equals high risks: Though sanitation data indicate that access in the rural setting is lower than in urban areas, the need to improve sanitation coverage in the low-income settlements in towns is particularly urgent as the risk of contamination rises with increasing density. In such high density areas high demand is compounded by limited space and high-risk disposal practices leading to desperate living conditions.

Rapid urbanisation will increase the number of settlements with high density population much faster than the non-covered population in the rural environment and therefore will increase the present sanitation risks. Population growth in Africa will primarily take place in the slums¹⁸ and with it grow the sanitation complications. It is in the settlements of the urban poor where the sanitation challenges are biggest.

Insufficient access to acceptable sanitation installations at institutions and public places: Not only at household level are Kenyans badly affected by missing sanitation installations but also at public places (bus/train stations, markets, etc.) and at institutions (schools, prisons, etc.). Pandemics like cholera are especially fast spreading at such public places and basic human dignity comes into question where people meet in large numbers with insufficient or no sanitation facilities. This is why the human rights to sanitation include access to adequate installations also at public places despite it not being counted for the achievements of the MDG on sanitation. Indeed, many other MDGs will not be achieved without sufficient sanitation facilities at public places and institutions.

¹⁵ In the present paper, demand is the equivalent of lack of facilities

¹⁶ Traditional pit latrines in the urban setting cannot be considered safe as they generally pollute water sources and often are prone to flooding, contaminating the living environment of people. Considering the data on sanitation of the Kenyan Integrated Household Budget Survey 2005/2006 with coverage of 95% in the urban setting (including 49.2% pit latrines) the sanitation coverage with safe disposal is an estimated 48%.

¹⁷ Impact, Report of WASREB for the period 2005-2006

¹⁸ UN report 2006

4.4 Increasing contamination of water resources degrades public health

Protection and prevention of contamination of water resources is foremost in the interests of improving public health and quality of life of people. Health costs (individual and national) could be significantly reduced with the improvement of treatment facilities and by the use of environmentally sound onsite facilities. Apart from MWI and its sector institutions, the National Environmental Management Authority (NEMA) plays a crucial role in protecting the environment.

One of the most common sources of contamination of water has their origin in the inadequate disposal of excreta and effluent from human waste. Treatment facilities of sewer systems are not adequately operated or sewage is discharged into the environment without treatment at all.¹⁹ In addition, sanitation facilities are constructed in such a way that ground water is contaminated or the environment is prone to flooding during rainy seasons. Recycling technologies are not implemented on the scale needed. Standards to prevent contamination of water resources are not available or not being enforced.

4.5 Technology options for reuse of excreta and effluents are not fully taken on board

Poorly designed and constructed onsite facilities (questionable privacy and cultural appropriateness, foul smell, structurally insecure, etc.) hamper utilisation by potential users and increase tremendously the risk of pandemics during the rainy seasons. The result of poor facilities is that many onsite sanitation installations are not used or maintained, making people resort to such habits as relieving themselves on public grounds, behind bushes or using “flying toilets”, etc.

In addition, many sewage treatment plants incur high operational costs because of outdated and inadequate design that does not make use of the potential for reusable energy, fertiliser production and treated water for irrigation.

This valuable use of effluent will ensure that the pollution of surface and ground water is stopped and therefore public health improved (closing the loop). It is by now widely recognised that effluent from sanitation infrastructure is not waste but can be a source for production of energy and fertiliser. In order to generate and use these products the stakeholders in the sector need to possess the specific knowhow (EcoSan) and apply management concepts ensuring sustainability of operation, which presently is not the case in Kenya. The introduction of EcoSan with the reuse of effluents at small scale has commenced with some demonstration projects carried out by the MWI and the WSTF with the involvement of WSBs and WSPs.

Currently, the treatment of effluent at sewage plants is not geared towards its reuse to produce biogas, fertiliser and treated water for irrigation at medium and large scale. Failure to harness these by-products is a waste of resources. It is estimated that with the introduction of innovative waste water treatment technology sufficient biogas could be produced to cover 10% of the national electrical/energy demand of Kenya²⁰. Consequently, significant contributions to increasing soil fertility and reforestation are also lost.

¹⁹ A recent survey of 43 sewage treatment plants operated by WSPs revealed that only 3% the treated effluent complied with international standards

²⁰ Rolf Kloss, 2009

4.6 Limited financial resources for sanitation facility development

The budget for sanitation has always been much smaller over the years than for water, although demand requires that sanitation investments and annual costs must be higher than for water supply (60% sanitation and 40% water). This imbalance can also be observed with donor contributions. One of the reasons is certainly that implementing sanitation projects is more complex than water projects, due to the multi-disciplinary nature of sanitation and the social implications in offering acceptable solutions. This challenge shall be overcome with the present IPS(WSSC) and the more detailed plans and concepts derived from it and to be implemented by the water sector institutions increasingly involved in sanitation. The efforts to obtain more funds should be complemented by efforts to increase effectiveness of funds, e.g. by promotion of low cost technologies.

4.7 Insufficient planning/implementation/operation capacities and use of institutions and private sector

Politicians, leaders, civil servants and parastatal organisations have neglected their obligation to provide sanitation service and civil society organisations have tried to fill the gap. In addition, the private sector has been under-utilised. This has hampered the building of responsibility and capacity at all levels in Kenya. The argument that water utilities have enough work to overcome the challenges in water and are not interested in getting involved in sanitation has long been proven wrong, especially with the recent implementation of demonstration projects on sanitation carried out by the WSTF/WSBs/WSP under the oversight of the MWI. It is time to ease the bottleneck of limited capacity in order to be able to absorb increasing funds for sanitation and to document good examples such as Nyeri which has achieved international standard in operating its sewage treatment plant.

There is insufficient capacity to operate and maintain waste water treatment facilities with ineffective monitoring of quality and performance by middle management staff of the WSP. In addition there is insufficient monitoring and enforcement by regulatory bodies. These problems have led to the dilapidated sewer infrastructure in urban areas.

Although the water sector reform aims to improve the situation for water and sanitation, it has so far concentrated mostly on water supply. However sanitation is now increasingly shifting into the focus of Kenyan political leaders, also with the help of international and regional efforts such as the declaration of the International Year of Sanitation.

4.8 Promotion packages and subsidy schemes not developed

The hygiene education and social marketing approach (creating demand) alone is not helping to increase sanitation coverage substantially. The expectation that this approach will boost demand and therefore increase the financing of sanitation facilities by households and institutions has not materialised because of the prevailing high poverty levels.

Low-income groups representing around 50% of the total population already struggle in their daily lives to buy basic goods (water, food, soap, medicine, etc.) and services (health, transport, etc.) necessary for survival. Even families with more or less regular incomes seldom have the funds for an adequate sanitation facility. Therefore it is important that promotion packages

include subsidisation options for sanitation facilities, offered to the low-income population in order to fast track sanitation coverage.

4.9 Water supply de-linked from sanitation

It is estimated that improved water supply alone leads to a reduction of diarrhoea incidents by 15%. Good water quality and sufficient water quantity reduces water-related morbidity by 33%²¹. Hygiene practices cannot be carried out without the supply of safe water. As long as water supply is isolated from sanitation interventions such as the provision of facilities and hygiene education, the huge benefits of combined water-sanitation efforts leading to around 65% reduction of diarrhoea incidents cannot be achieved.²²

The sector must ensure concurrent development of water and sanitation facilities. This means no more water projects without sanitation facility development and hygiene education, and more emphasis on sanitation projects than in the past!

4.10 Sanitation, solid waste and storm water drainage

Another area of concern linked to the sanitation sector is solid waste. Insufficient collection and disposal of solid waste has a negative impact on sanitation and the raw water quality. This is a big concern for the MWI and calls for close cooperation with the MoLG. One area of cooperation is the harmonisation of related activities such as avoiding entry of solid waste into the sewer system, and disposal sites operated in such a way that solid waste does not negatively affect water resources. Cooperation can also generate synergies by using biological waste in digesters at sewage treatment plants and onsite facilities (EcoSan). For this, separation of waste is needed.

To avoid overflowing of waste water systems and sewer flooding the sector institutions will have to harmonise their action with the Ministry of Roads and the Ministry of Local Government / local authorities.

4.11 Industrial waste water

Apart from excreta and sewer effluent, industrial waste water is one of the biggest polluters of water resources in Kenya. Industrial effluents have very different qualities from domestic waste water and they cause much more and long lasting or irreversible environmental damage. This is due to the toxic nature of industrial water containing e.g. heavy metals. Mixing industrial with domestic waste water will not solve the problem because treatment plants for public sewer systems cannot deal with the specific nature of the waste water coming from different industries. It would simply neutralise the efforts of the water sector to move towards productive sanitation and would not allow reaching the required standards for sewage treatment.

There is no justification for the public to bear the cost of treating industrial waste water from the business sector. It would be contrary to the principle of polluter pays. Therefore, the different industrial units need to have their own treatment facilities, made to suit the kind of effluent they discharge and complying with pre-treatment requirements for discharge into public sewer systems. Wherever such norms are missing the regulator has to fill the gap.

²¹ Esrey 1991, Hartley 1997.

²² Compare with chapter 3.3

4.12 Enforcement of standards, guidelines and bylaws

For many sectors, standards (e.g. for domestic and institutional sanitation facilities), norms and bylaws are available. Nevertheless, pollution of water resources is still rampant. Encouraging developments are now taking place within the sub-catchment areas where Water Resources User Associations (WRUAs) increasingly report polluters. But even in such cases progress can only be achieved if monitoring of raw water quality and enforcement of standards and bylaws are effective. This has not been the case so far for enforcement of the public sewer system and its effluent treatment. Monitoring and enforcement, like for sanitation, is a shared responsibility of different sectors / ministries. Cooperation and coordination is crucial especially when safeguarding the environment with the use of appropriate sanitation facilities that prevent pollution and save water.

In the water sector WASREB and the WSBs are responsible for enforcing standards for the public sewer systems and public onsite sanitation. Within the water sector close cooperation between these institutions and the Water Resources Management Authority (WRMA) is important in order to identify polluters and take the necessary corrective measures. WRMA has to cooperate closely with the other sectors involved in the monitoring of pollution.

For monitoring the disposal of excreta from household facilities close cooperation for enforcement of standards is needed between MWI and MoLG, and between MWI and MoPHS is required for hygiene at institutions and organization respectively.

4.13 Insufficient and non harmonised database and information

In the water sector, information concerning the sanitation situation is either nonexistent or inconsistent. Data on sanitation from other sectors and the KNBS is hardly usable for planning in the water sector. It does not provide a reliable picture or give precise numbers of installations needed at households, public places and institutions. Indications on investments are very approximate. Nevertheless, the magnitude of the challenge in sanitation seems to be apparent to everyone since good and detailed data on sanitation for some specific areas exist and can be extrapolated on national level.

In 2008 the MWI commenced the mapping of water supply and sanitation for low-income settlements in the urban setting. The presently developed baseline on water and sanitation for the urban poor (Maji data) will provide a better view of the need for sanitation infrastructure in the low income settlements and allow for an improved action plan and planning of investments. The approach taken so far ensures that all key stakeholders involved in collecting data and establishing information systems are harmonised, such as the Kenyan National Bureau of Statistics (KNBS) and development partners such as UN-Habitat, GTZ etc. who are very receptive.

5. Estimation of demand²³ for sanitation

Demand is created by awareness reinforcing the wish for appropriate sanitation facilities at household level, institutions and organisations (needs translated into demand). There is a lot of knowledge and know how and activities in demand creation in the sector of public health (MoPHS, civil society, etc.). Despite this growing demand, coverage is still low because many people cannot afford a decent toilet facility and standards are not sufficiently enforced.

The Kenyan Census Report of 1999 indicates a total population of 38.28 million. It also estimates the population in the 277 urban centres at 10 mio (35% of total). The urban population is growing significantly faster than the rural and it is estimated that by 2030 the percentage of the urban population will have largely surpassed the rural population. Presently the urban population is growing annually by 0.5 mio. This means that additional access for 0.5 mio people has to be provided in the urban centers annually just to maintain the present low coverage rate for sanitation. Reaching the MDGs for sanitation would mean to offer coverage to an additional 2 mio. people annually (around 1 mio each for urban and for rural according to the NWSS).

5.1 Demand at household level and coverage with sewer systems

The demand for sanitation coverage at household level is presently estimated at 6.3 mio in the urban and 11.8 mio in the rural setting.²⁴

The “Aftercare Study on the National Water Master Plan”, November 1998 estimated the coverage of the urban population with sewer systems at 17% (1.737 mio covered). It planned to increase coverage to 28.6% by 2010 (4.4 mio covered) with 29.15 bn KSh investment. In actual fact, only around 5 bn KSh has been invested in sewer rehabilitation and new systems since that time, raising coverage only by 1-2%. According to the first WARIS data, coverage in 2006 was around 19%.

Maintaining coverage by sewer system at 19% would need investments of around 12.4 bn KSh in the coming 12 years. This means that investments in sewer systems have to double in comparison to the investments undertaken in the last 10 years just to maintain a coverage rate of 19%²⁵. If the coverage through sewer systems were to be raised to 25% in 2020, investments of around 22.5 bn KSh would be needed. Development of sanitation infrastructure demands huge investments. Satisfying demand for sanitation with sewer systems is the most costly solution but appropriate in densely populated planned urban areas where such service level is affordable and sufficient water flow allows the system to function.

5.2 Onsite sanitation at household level

Considering the information provided under paragraph 3.1 it is more than obvious that large up-scaling of sanitation can only be achieved when investment programmes for sewers are complemented with large programmes for onsite sanitation. Considering the standard (MoPHS) of a maximum of 20 users per door (toilet) for a sanitation facility, progress towards the MDGs

²³ In the present paper, demand is the equivalent of lack of facilities

²⁴ Total Ppopulation in 2008 35.7 mio. Urban population 14.2 mio, rural 21.5 mio. According to the NWSS the coverage rate for sanitation is 55% in the urban and 45% in the rural setting.

²⁵ Additional coverage of 1.65 mio people in the time span of 2008 to 2020 multiplied with the unit cost the Aftercare Study of the Water Master Plan reduced by a factor of 25% for population densification effect.

will need the rehabilitation and construction of about 75,000 to 130,000²⁶ facilities per year depending also on the investment in sewer systems. Allowing subsidisation of around 300 KSh for sensitisations per installation, and to a very limited extend for the construction of the facilities, 30 bn KSh would need to be provided annually by the different sectors. The water sector could play a limited role in covering the estimated demand.

5.3 Demand at public places

Considering that Kenya had 277 urban centres (1999 census) and on average one public sanitation facility is needed for 25,000 inhabitants²⁷ (bus stations, markets, etc.) then in total over 1,000 sanitation facilities are needed. If half of them need to be rehabilitated or do not exist, then demand stands presently at around 500 units. If such installations are to be combined with public outlets for water (water kiosks) and designed for safe disposal of effluent and production of biogas (EcoSan technology, 2 mio KSh each) a total investment of 1 bn KSh over the next 10 years would be needed. The water sector shall contribute to this development because it can provide the knowhow for design and sustainable management, and fulfil its aspiration to combine water and sanitation (public outlets with public sanitation at markets, bus stations, etc.). In addition, it will be a significant contribution to protecting water resources.

5.4 Demand at schools and other public institutions (prisons, hospitals, etc.)

According to the Teachers Service Commission (TSC) there are approx. 18,784 primary and 4,569 secondary schools in Kenya (2008). Estimating that there is a need for rehabilitation and improvement at 30% of the schools²⁸ and adding some 200 public institutions with the same need (e.g. prisons, long term refugee camps) the demand will be 7,900 facilities. This represents an approximated investment need of 15,8 bn KSh²⁹. Although such institutions are responsible for the development of their own infrastructure, in general they do not possess the right know-how or sufficient funds, which lead to the implementation of facilities that pollute ground and surface water. Therefore, the water sector should contribute to the development of sanitation facilities at such institutions by the continuation of its ongoing support for constructing demonstration facilities with the production of biogas, reuse of effluent for agriculture and the safe disposal of the remaining effluent.

6. Approach, technology options and areas of intervention

6.1 Approach

6.1.1 Approach in the urban and rural setting

As the MWI has to report on sanitation coverage and needs to protect water resources from pollution it is determined to contribute significantly to solve the growing sanitation crisis. For this it will use the water sector institutions, the potential created by the water sector reform and

²⁶ The annual demand is estimated by the NWSS/PPIP: 2 mio people to be additionally covered annually until 2015

²⁷ Rough estimate based on existing facilities in urban centres, only a fraction of a population of 25,000 will use public toilets (e.g. travellers)

²⁸ The standard of the MoPHS is 20 girls and 25 boys (including urinals) per toilet (door).

²⁹ Estimating the costs of facilities at institutions at Ksh 2 mio comprising approximately 20 toilets, digester for biogas production, baffle reactor and facilities to use the remaining effluent for irrigation.

the efforts of the MoPHS to create an enabling framework for everyone to maximize their contribution according to the set standards.

In the urban setting the WSPs and the WSBs shall be involved in sanitation by improving operation and expanding sewerage systems, facilitating and promoting the implementation of household and public sanitation, and — as is the case for water kiosks — manage public installations with the help of private operators, especially if such facilities are combined with water kiosks. Thereby, the WSTF can play an important supporting role. WSPs shall make their waste water sewer plans available for the disposal of sludge from septic tanks by the municipalities or the private sector.

In the rural setting, promotion of household toilets shall be carried out by the CBOs with the help of NGOs whereby the WSBs and the WSTF have a supporting role to play. Close collaboration between the water sector actors and the existing structure of the MoPHS shall be ensured, for example, public health officers cooperating with DWOs (District Water Offices).

6.1.2 Requirements

Safe sanitation shall fulfil the requirements of the human rights to sanitation and shall only be counted as sustainable access to safe sanitation if safe disposal of effluent and excreta is guaranteed. In addition, special attention shall be given to the efforts to improve sanitation coverage and public health in the crowded urban settlements. Improving sanitation shall therefore contribute to better health, protection of the environment and to income generation. The approach will lead to a substantial contribution to poverty alleviation.

Next to sustainable access to sanitation according to the MDGs, public sanitation shall receive increasing attention. Facilities that receive high amounts of effluent (sewage treatment plants and onsite sanitation facilities at public places and institutions) shall be designed for the reuse of effluents to produce biogas, fertiliser and water for irrigation in order to protect the environment (stop pollution and water stress). New sewer systems shall be designed with more energy efficient technology and existing sewer systems shall be rehabilitated with such technology whenever possible.

In order to ensure that sanitation projects are successful, the specific situations in rural and urban areas need to be taken into consideration.³⁰

The operation of existing public sewer systems and in particular their treatment facilities shall receive much more attention than in the past. For this, enforcement by WASREB and WSBs shall be strengthened and management of the sewer system at WSPs enhanced. The WSPs shall explore all possibilities to outsource activities such as sludge disposal and cleaning of treatment plants to commercially-oriented professionals who make a business out of dealing with effluent and excreta. In addition, sector institutions shall encourage the involvement of the private sector for productive sanitation wherever possible and promote the development of curricula for training personnel of the private sector and other stakeholders to build capacity.

³⁰ Refer also to 3.1.1 and 3.6

Whenever external companies and organisations are contracted in the field of new technologies / approaches (sanitation for production, EcoSan, etc), cooperation with national structures shall be encouraged in order to ensure transfer of knowledge and technology.

6.1.3 Safe sanitation: The human right to sanitation and safe disposal

Kenya is a signatory of the human right convention. The relevant requirements are also specifically detailed for water and sanitation³¹. GoK through the MWI has begun streamlining its sector strategies to the requirements of the human rights to water and sanitation. The document “Water sector reform in Kenya and the human right to water” published by the MWI in 2007 details the efforts of the Kenyan water sector to move towards the full implementation of the human right and water requirements. Implementation efforts in the water sector are guided by the MWI which is promoting the alignment of the programmes of the different water sector institutions and stakeholders with the general criteria outlined by the human rights to water and sanitation:

General human rights requirements for sector development

- Transparency / accountability of duty bearers and the enforcement of means of redress
- Participation / empowerment
- Non-discrimination from which a poverty orientation is derived

These principles have so far guided the sector reform and have been taken on board by the design of the legal and institutional framework. The MWI is aware that a constant effort is needed to enforce these principles when it comes to the implementation of the reform.

Specific human rights to water and sanitation criteria

- Access to infrastructure of households but also at work and public places (which must be safe to access and use)
- Availability / continuity (of services)
- Acceptable quality / standards³²
- Affordability for the users

The MWI in collaboration with the sector institutions, development partners and civil society are in the process of making the sector gradually move towards the fulfilment of the specific criteria.

In addition to the above mentioned criteria safe sanitation requires safe disposal, treatment and reuse of effluent which shall be taken into consideration when counting coverage. It is insufficient when users can access well-constructed facilities in a safe way but individual and public health is no longer guaranteed because of inadequate disposal of effluent and flooding of facilities, contaminating the water sources by neighbouring settlements. In addition, all sanitation facilities shall be if possible near a water point for hand washing (e.g. roof catchments, tippy-taps, etc.)

³¹ Committee on Economic, Social and Cultural Rights, General Comment No. 15, The right to water (Twenty-ninth session, 2002), U.N. Doc. E/C.12/2002/11 (2003) [http://www.unhcr.ch/tbs/doc.nsf/\(Symbol\)/a5458d1d1bbd713fc1256cc400389e94?Opendocument](http://www.unhcr.ch/tbs/doc.nsf/(Symbol)/a5458d1d1bbd713fc1256cc400389e94?Opendocument)

The Committee has a mandate from the UN General Assembly to monitor state implementation of the Covenant and to issue general comments in order to provide states with a greater understanding of their obligations under the Covenant. The General Comment therefore serves as the single most authoritative interpretation of the ICESCR. United Nations human rights treaties are accessible at <http://www.ohchr.org/english/law/index.htm> and General Comments by UN human rights treaty bodies can be accessed at <http://www.ohchr.org/english/bodies>.

³² This includes proper design for gender issues, different age groups like children, disabled, etc.

The MWI is committed to achieving the Millennium Development Goals (MDGs) which emphasises sustainability of basic sanitation and includes the obligation to respect human rights and environmental criteria. Sanitation can only be considered sustainable if facilities are environmentally, economically and socially sustainable. This concept paper considers these areas with the same importance.

6.2 Technology options

Access to sanitation infrastructure can be provided through centralised (sewer) or decentralised (onsite) systems. Container toilets and buckets shall not be seen in Kenya as sustainable access to safe sanitation. The same applies to cases where untreated human waste is disposed into the water / environment leading to contamination.³³

Thus, the design of the sanitation facilities shall be linked to the need and behaviour of the toilet user and the ability to pay according to local conditions (e.g. for water scarce areas). Additional criteria to be used shall include ease and affordability of maintenance, environmental safety, energy efficiency and the reuse potential in agriculture. Wherever possible sanitation infrastructure should be linked to hand washing facilities in order to generate the maximum benefit from hygiene campaigns (e.g. combination of public toilets with water kiosk systems — demonstration project Naivasha).

Concerning sewer systems, technologies demanding a high input of energy shall be replaced by energy saving designs (e.g. ponds shall precede mechanical systems, sludge treatment shall be replaced by anaerobic treatment).

Any technical choice must be combined with the choice of a management system in order to achieve sustainability and optimise the different targets in sanitation.

6.2.1 Productive sanitation — the reuse of effluent and excreta as key target

World wide 160 million tons of synthetic nutrients are produced annually (phosphorus from fossil deposits, potassium / potash, methane from natural gas, etc.) with increasing pressure on the natural deposits steadily raising the price of fertiliser. At the same time conventional sanitation systems dump around 50 million tons of fertiliser equivalents annually.

This ratio in Africa is much higher, allowing covering the entire need for fertiliser through the reuse of effluent and excreta. In addition Africa loses 30-60 kg of nutrients/ha/year, the highest rate in the world. Therefore Africa should aim to replace chemical fertilisers with the effluent from sanitation systems and become self-sufficient in fertiliser. Kenya could spearhead this development to the benefit of its economic growth.

Therefore, the arguments for the reuse of water are as follows:

- Water scarcity, water stress and pollution of freshwater is increasing at an alarming rate
- The value of wastewater (nutrients and energy potential) is now widely recognised

³³ The system classification by WHO/Unicef JMP of improved sanitation —flush or pour-flush toilet/latrine (piped sewer systems, septic tank, pit latrine), VIP, pit latrine with slab, composting toilet — needs to be complemented by the element of containment as criteria.

- With the growing population, demand for fertiliser is increasing while the supply (production) of synthetically-produced nutrients (phosphorus, potassium, etc.) is dwindling
- MDG sanitation target contributes to MDG goals for environmental sustainability, health, and eliminating hunger and poverty

While the reuse of excreta and effluent in households is limited to the production of fertiliser, onsite sanitation installations at public and institutional places are generally ideal for the production of biogas as long as users number at least 500-1,000. While the main objective of reuse of excreta and effluent is the protection of the environment (stop pollution), production of biogas and manure is an added incentive for the operators in the form of generating income. This also applies to the sewer systems where treatment facilities can generate substantial amounts of energy through biogas production as well as manure and water for agriculture.

Some local authorities such as the City Council of Nairobi are active in the reuse of sanitation products on a limited scale. However, there is need for up-scaling and compliance to regulations.

6.2.2 Sewer systems (large collection networks and onsite treatment)

In general terms, sewer systems indicate that a large network for collection and treatment facilities are part of the system.

In Kenya the access to sanitation through sewer systems in the urban setting is presently around 19%. This choice of technology is a very effective way of disposal of excreta and grey water. Nevertheless, sewer systems are very costly to build and maintain and need a lot of water to function. In general it can be said that the tariff for sewer services needs to be far above the tariff for the provision of drinking water if cost recovery is to be achieved. It is already difficult to make consumers pay the full cost of water supply. Thus it is very hard to achieve self-financing of sewer systems by consumers. In addition, sewer systems need substantial time for planning and can only be constructed in a planned urban environment.

Consequently, sewer systems are not a realistic option in unplanned settlements, in settlements where water consumption is low and where the poor cannot be expected to cover the cost of their use. Unfortunately, in the past and at present the available funds are insufficient for the construction of such large collection systems. Nevertheless, sewer systems with large networks are an appropriate option for fast growing planned urban settlements as long as sufficient funds can be made available and the consumption of water is high enough to make the system work. If this is not the case, the options to fast track solutions such as onsite systems shall have preference.

An alternative are the onsite (sewer) systems which do not need large and very expensive networks. Such onsite treatment facilities composed of short collection piping, digester, baffle reactor and small wetland can serve many people with ablution blocks in slums.

6.2.3 Decentralised (onsite) systems

Decentralised systems may differ in technology. They range from simple facilities such as traditional pit latrines, ventilated improved pit latrines (VIP) and flush toilets, generally for

households, to more complex systems enabling the treatment of effluents and or the reuse of excreta and urine (EcoSan) for agriculture at public places and institutions. Many decentralised / onsite systems have all the key components of big sewage systems used by a high number of people such as public and institutional sanitation should preferably have onsite treatment facilities in order to avoid pollution and allow for reuse of effluent. Wherever the numbers of daily users exceed 500 the investment to allow the production of biogas and fertiliser is justified.

Decentralised systems are appropriate for households, public places and institutions such as schools, prisons etc. The choices for such systems need to be left to the users as religion, cultural background etc. are crucial factors for acceptance and sustainable use. A variety of different solutions is available in Kenya and shall be taken into consideration when sanitation activities are planned and implemented. Another area of concern is the disposal of excreta and effluent from onsite installations, which generally is not controlled in Kenya thereby making it a major source of pollution of surface and ground water.

In the rural setting EcoSan facilities using human waste can be combined with the use of biomass.

Traditional and improved pit latrines in the urban setting with little or no possibilities of safe disposal of excreta and urine are not solutions to be counted for safe sanitation. Watertight septic tanks are acceptable as long as the effluent is exhausted at the right time and disposed at regulated discharge points (e.g. wastewater treatment plant of WSPs).

6.2.4 EcoSan solutions

Ecological sanitation aims to break the cycle of diseases by protecting human health through hygiene and a clean environment and by making beneficial use of the nutrients of treated effluents and excreta. Therefore, EcoSan is not simply a technology but an approach.

EcoSan installations are replacing the pit latrine of onsite sanitation by an above-the-ground vault providing high levels of pathogen kill-off. The excreta are properly sanitised, thus eliminating propagation of diseases (safe recycling).

EcoSan offers a wide range of options for poor/rich, rural/urban, indoor/ outdoor, cultural needs, cleansing by paper or water, and the issue of odour from urine and faeces. With the separation of urine from excreta at the point of elimination each person could contribute to fertilising 300-400 m² of crop and produce 30 litres of humus (soil conditioner) annually. Another benefit is the production of biogas from anaerobic treatment systems.

Considering these benefits EcoSan will be one of the key focuses for the contribution of the water sector to the sanitation sector.

EcoSan facilities to be promoted shall include but are not limited to:

- Household: UDDTs - Urine Diverting Dehydrating Toilets (particularly in the rural setting).
- Public places: Low flush / pour flush toilets connected to a biogas digester and a baffle reactor for on-site pre-treatment (then linked to sewer lines or pond)

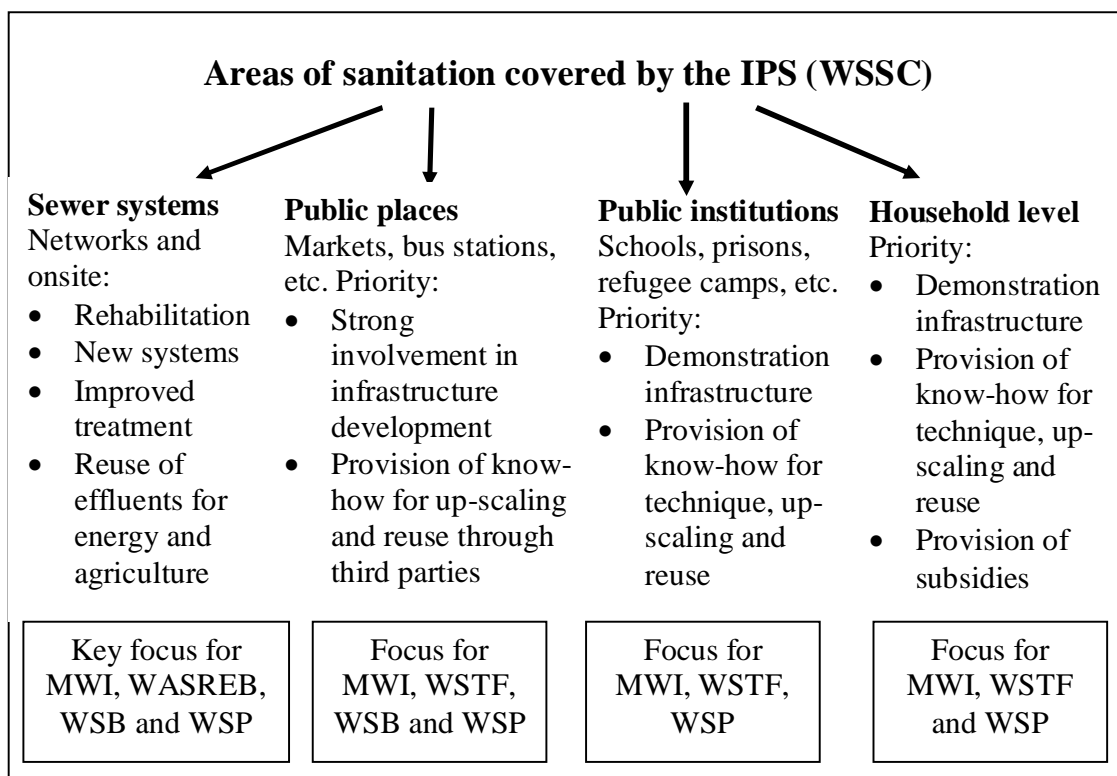
- Institutions: Low flush / pour flush toilets connected to a biogas digester and a baffle reactor for on-site pre-treatment, re-use of effluents in open ponds and/or for irrigation. Biogas used to replace commercial fuels (fire wood, kerosene, etc.) for cooking.
- Informal settlements: Low flush / pour flush toilets such as ablution blocks connected to a biogas digester and a baffle reactor for on-site pre-treatment (then linked to sewer lines or pond).

Some of the EcoSan treatment modules shall be incorporated into conventional treatment systems, bringing the benefits of anaerobic digestion (biogas) to reduce treatment area (ponds), provide bio-fertiliser (sludge) and water for irrigation. The EcoSan biogas plants can also digest the bio-degradable waste from markets and other sources and shall be used as exhauster service points.

Nevertheless, the above described solutions do not limit the need to develop other technical solutions that avoid pollution of the environment, help to reduce water use and take local needs into consideration.

6.3 Areas of interventions and priorities for the water sector support to sanitation

6.3.1 Planned intervention



The above table indicates the areas and the priorities the water sector will concentrate on for its contribution to sanitation.

First Priority: Sewer systems with large networks, onsite sewer treatment in high density areas and household sanitation subsidy programme through WSPs

- a) The MWI with the WSBs and the WSP will concentrate with first priority to renew and extend existing sewer systems with large networks. Rehabilitation of existing infrastructure and improvement of effluent treatment, as well as taking the options of biogas and fertiliser production gradually on board will be in the forefront. This shall be a significant contribution to the reduction of water pollution and thus to the improvement of public health. In order to maintain and (with sufficient funds) increase coverage by sewer systems the MWI will prepare an investment programme for rehabilitation / adjustment of existing systems and the construction of new systems. At the same time the MWI will promote the densification of connections at existing sewer networks in order to make sewer systems more attractive for investment and move to cost coverage.
- b) The same priority will be given to increase coverage in the high density areas — sanitation hotspots / slums. As available space at household level is limited in such settlements and up-scaling is possible when limited funds are used to maximize the number of beneficiaries, the technology of ablution blocks linked to onsite sewer systems (digester, baffle reactor, etc.) shall be used wherever a connection to the network is not possible or not economical. Where possible, ablution blocks shall always be combined with water kiosks.
- c) Wherever WSPs have the capacity to implement a subsidy programme for household sanitation similar to what has been carried out in Burkina Faso since 1992 (presently 40,000 household facilities are subsidised annually by the WSPs) the WSTF and WSBs shall offer promotion and support. For this the WSTF in collaboration with WASREB and the MoPHS shall elaborate a household sanitation promotion concept as part of the Project Implementation Concept for Sanitation (PICS) which shall be tested in selected WSPs. To implement such a scheme the WSPs shall support the municipalities in the elaboration of sanitation plans. Incentives and standards for such activities could be provided by the WSTF.

Actions of the first priority shall boost access to sanitation and protect water resources / public health in order to achieve the MDGs.

Second Priority: Public and institutional sanitation with onsite sewer treatment

- a) The water sector institutions shall contribute significantly to the establishment of facilities at public places in order to reduce the risk of contaminating water resources and spreading pandemics such as cholera. It also helps to offer dignity to people travelling or moving from home to work places etc. Such facilities shall be combined with public outlets for drinking water managed according to the Urban Project Cycle (UPC) concept of the WSTF and shall make use of the production of biogas and fertiliser wherever possible. Close collaboration with the WSBs as asset holders and WSPs which will contract and oversee the management of the facility (which is delegated to operators from the private sector) is key for sustainability and quality of services.
- b) In addition to disseminating the know-how for the construction of sanitation infrastructure which produces biogas and fertiliser, the MWI and other water sector institutions will continue to support public institutions such as schools, prisons, etc. This

support shall include the provision of drawings and advice regarding construction and management, as well as the construction of demonstration facilities. The intention is not only to improve public sanitation but also to protect the environment and especially water resources — a key responsibility of the water sector institutions. In its promotion of such infrastructure the MWI and the other sector institutions will not only provide know-how but also build demonstration facilities.

The actions under the second priority shall help to implement the human right to water and sanitation, as installation at public places and institutions do not count for the achievement of the MDGs for water and sanitation. Nevertheless, such installation help to achieve many other MDGs related to health, environment, etc.

Other support: Sanitation in rural areas for production (food security) and protection of water resources, promoted by WSTF and WRMA

The water sector institutions shall, with support from development partners, help to promote EcoSan for productive sanitation in order to protect water resources. This can be promoted by the WSTF with the help of WRMA and WRUAs. In addition, the MWI will link closely with civil society and donors who are willing to take up rural sanitation as a priority. Such support can also be channelled through WSTF in order to ensure standards set by the MWI and the MoPHS.

Sanitation projects shall always be closely linked to the support provided to improve access to potable and quality controlled (regulated) water — concurrent implementation of water and sanitation infrastructure development. This does not necessarily mean that all water projects need to spend the same amount on sanitation as on water. The overall spending in the water sector for sanitation shall be gradually increased to finally achieve spending to the same level as for water and gradually above. This implies that the water sector will strive for bigger sanitation projects (up-scaling) than in the past.

6.3.2 Emergencies / disaster response

It is estimated that every year one million Kenyans are affected by emergencies / disasters such as droughts, floods, internal displacements due to violence, cholera, etc. The leadership of disaster management is with the Office of the President, and the MoPHS is in the forefront in cases of emergencies linked to health issues such as cholera. For such disasters, the institutions of the water sector have to be available to provide drinking water and sanitation services or support the emergency organisation to fulfil such obligations. In the past, for instance during the 2006 drought in the Wajir region, the MWI has proven that water sector institutions can play a crucial role to help effectively address such emergencies with a rapid response approach. Although WSPs, WSBs and WRMA cannot compare with organisations specialised to handle emergencies, they can support their actions and ensure that response time is shortened by enhancing preparedness. For this the MWI will establish a rapid response group in case of disasters, WASREB will demand the elaboration of relevant plans at regional and local level by the WSBs and WSPs and the national WRMA will do the same for WRM through its regional offices. On national level the MWI will closely cooperate and harmonise actions with the Office of the President and other ministries playing a key role, such as MoPHS for WSS, and on

regional and local level the elaboration of disaster preparedness plans shall be harmonised with the relevant institutions from other sectors and organisations specialising in emergency relief.

7. Water sector institution contributions to the sanitation challenge

The contributions of the institutions and other stakeholders in the water sector towards fast-tracking sanitation coverage shall comprise the following responsibilities.

7.1 Sector institutions involvement (role of different actors)

7.1.1 National level

On national level the concerned institutions are the MWI, WASREB, WSTF and KEWI and their responsibilities will be as follows:

7.1.1.a MWI

- Establish unit for sanitation within the MWI for the promotion, control and monitoring of sanitation in the water sector. The sanitation unit shall also enhance cooperation with other ministries and institutions from other sectors and provide information and knowledge (e.g. universities for curricula, national/local companies as well as other sector institutions on the design and operation of sanitation facilities like EcoSan)
- Active participation in the inter-sectoral coordination for sanitation.
- Coordination of water sector players.
- Apply SWAp to the sanitation sub-sector.
- Enactment of legislation and strategy formulation for sanitation in the water sector.
- Enforcement of sanitation policies and strategies in the water sector through strategic action plans.
- Supervision and control of implementation through monitoring and corrective measures.
- Ensuring alignment of all sector players to policies and strategies.
- Mobilisation of funds for sanitation.
- Monitoring the development of coverage for sanitation and harmonisation of data with the MoPHS and Kenya National Bureau of Statistics.
- Maintain sector information systems with details on sanitation.
- Establishment of action groups in case of emergencies to coordinate action within the water sector and harmonise with the Office of the President and other line ministries such as MoPHS.
-

7.1.1.b WASREB (Regulator for Water and Sanitation)

- Enforcement of water sector sanitation concept through regulation at WSBs and WSPs.
- Elaboration of standards for facilities and enforcement of standards for sanitation issued by the different ministries (MoPHS, MWI, Environment, etc.) through guidelines for WSBs and WSP.
- Provision of incentives for WSPs to be involved in sanitation.
- Monitoring development of sanitation through WARIS information system.
- Elaboration of a subsidy concept for sanitation.

- Oblige WSBs and WSPs to elaborate emergency plans.
- Issue guidelines on the elaboration of sanitation plans (for towns) jointly to be prepared between the Municipalities and the WSPs.

7.1.1.c WSTF (Financing mechanism for access and service provision of the low income population)

- Provision of funds for sanitation in the water sector carried out by the WSP in the urban setting and community and civil society organisations in the rural setting (this shall include subsidies for the establishment of sanitation facilities on all levels).
- Ensuring adherence to water sector sanitation concept and standards in sanitation projects funded by the WSTF.
- Inter-sectoral coordination on implementation level for projects funded by the WSTF.
- Recording progress of projects for sanitation and their impact through an appropriate information system.
- Elaboration of financing proposals for sanitation including capacity building on all levels.
- Include the establishment of sanitation plans for towns in the incentive schemes for WSPs

7.1.1.d KEWI (Kenya Water Institute)

- Incorporate sanitation into the training programme for the water sector institutions, including EcoSan technology, and construct demonstration facilities for know-how transfer.
- Elaborate training modules for sanitation technologies introduced in Kenya with particular emphasis on sewage treatments, EcoSan and reuse of effluent and excreta for agriculture and biogas production.
- Carry out research on sanitation technologies.
- Elaborate and carry out a training module on the elaboration of sanitation plans for WSPs.

7.1.2 Regional Level

On regional level the WSBs shall be involved whenever sanitation assets enter their asset register.

- Active participation in the inter-sectoral cooperation on regional and local level, including planning, financing and construction.
- Coordination of sector players on regional and local levels.
- Implementation of sanitation policies and strategies in the water sector through action plans aligned to the IPS (WSSC).
- Include pro-poor sanitation into investment planning.
- Supervision and control of implementation and operation of sanitation infrastructure according to specified standards through close monitoring.
- Ensuring alignment of all sector players on regional and local levels to sanitation policies and strategies.
- Mobilisation of funds for sanitation through the elaboration of project proposals for investments which include capacity building measures on local level for the involved WSP, private sector and civil society organisations.

- Introduction and updating of water sector information system including sanitation.
- Maintaining asset registers for sanitation infrastructure.
- Offering incentives for WSPs to take onsite sanitation on board.
- Report on sanitation facility development and operation.
- Enforce obligations of safe disposal of excreta and effluents.
- Enforce standards for effluent treatment.
- Create intake point for excreta and effluent disposal at existing sewer systems especially where there is a high risk of pollution of water sources and the environment (e.g. low-income urban settlements).
- Elaborate emergency plans for the WSB areas.
- Promote the elaboration of sanitation plans by the WSPs.

7.1.3 Local level

The concerned actors are the WSPs/utilities, other private sector actors and NGOs.

7.1.3.a WSPs/utilities

- Participate in the construction of sanitation facilities financed by the WSTF and/or the WSBs according to the UPC (planning, overseeing of sensitisation and marketing measures financed through the water sector, training of artisans for construction and operation, provision of funds for the promotion of sanitation according to contract arrangements, keeping record of facilities promoted by water sector institutions, etc.).
- Operate or monitor operation of sewer systems and onsite sanitation at public places — facilities which are in the assets register of the WSBs and included in the SPAs.
- Report on sanitation facility development and operation.
- Ensure safe disposal of excreta and effluent by the private sector and NGOs, etc.
- Elaborate emergency plans.
- Support the Municipalities to elaborate sanitation plans.

7.1.3.b Other private sector actors

- Construct sanitation facilities according to the agreed standards.
- Operate sanitation facilities at public places according to the contractual arrangements.
- Dispose excreta and effluent at designated collection points.

7.1.3.c NGOs / CBOs

- Carry out sensitisation and market measures according to given standards.
- Participate in the construction of sanitation facilities by ensuring that national standards are applied.
- Participate in the training of artisans and operators for sanitation facilities.
- Participate in the collection of data and other relevant documents according to UPC.
- Provide information on the satisfaction of users of sanitation facilities.

7.1.3.c WRUAs

- Identify and report sanitation facilities polluting the environment.
- Contribute to enforce standards for sanitation.

7.2 Minimum targets for the water sector involvement in sanitation

Within the water sector, the minimum targets for sanitation follow the priorities set for the different areas of interventions (chapter 6.3). In addition, it has to be underlined that the target figures are provided under the present budget constraints and need to be revised annually as sanitation receives higher priority also among the development partners. Any up-scaling of the target figures shall be included in the cooperation efforts with other ministries, in particular with the MoPHS.

7.2.1 Sewer systems with large networks, onsite sewage treatment in high density areas

The MWI is aiming at an increase of coverage through sewer systems from the present 19% to 25% by 2020, which will bring around 435,000 additional people to sanitation annually³⁴. For this the allocation of funds shall be raised to 22.5 bn KSh which represents an average of 1.875 bn KSh annually. In addition, the MWI will carry out an assessment for rehabilitation and opportunities for the reuse of effluent in all sewage treatment facilities operated by WSPs and give such actions priority in the investment planning.

In order to increase coverage in the sanitation hotspots (urban settlements of the poor)³⁵ the WSTF and the WSBs/WSPs shall promote the construction of 30 units of ablution blocks, with an average of 20 toilets per unit, linked to a sewer network or an onsite treatment facility such as digester, baffle reactor, etc. Such facilities shall be combined with water kiosks and showers wherever possible. For this, 75 mio KSh will be necessary annually and shall offer additional access to sanitation for around 120,000 urban poor.

7.2.2 Sanitation facilities at public places

Through the WSTF, WSBs and WSPs at least 30 sanitation facilities at public places shall be constructed annually which ensure the reuse of effluent in the form of biogas and/fertiliser production. This represents an investment volume of a minimum of 60³⁶ mio KSh per year and, with an average of 10 toilets per unit, will offer access at public places for 60,000 people. Whenever possible the WSTF shall enhance efforts to acquire donor funding to multiply the number of annually constructed public toilets. Wherever possible such facilities shall be combined with outlets of drinking water (water kiosks) and public showers and enter the asset register of the WSBs.

7.2.3 Sanitation at institutions

A minimum of 10 demonstration facilities with the reuse of effluent shall be constructed annually through the WSTF, representing a volume of investments of at least 20 mio KSh annually. Donor funds should be acquired to increase the support for such sanitation facilities which according to the demonstration project serve an average of 1,000 people (pupils, patients, prisoners, etc.). In addition, the MWI in close collaboration with the WSTF will provide know-how for such facilities according to demand.

³⁴ Presently 1.9 mio people (19% of the urban population) are covered with sewage systems. In the next 10 years with a coverage of 25% 4.35 mio will be covered.

³⁵ Following the guidance of Vision 2030 of the Government of Kenya.

³⁶ One facility is estimated at 2 mio KSh.

7.2.4 Sanitation in households (rural and urban)

Through the WSTF, in collaboration with the WRMA/WRUAs, 1,000 demonstration facilities in rural areas shall be constructed with the reuse of excreta and urine, representing a volume of investments/subsidies of around 10 mio KSh per year. This target can be enlarged if more donor funding is provided to the WSTF for household sanitation facilities. In addition, the MWI in close collaboration with the WSTF will provide know-how for such facilities according to demand. This will help 20,000 people³⁷ in the rural areas to gain additional access according to the MDGs and improve their income and food security.

In the urban areas the WSPs can carry out a subsidy programme for household facilities like is the one carried out in Burkina Faso where about 400,000 additional people gain access to sanitation annually³⁸. For more than 10 years this programme was financed through the water bill with no external support. Such a programme can be built up gradually in Kenya. It is estimated that a number of WSPs are interested in such a subsidy programme which can be prepared in 2009/2010 and increasingly enlarged thereafter, reaching approximately 200,000 people additionally per year³⁹. In these areas a variety of technologies shall be used according to the household preference. Nevertheless, subsidy level shall increase for facilities that have a higher impact on pollution control.

The table below offers a summary of the areas of involvement and the annual minimum targets

Priority ⁴⁰	Systems and people reached annually (KSh/capita)	Annual funds	Key water sector institution	Focus on: ⁴¹
1	Sewer with extensive networks reaching 435,000 additional people (KSh 4,310/c)	1.875 bn	MWI, WSBs	MDGs
1	Sewer with onsite treatment / ablution blocks reaching 120,000 (KSh 625/c)	0.075 bn	WSTF, WSBs	MDGs
3 ⁴²	Subsidy programme urban household sanitation reaching 200,000 underserved from 2011 on (KSh 1,000/c)	0.200 bn	WSTF, WSPs	MDGs
2	Public sanitation reaching 60,000 people (KSh 1,000/c)	0.060 bn	WSTF, WSBs	HR
2	Institutional sanitation reaching 10,000 people (KSh 2,000/c)	0.020 bn	WSTF	HR
3	Rural sanitation for productive use reaching 20,000 underserved (KSh 500/c)	0.010 bn	WSTF, WRMA	MDG

³⁷ The demonstration projects show that in rural areas, with the reuse of urine and excreta and where the owners are interested to share toilets, an average of 20 people use each Ecosan facility.

³⁸ With 40,000 household facilities in urban areas constructed annually.

³⁹ An average of KSh 10,000 subsidy per toilet with 10 users.

⁴⁰ Priorities are set according to the disbursement of funds. This corresponds with the contribution the water sector institutions can possibly provide. Therefore the water sector contribution does not necessarily follow priority of spending of other sectors.

⁴¹ Here, the main focus is expressed as all actions contribute to the realisation of the human rights to sanitation.

⁴² As the concept is not yet developed the priority given at the moment is 3. Nevertheless, if demonstration projects indicate that the Burkina Faso experience can be replicated in Kenya the action should receive a high priority too.

In order to achieve and document these targets harmonisation of planning and budgeting is needed to facilitate resource allocation, monitoring and evaluation. Thereby sector planning shall be linked to the Environment, Water and Sanitation Sector Plan (2008-2012), the MTEF/Programme Based Budgeting, MTEF Environment, Water and Sanitation Sector Working Group Reports (MWI, MoEnvironment, MoPHS) and NIMES.

8. Involvement of private sector / PPP

The private sector can contribute in the financing and operation of sanitation facilities. Presently the private sector is engaged in the operation of water kiosks, ablution blocks, collection of excreta, etc and involved in other outsourced activities by the WSPs.

This private sector participation can be up-scaled to the operation of sewer networks and waste water treatment plants. Presently, most of the WSPs do not have the necessary skills and knowledge to optimise operations of sewage systems. In addition, they tend to concentrate more on water supply than sewers. Private sector involvement can bridge this gap, speed up improvements and shall be involved wherever it is cost effective. This will professionalise the sanitation sub-sector and introduce a commercial orientation similar to the water supply sub-sector. The private sector can also act as consumers or intermediaries for biogas and fertiliser.

However, the participation of the private sector will need to be included in the regulation of water and sanitation service provision in order to ensure compliance with standards such as the safe disposal of excreta by exhausters.

The MWI and WASREB will create a conducive environment for Public Private Partnership (PPP) and encourage the sector institutions (WSTF, WSBs, WSPs) to link up with the private sector for joint financing and implementation of sanitation interventions. This shall also include financing concepts such as BOT (Build-Operate-Transfer), etc.

9. Financing of IPS (WSSC) and funding mechanism

9.1 Funding requirements and financing mechanism

The sources of financing sanitation are multiple. Sewerage systems should be financed wherever costs of O&M and repayment of loans can be achieved. As the WSPs and WSBs struggle to move towards O&M, cost recovery in a first step and thereafter to full cost recovery. Subsidisation of sewage systems by water supply is not an option at present. The MWI shall in these cases try to obtain at least soft loans from development partners for the financing of sewage systems. Other onsite systems for the poor such as ablution blocks in the slums or public toilets in low income areas should be subsidised. For this the MWI through the WSTF shall approach the DP for loans wherever the national budget cannot provide sufficient funds.

Household facilities and institutional sanitation shall in general be financed by the users. Nevertheless, as the past has shown in all developing countries, coverage will not move ahead sufficiently even with extensive marketing. Incentives should be offered to the users to construct adequate facilities. Wherever such approaches have been implemented, such as in Burkina Faso,

the country has gained speed in the move towards the MDGs in sanitation. Such facilities can be financed through a sanitation levy as part of the water bill or by Government and DP contributions. Such subsidies should be carefully designed in order to promote environmentally-safe facilities and to target only poor and low income families. Such subsidies should also cover sensitisation for hygiene and marketing measures. Other consumers of water could receive credits from the WSPs which should be part of the tariff negotiations between WASREB, WSBs and WSPs.

In order to obtain the targets of this Implementation Plan, the coverage by sewage systems shall be raised to 25% in 2020. The financing requirements for this target are 22.5 bn KSh representing an annual contribution of 1.875 bn KSh. These funds (national and external) shall, according to the principles of the sector reform, be channelled through the WSBs which will be the asset holders of the infrastructure.

Funds for household facilities, as well as for public places and institutions, provided through the water sector, shall preferably be channelled through the WSTF. This will ensure that sanitation facilities promoted by the water sector are carried out to specified standards and that more complex technology is sustainably managed and functioning in the long term.

In the case of sanitation facilities in households and public places, the WSTF will channel funds through the WSBs with the involvement of registered WSPs in order to ensure the participation of professionals and sustainable use of the facilities. The assets for facilities at public places provided by the water sector shall be part of the asset register of the WSBs and integrated in the SPAs signed with the WSPs. The involvement of registered WSPs, which will contract private operators and oversee compliance with standards, will ensure sustainability of operation and prevent pollution.

The WSTF will provide a minimum of 63 mio KSh annually for the construction of facilities in households, public places and public institutions using national and external funds following the priorities outlined under chapter 6.2 of the present IPS (WSSC).

In addition, the WSTF shall enlarge its sanitation activities for up-scaling, based on its sanitation plan, whenever a development partner shows interest for financing. However, technologies offering recycling/re-use options shall have priority.

Sanitation at public places could be subsidised as much as possible (up to 100%) whereby sanitation for households and public institutions could be subsidised to around 30-50% depending on the income level of the beneficiaries. Other African countries have put in place a very successful sanitation subsidy policy boosting access, e.g. Burkina Faso, where the WSP subsidises 40,000 facilities annually.

9.2 Self-financing of O&M costs

The entire O&M costs of sewer systems shall be financed by the beneficiaries through billing for sewerage services. Since beneficiaries of sewerage services are within a higher income bracket, cross subsidisation from drinking water supply to sewerage shall be avoided in order not to

punish the poor (refer also to 9.1). WSPs and WSBs shall separate costs for the provision of water from sewerage services in order to implement national policy on self-financing.

Self-financing of O&M costs shall also be achieved by the public facilities financed through the water sector and operated by WSPs.

The financing of O&M costs for facilities for households and institutions is to be guaranteed by the users.

9.3 Closing the financing gap

As demonstrated in chapter 4 the need for sanitation investments is huge on all levels and the available funds are very limited. Measures to close the gap are crucial.

GoK should double its effort to close the financial gap by:

- Putting sanitation higher on the political agenda
- Using the momentum of the International Year of Sanitation
- Providing more funds through the national budget
- Tapping the growing awareness of the international community on the sanitation crisis and have project proposals prepared to be submitted to interested donors
- Using the water sector institutions for sanitation
- Promoting the involvement of the private sector and encouraging capacity building as well as financing by private sector institutions

10. Enforcement and regulation / standards for sanitation

In order to ensure the implementation of this sanitation concept the sector players must comply with the proposals contained herein and the standards set for the sub-sector.

10.1 Enforcement of IPS (WSSC)

Presently, the various stakeholders in the sanitation sub-sector implement their projects according to different standards, operational concepts, designs, etc. This leads to a huge waste of funds as facilities are degrading, not used by consumers or not sustainable.

In collaboration with other authorities / national institutions the WSTF shall elaborate a national concept for project implementation for sanitation, such as the CPC or UPC for water based on the present IPS (WSSC). Such a national Project Implementation Concept for Sanitation (PICS) shall be a reference for all other sector players. The MWI will ensure that all funds channelled through the WSTF, WSBs and WSPs shall comply with the PICS.

Compliance to IPS (WSSC) and PICS by other players within and outside the sector (other than sector institutions) will present a bigger challenge. Communication, provision of incentives / subsidies and monitoring will be crucial to bring such players on board.

The MWI shall use the different fora such as WSWG, sector conferences, inter-ministerial committees, etc. to communicate standards and national concepts and the benefit of compliance.

The same communication will be carried out by the WSBs and the WSPs in their area of operation. Know-how and toolkits such as drawings, handbooks and other documents shall be availed to NGOs, communities, private sector players, etc. as a form of incentives for alignment.

Whenever subsidies are provided the beneficiaries shall be required to comply with national standards.

10.2 Regulation / standards

Leaving the sanitation challenge to the private sector and civil society organisation has had a negative impact. The coverage rate for sanitation has not changed significantly, inappropriate disposal of excreta and effluents are increasing, the quality of facilities and services are often poor and new technology like biogas production are not introduced on large scale. The effect is that waterborne diseases and pollution of water resources do not decrease, hampering social improvements and economic growth.

The MWI will enhance its contribution to the sanitation sector by improving the framework, setting standards within their field of responsibilities (infrastructure development) and offering incentives for other players in the water sector to participate in the development of sanitation facilities.

The need for regulation becomes evident when considering the increasing pollution of the environment and water resources, as well as the astonishing often rapid degradation of sanitation facilities shortly after being handed over to the users. Introducing new and more complex technologies under the present conditions will mean that more funds will be wasted if no standards are enforced through the water sector for the construction and management of facilities. Minimum standards for facilities based on national and international experience will complement other standards originating from the different sectors such as standards for sensitisation and marketing from the MoPHS. It is important that all players in the different sectors engaged in sanitation comply with such norms and standards.

WASREB has issued standards for water supply which are enforced by the WSBs and through the financing of national concepts via the WSTF. Since one of the major objectives for adequate sanitation is the protection of the environment with particular focus on water resources, WASREB in cooperation with WRMA need to complement standards for water supply with minimum requirements on sanitation. Sanitation can no longer be given lower priority than water in this respect.

Enforcement of standards is also a cross-cutting issue whereby all ministries concerned shall take up the standards originating from their respective sector. Water projects combined with sanitation focusing on the establishment of facilities shall not be carried out without the minimum requirements for sanitation facilities (MWI), for sensitisation and marketing (MoPHS), for education programmes (MoE), etc. Regulatory functions for sanitation in the water sector will be carried out in close collaboration with the MoPHS.

11. Monitoring and evaluation of the IPS (WSSC)

The IPS (WSSC) contributes to implementing the water sector policy with particular focus on the protection of water resources and access to water and sanitation. It provides guidance in the area of sanitation to the sector institutions, service providers, development partners and other stakeholders. Therefore, the sector institutions shall include the responsibilities described above in their portfolio and strategic action plans. This shall ensure that sanitation is also included in the performance contracts, the rolling activity and budget planning.

The MWI shall make sector institutions on national and regional level such as the WASREB, WSTF, WAB and WSBs responsible to contribute to the implementation of the sanitation activities derived from the IPS (WSSC).

The implementation of the IPS (WSSC) shall be ensured through the monitoring of the performance indicators on sanitation being part of the performance contracts at all sector institutions. The different information systems such as WARIS, PROMIS etc. shall gradually include increasing information on sanitation. Data on sanitation collected by the water sector shall be disseminated and compared to data provided by the other concerned ministries. There is also a need to ensure that the data/information on the outcome indicators of the water sector are closely linked and harmonised with the NIMES outcome indicators. On sanitation coverage improvement, the MWI will particularly concentrate on sewer systems and priorities outlined above for facilities at public places.

The MWI shall pay particular attention to the integration of sanitation in the performance contracts, in the information systems, investment planning tools, etc. to ensure that sanitation has the same priority as water in the implementation of the NWSS, PPIP and the IPS (WSSC).

There shall no longer be reporting on water without integrating sanitation. The performance of sector institutions concerning their contribution to sanitation and the success of the implementation of the IPS (WSSC) shall be made public.

In addition, the monitoring and evaluation (M&E) system of the water sector including sanitation shall be linked to the national integrated M&E system currently being coordinated by the MoPND and Vision 2030.

12. Strategic action plan for up-scaling

The IPS (WSSC) shall lead to up-scaling of sanitation coverage (MDGs), fulfilment of human rights to sanitation and protection of the environment, all in the interest of improving public health.

12.1 Up-scaling

The implementation of the IPS (WSSC) shall lead gradually to up-scaling by going beyond the proposed minimum annual investments for sanitation. In addition, actions need to be accelerated.

Acceleration and up-scaling shall be achieved by concentrating on the implementation of PICS which will ensure that per-capita investment is as favourable as possible. Priority of spending will go to technologies and areas which achieve the highest benefits. Onsite sanitation such as ablution blocks, public and institutional facilities with treatment facilities, household facilities such UDDTs, etc. shall receive priority attention because they can be rapidly constructed and reach a high number of users.

Alignment of other stakeholders to national concepts and standards will support acceleration, up-scaling, and sustainable operation and use of facilities.

The adoption of the PICS and the demonstration of up-scaling potential are likely to attract more funds for the sanitation sub-sector which should preferably be channelled through the WSTF. The WSTF in cooperation with the WSBs and the WSPs has to play a crucial role in demonstrating the capacity for rapid implementation on a large scale.

12.2 Action plan

The following strategic action plan is derived from the sector policy, NWSS and the previous chapters of the present IPS (WSSC). The actions are clustered by strategic areas and by institutions and other sector players.

The key strategic areas of action for sanitation in the water sector are:

1. Putting sanitation higher on the agenda and mobilising all stakeholders in the water sector
2. Mainstreaming of sanitation in the water sector
3. Linking water resource management to sanitation
4. Focusing on the low-income settlements in the urban setting (pro-poor sanitation)
5. Cooperating with other sectors
6. Accelerating infrastructure development to increase access to facilities, protect water resources and improve public health
7. Combining water and sanitation as well as sanitation infrastructure development with hygiene education and advocacy/social marketing
8. Financing sanitation infrastructure

12.2.1 Strategic actions by specific objectives

1. Put sanitation higher on the agenda, develop a framework of action, solicit full support and commitment from all stakeholders in the water sector		
Review the ToR of the sanitation working group of the MWI	MWI	2010
Focus the budget planning in all relevant sector institutions as much on sanitation as on water	MWI, all sector institutions	2010 on
Include sanitation in all sector and sub-sector reports	MWI,WSTF, WSBs,WASREB	2010 on
With the adoption of annual sector undertakings, always consider sanitation	MWI and all sector players	2009 on
Increase the percentage of investments for sanitation in relation to water	MWI, WSB, WSTF	2009 on
Publish regularly best practices on sanitation	MWI, all sector	2011 on

	institutions	
Apply SWAp to the sanitation sub-sector (sector conference, SIP, SIS, etc.)	MWI	2010 on
Sensitise all sector institutions to be involved in sanitation including the registered water providers	MWI	2010 on
Ensure that all sector institutions include sanitation in their business plans according to the IPS (WSSC)	MWI	2011 on
Have indicators for sanitation included in the performance contracts of all relevant institutions	MWI	2010 on
Use all coordination instruments for sanitation to involve all water sector players and align their action to the IPS (WSSC)	MWI	2010 on
The WSTF to include sanitation in the Community Project Cycle (CPC) and Urban Project Cycle (UPC), harmonise with PICS	WSTF	2010
All sanitation projects include a capacity building component aligned to the IPS (WSSC), also addressing the needs of the private sector and civil society	MWI, WSBs, WSTF	2011 on
Ensure that all new water projects include at least a sanitation component	MWI, WSBs, WSTF	2009 on
Sanitation becomes part of the regulatory framework for water supply and water resource management	WASREB, WRMA	2010 on
The information systems in the water sector shall include sanitation, which shall also be taken care of when data are collected in the water sector	MWI, WSTF, WSBs, WASREB, WRMA	2009 on
Identification of focal person for sanitation at all concerned sector institutions	MWI, all institutions	2010

2. Increase coverage of sanitation (including public sanitation) by particularly concentrating on sanitation hotspots		
Place public sanitation in “hotspots” within or near low-income settlements in the urban setting	WSTF, WSBs	2009 on
Offer incentives to WSPs to be involved in the promotion and operation of sanitation facilities in or near the settlements of the urban poor	WASREB, WSTF, WSBs	2010 on
Establish discharge points at sewer lines near the settlements of the urban poor	WSBs, WSPs	2010 on
Increase the number of project proposals for sewer systems and onsite sanitation in line with the IPS (WSSC)	MWI, WSTF, WSBs	2010 on
Include pro-poor sanitation in investment planning for rural and urban areas	WSBs	2009 on

3. Enhance cooperation/harmonisation with other sectors on sanitation		
Enhance cooperation with the MoPHS, participate actively in the working groups chaired by the MoPHS	MWI	2010 on
Offer support to the Ministry of Education (MoE) for curriculum concerning water resource protection and appropriate sanitation facilities	MWI	2011 on

Make data and results from water sector information systems available to other sectors and have them compared with data from other sources	MWI	2010 on
Harmonise data collection with the National Bureau of Statistics	MWI, WSTF	2009 on
Set standards for sanitation facilities in collaboration with the other concerned ministries and ensure their enforcement	MWI, WASREB, WSTF, WSBs	2011 on
Support municipalities to elaborate sanitation plans for the towns	WSPs	2011 on

4. Improve enforcement of sanitation standards and national sanitation technology concepts to ensure efficient disposal of waste water at user level		
Ensure complementarities and harmonisation of standards for sanitation within the water sector and with other sectors	MWI, WASREB, WSTF	2010 on
WRMA/WRUAs include sanitation aspects into their catchment management plans	WRMA national and regional	2011 on
WRM sub-sector reporting includes sanitation issues	WRMA	2012 on
Give preferences to recycling technology for infrastructure development of sanitation when setting standards	MWI, WSTF, WSBs	2010 on
Ensure that newly designed infrastructure integrate advanced technology for the reuse of effluent	MWI, WSBs	2012 on
Enforce discharging of effluent by bowsers at regulated places (e.g. sewage treatment plants / network intake points)	WASREB, WSBs, WSPs	2012 on
Ensure that public water outlets at markets, bus stations etc. with high traffic are combined with sanitation facilities	WSTF, WSBs, WSPs	2010 on
Include in all sanitation measures for infrastructure soft components (hygiene education / social marketing) and ensure implementation according to the standards issued by the MoPHS	WSTF, WSBs, WSPs	2010 on

5. Improve operation of sewage treatment and promote the economic and social benefits of wastewater⁴³		
Optimise existing sewer systems and explore the possibility of reuse of effluent	MWI, WSBs, WSPs	2012 on
Establish a training programme on good operation of sewerage plants	WSBs, KEWI	2011 on
Enhance monitoring of effluent quality from sewerage plants	WSBs	2011 on
Implement an annual construction programme of demonstration facilities for sewerage with recycling options (EcoSan) at public institutions	MWI	2011 on

6. Mobilise increasing funds for sanitation and provide incentives for implementation		
Introduce tariffs for sanitation based on real costs.	WASREB	2010 on
Ensure that tariff adjustment proposals separate the costs for water and sanitation	WASREB, WSBs, WSPs	2010 on
Set tariffs for sanitation for cost recovery and elaborate a	WASREB	2010 on

⁴³ Waste water includes human waste from dry sanitation systems

concept on subsidies		
Allocate increasing budgets to sanitation	MWI	2010 on
Encourage DPs to finance more sanitation projects within the framework of the SWAp	MWI, WSTF	2011 on

7. Ensure adequate response to emergencies / disasters that require sanitation intervention		
In cases of emergencies / disasters a coordination group for rapid response is established	MWI	2010 on
Include disaster preparedness in the regulatory framework	WASREB, WRMA	2011
Elaborate emergency preparedness plans	WSBs, WSP, WRMA, WRUAs	2012

12.2.2 Strategic actions by institution

MWI

Review the ToR of the sanitation working group of the MWI		2010
Focus the budget planning as much on sanitation as on water		2010 on
Include sanitation in all sector and sub-sector reports		2010 on
With the adoption of annual sector undertakings always consider sanitation		2009 on
Increase the percentage of investment for sanitation in relation to water		2009on
Publish regularly best practices on sanitation		2011 on
Apply SWAp to the sanitation sub-sector (sector conference, SIP, SIS, etc.)		2010 on
Sensitise all sector institutions to be involved in sanitation, including the registered water providers		2010 on
Ensure that all sector institutions include sanitation in their business plans according to the IPS (WSSC)		2011 on
Have indicators for sanitation included in the performance contracts of all relevant institutions		2010 on
Use all coordination instruments for sanitation to involve all water sector players and align their action to the IPS (WSSC)		2010 on
All sanitation projects include a capacity building component aligned to the IPS (WSSC), also addressing the needs of the private sector and civil society		2011 on
Ensure that all new water projects include at least a sanitation component		2009 on
The information systems in the water sector shall include sanitation, which shall also be taken care of when data are collected in the water sector		2009 on
Identification of focal person for sanitation at all concerned sector institutions		2010 on
Give preferences to recycling technology for infrastructure development of sanitation		2010 on
Enhance cooperation with the MoPHS, MoLG and other sectors, participate in the working groups chaired by the MoPHS		2010 on
Offer support to the MoE for curriculum concerning water resource protection and appropriate sanitation facilities		2011 on
Make data and results from water sector information systems available to other sectors and have them compared with data from other sources		2010 on

Harmonise data collection with the National Bureau of Statistics	2009 on
Ensure complementarities and harmonisation of standards for sanitation with other sectors	2010 on
Ensure optimisation of existing sewerage systems and explore the possibility of reuse of effluent	2009 on
Ensure that newly designed infrastructure integrate advanced technology for the reuse of effluent	2010 on
Increase the number of projects proposals for sewerage systems and onsite sanitation in line with the IPS (WSSC)	2010 on
Implement an annual construction programme of demonstration facilities for sewerage with recycling options (EcoSan) at public institutions	2011 on
Encourage DPs to finance more sanitation projects within the framework of the SWAp	2011 on
In cases of emergencies / disasters a coordination group for rapid response is established	2010 on

WSTF

Focus the budget planning as much on sanitation as on water	2010 on
Include sanitation in all reports	2010 on
Increase the percentage of investments for sanitation in relation to water	2010 on
Publish regularly best practices on sanitation	2010 on
Include sanitation in the strategic plan	2010 on
Include indicators for sanitation in the performance contracts	2009 on
Develop PICS	2010
Harmonise CPC and UPC with PICS (including a concept on up-scaling household sanitation facilities with subsidies by WSPs)	2010
All sanitation projects include a capacity building component aligned to the IPS (WSSC), also addressing the needs of the private sector and civil society	2011 on
Ensure that all new water projects include at least a sanitation component	2010 on
The information systems at the WSTF shall include sanitation, which shall also be taken care of when data are collected in the water sector	2009 on
Identification of focal person for sanitation	2010 on
Give preferences to recycling technology for infrastructure development of sanitation	2010 on
Place public sanitation in “hotspots” within or near low-income settlement in the urban setting	2010 on
Offer incentives to WSPs to be involved in the promotion and operation of sanitation facilities in or near the settlements of the urban poor	2010 on
Harmonise data collection with the national bureau of statistics	2009 on
Ensure complementarities and harmonisation of standards for sanitation	2010 on
Increase the number of projects proposals for sewer systems and onsite sanitation in line with the IPS (WSSC)	2010 on
Implement an annual construction programme of demonstration facilities with recycling options (EcoSan) at public institutions and households	2010 on
Ensure enforcement of standards for sanitation facilities	2010 on
Ensure that public water outlets at markets, bus stations etc. with high traffic are	2010 on

combined with sanitation facilities	
Include in all sanitation measures for infrastructure (hardware) development soft components such as hygiene education and social marketing, and ensure implementation according to the standards issued by the MoPHS	2010 on
Elaborate the PICS and up-scaling concept	2011

WASREB

Include sanitation in all sector and sub-sector reports	2010 on
Publish regularly best practices on sanitation	2010 on
Include sanitation in the strategic plan	2010 on
Include indicators for sanitation in the performance contracts	2011 on
Sanitation becomes part of the regulatory framework for water supply	2010 on
The information systems at WASREB shall include sanitation, which shall also be taken care of when data are collected in the water sector	2009 on
Identification of focal person for sanitation	2010 on
Include pro-poor sanitation into investment planning for rural and urban areas	2009 on
Contribute to the harmonisation of standards for sanitation	2010 on
Enforce discharging of effluent by bowsers at regulated places (e.g. sewage treatment plants)	2010 on
Set standards for sanitation facilities in collaboration with the other concerned ministries and ensure their enforcements	2010 on
Introduce tariffs for sanitation based on real costs	2010 on
Ensure that tariff adjustment proposals separate the costs for water and sanitation	2010 on
Set tariffs for sanitation for cost recovery	2010 on
Include disaster preparedness in the regulatory framework	2011 on

WSBs

Focus the budget planning as much on sanitation as on water	2010 on
Include sanitation in all sector and sub-sector reports	2010 on
Increase the percentage of investments for sanitation in relation to water	2010 on
Publish regularly best practices on sanitation	2010 on
Include sanitation in the strategic plan	2010 on
Include indicators for sanitation in the performance contracts	2009 on
Include pro-poor sanitation in investment planning for rural and urban areas	2009 on
All sanitation projects include a capacity building component aligned to the IPS (WSSC), also addressing the needs of the private sector and civil society	2011 on
Ensure that all new water projects include at least a sanitation component	2010 on
The information systems at the WSBs shall include sanitation, which shall also be taken care of when data are collected in the water sector	2010 on
Identification of focal person for sanitation	2010 on
Give preferences to recycling technology for infrastructure development of sanitation	2010 on
Place public sanitation in “hotspots” within or near low-income settlements in the urban setting	2010 on
Offer incentives to WSPs to be involved in the promotion and operation of sanitation facilities in or near the settlements of the urban poor	2010 on

Establish discharge points at sewer lines near the settlements of the urban poor	2010 on
Optimise existing sewer systems and explore the possibility of reuse of effluent	2012 on
Ensure that newly designed infrastructure integrate advanced technology for the reuse of effluent	2010 on
Give sanitation the same priority as water in investment planning	2010 on
Increase the number of projects proposals for sewer systems and onsite sanitation in line with the IPS (WSSC)	2010 on
Enforce discharging of effluent by bowsers at regulated places (e.g. sewage treatment plants)	2010 on
Ensure enforcement of standards for sanitation facilities	2010 on
Ensure that public water outlets at markets, bus stations etc. with high traffic are combined with sanitation facilities	2010 on
Include in all sanitation measures for infrastructure (hardware) development soft components such as hygiene education and social marketing, and ensure implementation according to the standards issued by the MoPHS	2010 on
Ensure that tariff adjustment proposals separate the costs for water and sanitation	2010 on
Enhance monitoring of effluent quality from sewage plants	2011 on

WSPs

Focus the budget planning as much on sanitation as on water	2010 on
Include sanitation in all sector and sub-sector reports	2010 on
Publish regularly best practices on sanitation	2010 on
Include sanitation in the business plan	2010 on
Include indicators for sanitation in the performance contracts	2009 on
The information systems at WSPs shall include sanitation, which shall also be taken care of when data are collected in the water sector	2010 on
Identification of focal person for sanitation	2010 on
Establish discharge points at sewer lines near the settlements of the urban poor	2010 on
Optimise existing sewer systems and explore the possibility of reuse of effluent	2012 on
Enforce discharging of effluent by bowsers at regulated places (e.g. sewage treatment plants)	2010 on
Ensure that public water outlets at markets, bus stations etc. with high traffic are combined with sanitation facilities	2010 on
Include in all sanitation measures for infrastructure (hardware) development soft components such as hygiene education and social marketing, and ensure implementation according to the standards issued by the MoPHS	2010 on
Ensure that tariff adjustment proposals separate the costs for water and sanitation	2010 on
Support municipalities to elaborate sanitation plans for the towns	2011 on

WRMA

WRM sub-sector reporting includes sanitation issues	2010 on
Include sanitation in the strategic plan	2010 on
Include indicators for sanitation in the performance contracts	2009 on
Sanitation becomes part of the regulatory framework for water resource management	2010 on
The information systems at the WRMA shall include sanitation, which shall also be	2010 on

taken care of when data are collected in the water sector	
Identification of focal person for sanitation	2010 on
WRMA/WRUAs include sanitation aspects in their (sub-) catchment management plans	2010 on
Involve WRUAs in rural sanitation wherever water resources are polluted by excreta	2010
Include disaster preparedness in the regulatory framework	2011
Elaborate emergency preparedness plans	2012

KEWI

Establish a training programme on good operation of sewage plants	2010
Establish a training programme on the elaboration of sanitation plans to be established between WSPs and Municipalities	2010

Other sector players

The adoption of annual sector undertakings always considers sanitation	2008 on
Align to the NWSS and IPS (WSSC) also for sanitation matters	2008 on
Always include sanitation in the support for water	2008 on
Harmonise actions on sanitation with the sector institutions and other development partners	2008 on
Involve sector institutions in the supported measures for sustainability and for the implementation of the recommendations of the Paris Declaration	2008 on

ANNEXES

Roles and responsibilities of institutions in the water sector under the Water Act 2002

1.	MWI	<ul style="list-style-type: none"> • Development of legislation , policy and strategy formulation, sector co-ordination and guidance, and monitoring and evaluation • Overall sector investment, planning and resource mobilisation
2.	WSTF	<ul style="list-style-type: none"> • Financing provision of water and sanitation to disadvantaged groups in rural and urban areas.
3.	WASREB	<ul style="list-style-type: none"> • Regulation and monitoring of service provision (WSBs and WSPs) • Issuing of licenses to water services boards and approval of SPAs • Setting standards and developing guidelines for provision of water services • Carry out tariff negotiations • Publish comparative reports
4.	WSBs	<ul style="list-style-type: none"> • Contracting water service providers (WSPs) for efficient and economical provision of water services • Developing/rehabilitating water and sewerage facilities, investment planning and implementation (asset management) • Applying regulations on water services and tariffs
5.	WSPs	<ul style="list-style-type: none"> • Provision of water and sanitation services, ensuring good customer relations and sensitisation, adequate maintenance of assets and reaching performance level by regulation
6.	WRMA	<ul style="list-style-type: none"> • Planning, management, protection and conservation of water resources
7.	WAB	<ul style="list-style-type: none"> • Arbitration of water related disputes and conflicts between institutions and organisations
8.	KEWI	<ul style="list-style-type: none"> • Training and research

Roles and responsibilities of government ministries and agencies in sanitation

In the preparation of this concept paper for the water sector the MWI recognised the respective roles and responsibilities of the following key government ministries and agencies.

1.	Ministry of Planning and Vision 2030	<ul style="list-style-type: none"> National Development Policy and Planning and Monitoring and Evaluation of Socio- Economic Trends and MDGs progress — giving the national framework and monitoring the impact.
2.	Ministry of Public Health and Sanitation MoPHS	<ul style="list-style-type: none"> MoPHS is the lead ministry responsible for overall coordination, creating an enabling framework for sanitation intervention of all stakeholders in the different sectors and setting and monitoring standards for household sanitation.
3.	Ministry of Water and Irrigation MWI	<ul style="list-style-type: none"> Oversight on sewer systems and appropriate technology interventions, setting standards on collection and treatment of waste water, including onsite treatment, and creating an enabling environment in the water sector for sanitation intervention.
4.	Ministry of Education	<ul style="list-style-type: none"> Giving guidance on sanitation and hygiene education, and facilities in schools.
5.	Ministry of Environment and Mineral Resources	<ul style="list-style-type: none"> Responsible for formulation of policies on environment, mining, forestry, wildlife conservation and protection of natural resources, conservation and protection of water catchment areas. Therefore, its concern is proper disposal.
	NEMA	<ul style="list-style-type: none"> Implementation of all policies relating to environment including general supervision and co-ordination over all matters relating to the environment — also setting of effluent disposal standards.
6.	MoLG	<ul style="list-style-type: none"> Facilitating and supporting Local Authorities and other sector players in carrying out their mandates including sanitation.
	Municipalities	<ul style="list-style-type: none"> Construction and maintenance of storm water drainage, sanitation facilities, wastewater and solid waste collection and disposal and enforcement of by-laws on sanitation.
7.	Ministry of Roads	<ul style="list-style-type: none"> Construction of storm water drainage for roads.
8.	Ministry of Public Works	<ul style="list-style-type: none"> Construction and maintenance of sewage treatment works in public institutions e.g. prisons and various government training institutions.

From this it is clear that each ministry's role is to set and monitor standards and create an enabling environment within its sector for other players to maximize their contribution in implementation.

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