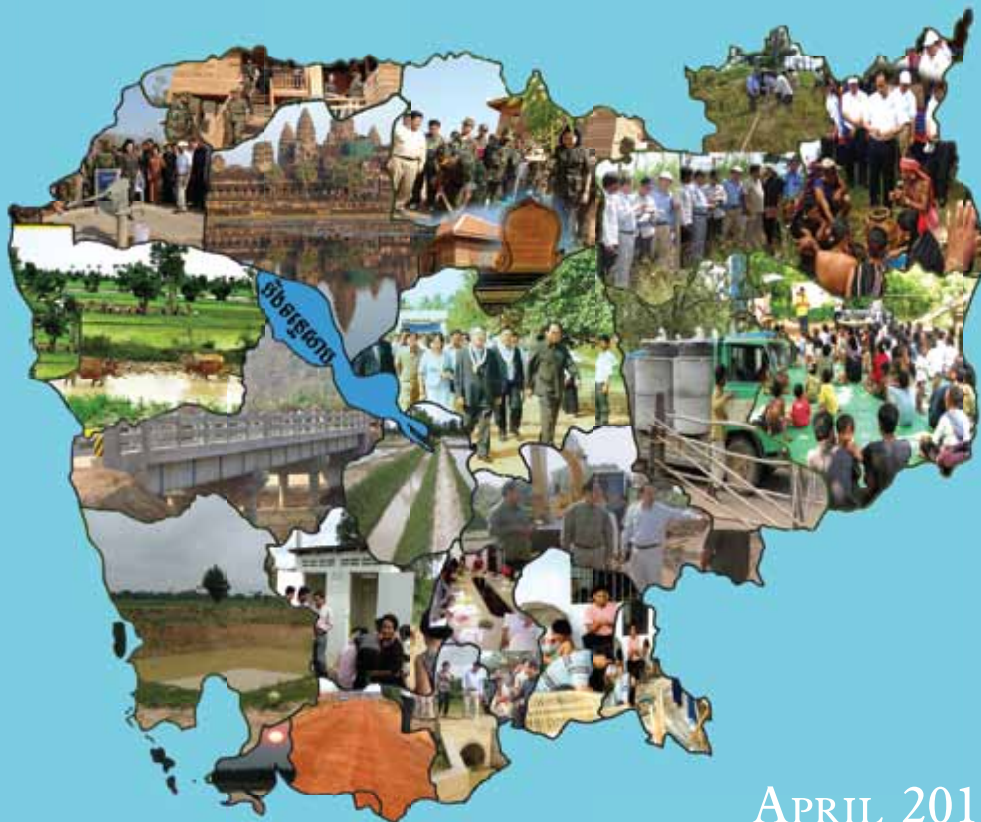




NATION RELIGION KING

NATIONAL STRATEGY FOR RURAL WATER SUPPLY, SANITATION AND HYGIENE 2011-2025



APRIL 2011



Forewords

The Royal Government of Cambodia for the fourth legislative term of the National Assembly continues to consider reducing poverty as rapidly as possible as a key priority. Rural development is indispensable for poverty reduction because 85 per cent of the poor live in rural areas. The Royal Government will continue to implement the integrated rural development programme focusing in particular on factors with positive impacts on rural poor people. This includes strengthening institutional capacity and human resource development, implementation of integrated local plan, construction of rural roads, provision of rural water supply, primary health care and rural sanitation, community development, and rural economic development in order to enhance Cambodian people's living standard, especially for rural people.

In this regard, water supply service and rural sanitation are an urgent need to safeguard and enhance rural people's health and livelihood and to improve economic condition. The Cambodian Millennium Development Goals already stated that in 2015 "50% of the people living in rural areas have access to water supply and 30% of the people living in rural areas have access to improved sanitation services".

Based on this basic need, the Technical Working Group for Rural Water Supply, Sanitation, and Hygiene under the coordination of the Ministry of Rural Development has developed this National Strategy on Rural Water Supply, Sanitation and Hygiene for implementation over a period of 15 years starting from 2011 to 2025, clearly stating that "everyone must have access to water supply and live in a hygienic environment by 2025". This Strategy has identified measure including strengthening of institutions, responsibilities of relevant agencies at all levels - both at national and sub-national levels - enhancement of participation of communities that are beneficiaries of improved water supply service and sanitation, strengthening of service quality, and involvement of the private sector, etc. Based on this view, I would like to appeal to all relevant agencies to jointly implement this Strategy effectively and to fulfill their responsibilities as determined under this important Strategy. The Ministry of Rural Development, which is the agency responsible for development, coordination, implementation, and monitoring and evaluation of the implementation of the national policy and strategy on rural water supply and sanitation will seek to collaborate closely with all relevant ministries and agencies in order to achieve the common goal, which is to serve rural people's interest.

Provision of access to improved water supply service and sanitation for the rural people is very beneficial both in terms of economic and social aspects. Recent studies show that in Cambodia for investment of US\$1 for sanitation improvement, Cambodia will benefit about US\$10. In addition, investment of US\$1 in water supply service would make a return of US\$8 for the national economy. This is the reason why the Ministry of Rural Development has worked actively and closely with development partners to promote activities and provide rural water and sanitation service to meet the needs of people in rural communities, in particular those who lack of access to improved sanitation and water supply for consumption. This is a direct benefit for the people and contribution to enhancing rural people's livelihood. These overall benefits are huge for Cambodia. Given the economic and social benefits, the rural water supply and sanitation sector has helped save a great deal of expenditure for a

number of related sectors, such as health and has contributed to achieving many points of the Millennium Development Goals, namely poverty reduction, reduction in diarrhea, increase in access to education, reduction in infant mortality, and improvement in maternal health care.

I am strongly confident that all relevant ministries, agencies and development partners working in the rural water supply and sanitation sector will seek to understand this Strategy in depth and use it as a guide in provision of water supply and sanitation service for the benefit of rural people in the Kingdom of Cambodia.

Phnom Penh, 21 April 2011

Minister *R*



Chhea Sophara

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ACRONYMS AND ABBREVIATIONS

Acronym	English
ADB	Asian Development Bank
AISC	Arsenic Inter-ministerial Sub-Committee
AMK	Angkor Mikroheranhvatho (Kampuchea) Co. Ltd (Angkor Microfinance Kampuchea)
CC	Commune Council
CCWC	Commune Council for Women and Children
CDC	Council for Development of Cambodia
CDRI	Cambodia Development Resource Institute
CLTS	Community Led Total Sanitation
CMDG	Cambodian Millennium Development Goal
D&D	Decentralization and Deconcentration
DFID	Department for International Development (official Britishaid)
DAC	Disability Action Council
DORD	District Office of Rural Development
DPO	Disabled People's Organizations
DRHC	Department of Rural Health Care (in MRD)
DRWS	Department of Rural Water Supply (in MRD)
ERW	Explosive Remnants of War
ETV	Environmental Technology Verification
HR	Human Resources
IDPoor	Identification of Poor Households Program
IFC	International Finance Corporation of the World Bank
INGO	International Non-Governmental Organization
IRC	International Reference Centre for Water Supply and Sanitation (in the Netherlands)
IWRM	Integrated Water Resources Management
MAFF	Ministry of Agriculture, Fisheries and Forests
MDG	Millennium Development Goal
MEF	Ministry of Economics and Finance
mg/L	Milligrams per Liter
MIME	Ministry of Industry Mines & Energy
MIS	Management Information System
mL	Milliliter
MoEYS	Ministry of Education, Youth and Sport
MOH	Ministry of Health
MoSVY	Ministry of Social Affairs, Veterans and Youth Rehabilitation
MOWA	Ministry of Women's Affairs
MOWRAM	Ministry of Water Resources and Meteorology
MRD	Ministry of Rural Development
NCDD	National Committee for Sub-National Democratic Development

NCDDS	National Committee for Sub-National Democratic Development Secretariat
NCDM	National Committee for Disaster Management
NGO	Non-Governmental Organization
NIS	National Institute of Statistics
NSDP	National Strategic Development Plan
NTU	Nephelometric Turbidity Units – a physical measurement of turbidity in water quality
OBA	Output-Based Aid
ODF	Open-Defecation Free
O&M	Operation and Maintenance
Organic Law	Law on Administrative Management of Capital, Provinces, Municipalities, Districts and Khans
PDRD	Provincial Department of Rural Development
PFMRP	Public Financial Management Reform Program
pH	In chemistry, pH is a measure of the acidity or basicity of a solution on scale of 0 to 14 (7 is neutral)
PIF	Provincial Investment Fund
PLAU	Provincial Local Administration Unit
PRDC	Provincial Rural Development Committee
RGC	Royal Government of Cambodia
RWSSH	Rural Water Supply, Sanitation and Hygiene
SaniFOAM	Framework for Sanitation Focus, Opportunity, Ability, Motivation
SME	Small and Medium Enterprise
TDS	Total Dissolved Solids (in water quality)
TWG	Technical Working Group
TWG-RWSSH	Technical Working Group for Rural Water Supply, Sanitation and Hygiene
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
USD	United States Dollars
VIP	Ventilated Improved Pit (latrine)
WASH	Water, Sanitation and Hygiene
WELL	Resource Centre for Water, Sanitation and Environmental Health
WHO	World Health Organization
WSP	Water & Sanitation Program
WSS	Water Supply and Sanitation
WSSCC	Water Supply and Sanitation Collaborative Council
WSUG	Water & Sanitation User Group

1. INTRODUCTION

The need for a National Strategy on Rural Water Supply, Sanitation and Hygiene was apparent and recognized, for many years. The aim of the strategy is to define the water supply, sanitation and hygiene services to be made available to people living in rural areas, and the institutional arrangements and financial, human and other resources needed to provide these services. The underlying purpose is to accelerate progress towards achieving the Cambodian Millennium Development Goals (CMDGs) in 2015 and the Rural Water Supply, Sanitation and Hygiene (RWSSH) Vision of full coverage by 2025.

The Ministry of Rural Development has overall responsibility for the strategy and its implementation, under the guidance of the Technical Working Group for Rural Water Supply, Sanitation and Hygiene (TWG-RWSSH). The intended users of the strategy are relevant institutions at all levels, including national institutions, sub-national institutions, development partners, national and international NGOs and the private sector. A summary version and information brochure will be available for sub-national institutions.

The sector operates at a number of different levels: household and community, commune, district, province and national. At each of these levels, there are several different actors, stakeholders and individuals, each of whom has different views and ideas. All of these add up to a complex sector in terms of shared values, understanding the challenges, systems and procedures and the means to address the overall challenge of enabling rural people to have sustainable access to water supply and sanitation services.

The strategy to address all these challenges is similarly complex. There needs to be a range of strategic and detailed actions to address the individual challenges, and all these actions need to be coordinated to achieve the overall purpose.

The Ministry of Rural Development (MRD) adopted a participatory approach to develop the strategy by commissioning a specialist consultant to lead the process and establishing a Core Group comprising Secretaries of State, directors of relevant departments and representatives of development partners. The consultation included field work in some provinces, and Situational Analysis Workshops that included representatives of commune councils, the Commune Council for Women and Children (CCWC), District Governors, the Provincial Department of Rural Development (PDRD), Provincial Local Administration Units (PLAU), line ministries, development partners, NGOs and the private sector. It included workshops to address specific technical issues with key specialists in Rural Water Supply, Sanitation and Hygiene and briefings to the TWG-RWSSH.

The Strategy is structured as follows:

- Section 1** introduces the Strategy.
- Section 2** shows the strategic framework and matches this strategy with policies and plans.
- Section 3** sets the strategic objectives based on the sector vision and the CMDGs.
- Section 4** determines the scope of the strategy (what is included and what is excluded).
- Section 5** provides a set of principles on which the strategy is based, to guide sector organizations in their work.
- Section 6** provides a situational analysis of the main challenges in the sector, the policies, legislation and strategies derived from other sectors, and some other supporting information, including coverage figures of the RWSSH sector.
- Section 7** is a table of the strategic objectives, components and actions.

- Section 8** gives the strategic components, with specific objectives and the components needed to achieve them. Where necessary, there is a short background and explanation of the need for the component.
- Section 9** sets the timeframe for the strategy and the transitions embodied within it.
- Appendix 1** gives definitions for a large number of terms used in the sector and in the Strategy. These are important because they provide the basis for an agreed common language and understanding of terminology, particularly when working in two languages – Khmer and English. If everyone uses the terms with the same meaning, there will be less chance of misunderstanding.
- Appendix 2** gives the reasons for, and further explains, the principles in section 5.
- Appendix 3** provides additional guidance to support the components and actions in section 8.
- Appendix 4** provides the organizational arrangements under D&D.
- Appendix 5** tabulates the detailed roles, at the various levels, for service delivery and the enabling environment. It supports, and provides additional information to, the actions stated in component 4.1.2.
- Appendix 6** gives the references and sources of information used in the strategy.

2. FRAMEWORK FOR POLICY,

STRATEGY AND OPERATIONAL PLANNING

Table 1 shows a framework for the sector policy and strategy environment, including the use of instruments such as policy, strategy and planning. The term “strategic plan” is not used so as to avoid confusion with what is meant by “strategy”.

Table 1: Strategic framework

Policy ◆ Sets the 25-year development goal (vision) for the RWSS sector. ◆ Outlines the roles, rules and approaches that will need to be adhered to in order to achieve the goal.		Vision statement ◆ A declaration of where the sector is headed in the future state. ◆ To formulate a picture of what the future will be and where the sector is headed. Principles
		
Strategy ◆ The means by which policy is carried out (the bridge between policy goals and detailed actions). ◆ It comprises a set of medium- to long-term objectives and associated components to support achieving the development goals and to implement the policy.		Strategic objectives ◆ The medium- and long-term aims for strategic areas which combine to achieve the vision.
		
	Guidelines	 Implementation guidelines Technical guidelines Standards
Rolling Long-Term Plan		Multi-year planning
		
Annual operational plan ◆ A set of tasks assigned to an individual or team that lists targets for each task, as well as due dates, the person responsible and measures for success. ◆ Action plans illustrate to individuals or teams how they will complete organization-wide objectives.		Annual planning ◆ Activities ◆ Outputs ◆ Indicators ◆ Inputs • Staffing • Budget • Other resources

3. STRATEGIC OBJECTIVES

The Sector Vision sets the overall goal and the CMDGs set the intermediate goals for organizations working in the RWSSH Sector.

Sector Vision

Every person in a rural community has sustained access to safe water supply and sanitation services and lives in a hygienic environment by 2025.

Cambodian Millennium Development Goals

CMDG7:	Ensure environmental sustainability
Target 7.10:	Increase the proportion of the rural population with access to a safe water source from 24% in 1998 to 50% in 2015
Target 7.12:	Increase the proportion of the rural population with access to improved sanitation from 8.6% in 1996 to 30% in 2015

The Strategy

This strategy defines the water supply, sanitation and hygiene services to be made available to people living in rural areas and the institutional arrangements and the financial, human and other resources needed to provide these services.

Five strategic objectives are set in order to achieve the intermediate and overall goals.

Strategic Objectives

Water supply:	By 2015, 50% and by 2025, 100% of the rural population will have sustainable access to an improved water supply.
Sanitation:	By 2015, 30% and by 2025, 100% of the rural population will have sustainable access to improved sanitation services and live in a hygienic environment.
Hygiene promotion:	By 2015 30% and by 2025, 100% of the rural population practice basic, safe hygiene behavior.
Enabling environment:	By 2015, institutional arrangements, legal instruments and human resources will be in place and able to rapidly increase and sustain services.
Financing:	Funding for capital and recurrent expenditure will be available.

The Strategic Objectives fall into two groups:

- The **actual services** for water supply, sanitation and promoting hygiene, including the range of services to be delivered, from creating demand to long-term operation. These are described in Section 7.1.
 - The **means to deliver these services**, including the roles and responsibilities of line institutions and the private sector. These are described in Section 7.2.
- Both groups have various roles. They are:

- ◆ **Commissioning:** arranging for the task to be done, either by assigning or delegating it to another section or government department, or by contracting it out to, for example, a private sector operator or NGO.
- ◆ **Provision:** actual delivery of the service or task.
- ◆ **Management and coordination:** ensuring that a function is carried out by the institution responsible for providing the service.
- ◆ **Regulation:** an independent role to ensure users receive the quality and performance, from the private sector, to which they are entitled, and that the service providers get a fair return from users.
- ◆ **Monitoring:** refers to collecting, organizing and using information about the actual situation and comparing it to the planned or expected situation. It includes using the monitoring information for checking and control, problem solving and planning, and as tools for management by community members, staff and program managers¹.
- ◆ **Technical advice:** providing specialist technological, social, institutional, financial and environmental advice.
- ◆ **User:** the end user of the service.
- ◆ **Financing:** providing funding for both capital investment and recurrent costs.

The general international trend is to move on from providing infrastructure to delivering services. Although the sector vision is defined in terms of access to services, the predominant approach in Cambodia has been to develop and implement projects. It is necessary to move away from projects and programs, which are essentially time-limited activities, to a concept of providing a particular component or components, within an unlimited service-delivery time frame. The design of each component needs to take into consideration all the other components in the system.

In this respect the use of the word “implementation” in the strategy must be avoided where it is associated with projects and one-off activities, with no connection to the sustainability of the project. Instead, the concept of service provision will be used, referring to sustainability. For example, a project that builds water supply systems, including all the associated software for community management, is the provision of infrastructure, and thus forms one part of the delivery system needed for a sustainable water supply service.

Within Strategic Objective 4, institutional capacity will change over time:

Between 2011 and 2015 the organizational capacity to provide infrastructure should be rapidly increased to reach full scale. Operation and Maintenance (O&M) capacity should be developed from today’s very low levels, so that existing infrastructure can be kept in running order.

By 2015, increasing coverage should be at full scale. Infrastructure and services to previously uncovered rural populations, should be keeping up with new services and should have, at the same time, the capacity to run, sustain and support existing services.

By 2025, with full coverage achieved, the same capacity to deliver new infrastructure will no longer be needed. Any new construction of water supplies will be limited to replacing existing facilities, upgrading facilities and some limited new construction in line with population increases. Most of the capacity will focus on sustaining existing services and supporting these through local government.

¹ (Shordt, 2000)

4. SCOPE

Time period : The strategy covers the period from 2011 to 2025.

Geographic area

Urban areas in Cambodia were reclassified in 2004. Under the new definitions, communes that meet all the following criteria are classified as urban:

- ◆ Population density is at least 200 per square kilometer
- ◆ Population is at least 2,000
- ◆ Percentage of males employed in agriculture is less than 50 percent.

Areas that do not meet all three criteria are rural and fall within the scope of this strategy. The exception is where a commercially operated piped water supply system, licensed by MIME, has been developed. In that case the commune is designated urban for the purpose of water supply and comes under the responsibility of MIME.

During the period of this strategy, as the population grows, it is likely that a number of communes will change from rural to urban status.

Domestic (drinking) water supply

Domestic water supply is water for drinking, cooking, washing clothes and bathing. It does not include water for used for agriculture.

Household sanitation

This is sanitation, for example toilets, for communities and households, including the associated hygiene behavior change to stop open defecation.

School and institutional water and sanitation

This is providing water supply and sanitation services to rural-area schools, health facilities, clinics and other public-service institutions.

Hygiene behavior change

This is the promotion of, and actions necessary to achieve, hygienic behavior related to water supply and sanitation.

Environmental sanitation

Wastewater and solid waste management are included, but vector (insects and rodents) control is not.

Integrated water resource management

This is incorporated in access to water supplies.

5. PRINCIPLES

The National Water and Sanitation Policy, approved by the Royal Government in 2003, set the broad policy for rural water supply and sanitation, including four guiding principles. There are, however, a number of more detailed policy issues and principles that need to be established as a basis for the strategy. These are given in this section, with the justification for the principles and supporting information in Appendix 2.

Sustainability

A key objective is the sustainability of improved water supply, use of sanitation facilities and hygiene behaviors. Once established, systems should provide a permanent service. The benefits should continue over a prolonged period. Essential factors are:

- ◆ The water resources should not be over-exploited;
- ◆ Polluting the water resource should be prevented, in particular from poor sanitation;
- ◆ Provision for effective O&M, so that WSS facilities are maintained in a condition that ensures a reliable service;
- ◆ An effective enabling environment, with appropriate legislation, information, strong institutions with clear responsibilities, supportive attitudes and political will;
- ◆ Appreciation of the economic, social and health benefits;
- ◆ Choice of appropriate service level and technologies;
- ◆ Financial viability based on affordability, capacity and willingness to pay and financial management skills;
- ◆ An effective management information system.

Community-based management

Communities should manage water supply and sanitation services, and have decision-making power over the components for which they are responsible. This includes decisions about whether to operate the services themselves or to contract out to a service provider. Key aspects in community-based management are:

- ◆ Participation: all members of the community should have an equal opportunity to participate in the development and management process, and there must be broad community support for community-based management.
- ◆ Responsibility: the community owns and is responsible for maintaining the systems.
- ◆ Authority: the community has the legitimate right to make decisions on behalf of the users.
- ◆ Control: the community is able to carry out and determine the outcome of its decisions.
- ◆ Accountability: the community must accept the consequences of its decisions and understand that it is accountable for its actions.

Demand-responsive approach

The demand-responsive approach is a foundation for community management. The community initiates developing services by requesting support from relevant authorities or service providers. The community then makes informed choices about service options, based on its willingness to pay and be responsible for operating and maintaining services. Key points include:

- ◆ Informed choices by communities, having participated in planning and implementation.
- ◆ Community responsible for operation and maintenance.
- ◆ Capital cost sharing and 100% of O&M costs borne by the community.
- ◆ Promoting more information and technology options.

Cost sharing for water supply

Communities should contribute a part of the capital cost of water supplies, but should bear the total cost for operation and maintenance, and a part of the cost of the maintenance support service, housed in DoRD. The Ministry of Rural Development develops the cost-sharing guideline, while the local authorities determine the exact contributions to the capital cost and the maintenance support service, according to local economic conditions.

Sanitation financing

For sanitation, public finance should mainly be used to stimulate demand and develop the enabling environment (including affordable products) so that households pay for their own toilets. Those who can pay should pay. While targeted hardware subsidies may be provided to poor households to buy toilets, and to reach the vision of 100% coverage, direct hardware subsidies should be used with caution and only as a last option, and alternative mechanisms should be prioritized.

Integration of water supply, sanitation and hygiene promotion

Where communities and households do not have access to improved water supply and improved sanitation, water supply, sanitation and hygiene promotion services should be integrated into a single component. But as there are substantial differences between them, different approaches are needed to provide such services. In places that already have water supply, it may only be necessary to develop sanitation and hygiene promotion as stand-alone components.

Operation and maintenance

User communities are responsible for operating and maintaining the water supply service, through a representative Water & Sanitation User Group (WSUG), supported by a district-level O&M support service. Operating and maintaining household latrines is the responsibility of the individual household, while institutions are responsible for theirs.

Decentralization and deconcentration of service provision and management

Providing and managing services should conform to the Government's policy of decentralization and deconcentration, as set out in the Strategic Framework for Decentralization and Deconcentration Reforms (2005), and legislation such as the Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans (2008).

Accountability

Organizations have multiple accountabilities – downwards to electorates, beneficiaries, partners and staff, and upwards to higher levels of government and donors. When developing, running and monitoring services and designing projects, programs or other activities, all organizations should consider how their work and its results will affect each of these, and their responsibilities for them, in both the short and long-term.

Mainstreaming gender

All organizations should mainstream gender. They should make women's and men's concerns integral to the design, implementation, monitoring and evaluation of policies and service delivery in all political, economic and social aspects.

Mainstreaming disability

Developing and providing RWSSH services shall conform to the Law on the Protection and Promotion of the Rights of Persons with Disabilities (2009). The needs of people with disabilities should be considered at all stages of the development process, including legislation, policies and programs, in any area, at all levels.

6. SITUATION ANALYSIS

Main challenges

A consultation workshop involving line-ministries, development partners, sub-national government and administration representatives, commune councils and CCWC was held. The workshop, and other studies, revealed a number of challenges to increasing and maintaining water supply and sanitation services and to improving personal hygiene behavior. The strategic responses to these challenges and other issues raised in the situational analysis are shown in Table 2.

Sector management

The capacity to manage is a concern at all levels. Insufficient or weak coordination between different government departments and organizations needs to be addressed.

Decentralization and deconcentration related to roles and responsibilities

There is considerable uncertainty about future roles and responsibilities under the evolving process of D&D, and about new structural arrangements. Therefore, there should be vigorous discussion about RWSSH in decentralization and deconcentration.

Services and capacity to deliver

Providing water supply services to an additional 10 million Cambodians, sustaining the existing and future water supplies and enabling 2 million households to buy and use latrines presents major challenges, including establishing institutional structures and human resources. Nearly the whole rural population needs to be reoriented to adopt safe hygiene practices and, as noted by commune councilors in several places, changing hygiene behavior needs long-term effort, not just once-off training.

Private sector

The participation of the private sector is limited due to a number of factors, including a lack of access to credit, investment risk, lack of business skills, unfair competition and a weak regulatory system.

Monitoring

There is no single, standardized monitoring system to which all organizations can contribute. This makes it difficult to monitor progress towards RWSSH targets.

Technology

There are few options for water supply, particularly in drought-prone areas. With sanitation, there are very few low-cost latrine designs that would allow the poorest people to afford one. Until now, there have been no solutions for sustainable latrines for floating villages or areas subjected to regular flooding.

Socio-cultural issues

Poverty, lack of participation, lack of ownership and lack of behavioral change form a self-perpetuating cycle as shown in Figure 1. The challenge is to break this cycle.

Figure 2: Cycle of socio-cultural challenges

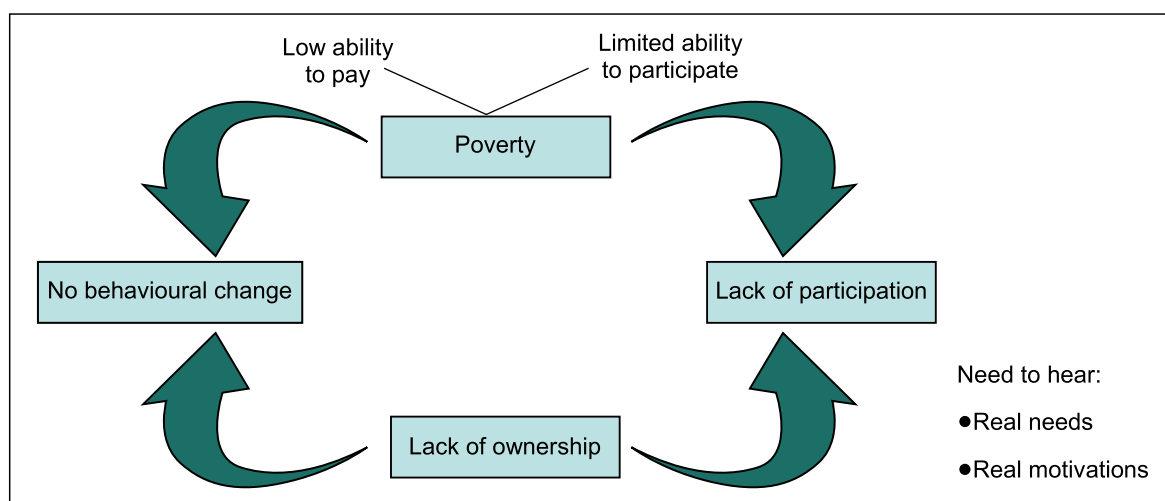


Table 2: Strategic responses to challenge

Challenge	Strategic response
Sector management	Strategic objective 4: Component 4.1 Sector Management 4.1.1 Organizational arrangements and restructuring under D&D 4.1.2 Roles and responsibilities under D&D 4.1.3 Governance and accountability 4.1.4 Guidelines and procedures
D&D related to roles and responsibilities	Strategic objective 4: Component 4.1 Sector Management 4.1.1 Organizational arrangements and restructuring under D&D 4.1.2 Roles and responsibilities under D&D
Services and capacity to deliver	Strategic objective 4: Component 4.2: Human resources and Capacity development 4.2.1 Sub-national government
Coverage and targets	Strategic Objective 1: Component 1.1 Access to water supply services 1.1.1 Provision of new infrastructure 1.1.2 Rehabilitation of existing infrastructure Component 1.3 Operation and maintenance 1.3.2 Maintenance support system Component 1.4 Markets for WASH products 1.4.1 Supply chains Strategic Objective 2: Component 2.1 Increasing access to sanitation
Private sector	Strategic objective 4: Component 4.3: Private sector development 4.3.1 Creation of a competitive environment 4.3.2 Access to capital investment and loans 4.3.3 Development of business and technical skills

Monitoring	Strategic objective 4: Component 4.4: Planning and management information systems
Technology	Strategic Objective 1: Component 1.1 Access to water supply services 1.1.3 Water supply technology 1.1.4 Development of appropriate technology and services Strategic Objective 2: Component 2.1 Increasing access to sanitation 2.1.1 Range of sanitation options and technology development
Socio-cultural issues	Strategic objective 4: Component 4.8: Poverty, minorities, vulnerability 4.8.1 Poverty 4.8.2 Disability Component 4.9: Gender mainstreaming
Finance	Strategic objective 5: Component 5.1: Financing of capital costs 5.1.1 Water supply and sanitation infrastructure and software 5.1.2 Sanitation financing mechanisms 5.1.3 Capacity development Component 5.2: Financing of recurrent costs
Poverty	Strategic Objective 2: Component 2.1 Increasing access to sanitation 2.1.1 Range of sanitation options and technology development Strategic objective 4: Component 4.8: Poverty, minorities, vulnerability 4.8.1 Poverty

Finance

A National Water and Sanitation Sector Financing Strategy for Cambodia was developed recently². It estimates the financial investment, running costs and financing gap for both urban and rural water supply and sanitation. The study on which the strategy is based analyzed four development scenarios.

In the scenarios, the development targets³ relevant to the rural sector are:

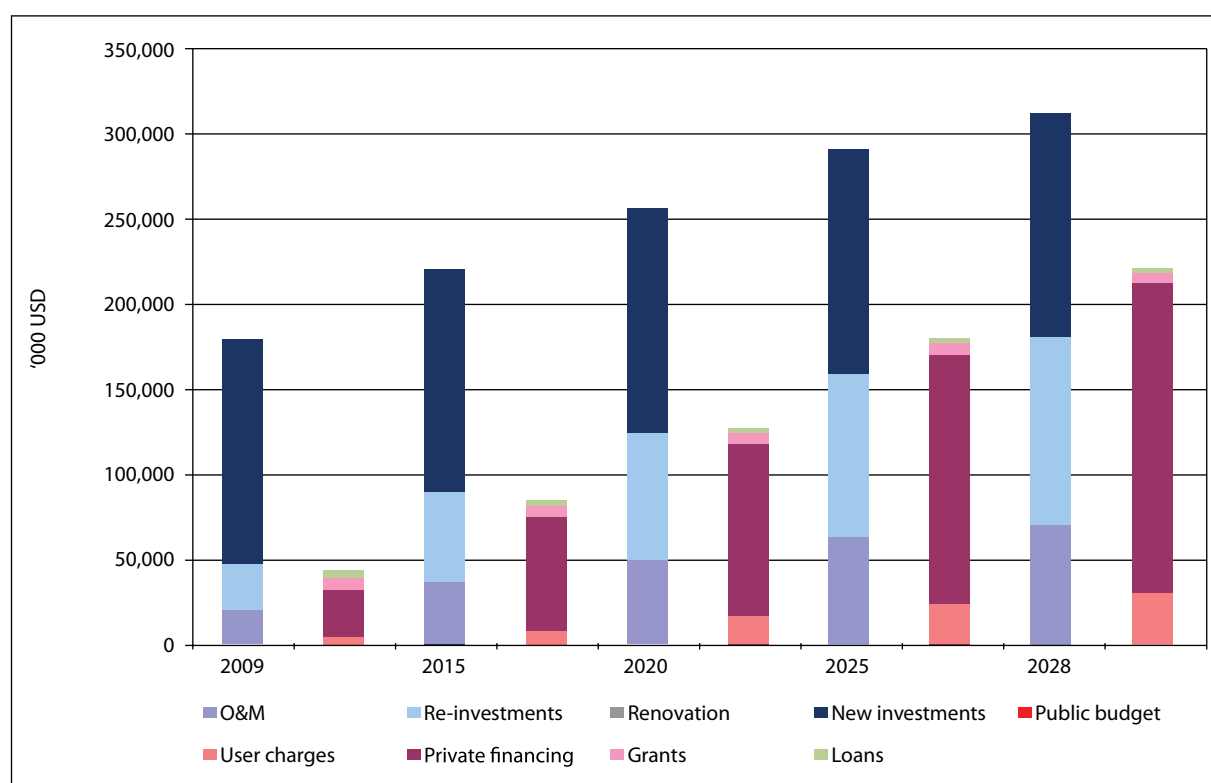
- ◆ Increasing access to improved water supply in rural areas, from 40.5% in 2008 to 100% in 2028.
- ◆ Increasing access to improved sanitation in rural areas, from 23.2% in 2008 to 100% in 2028.

Based on these targets, the study estimated a substantial financing gap, varying over time, for water supply and sanitation. These estimates are for capital costs of new and replacement in infrastructure and recurrent costs of operation and maintenance. They exclude the costs of software, capacity development and hygiene promotion and the O&M support system. The estimated expenditure and financing are shown in Figure 2 for rural water supply and Figure 3 for rural sanitation.

² The National Sector Water and Sanitation Sector Financing Strategy is awaiting final approval

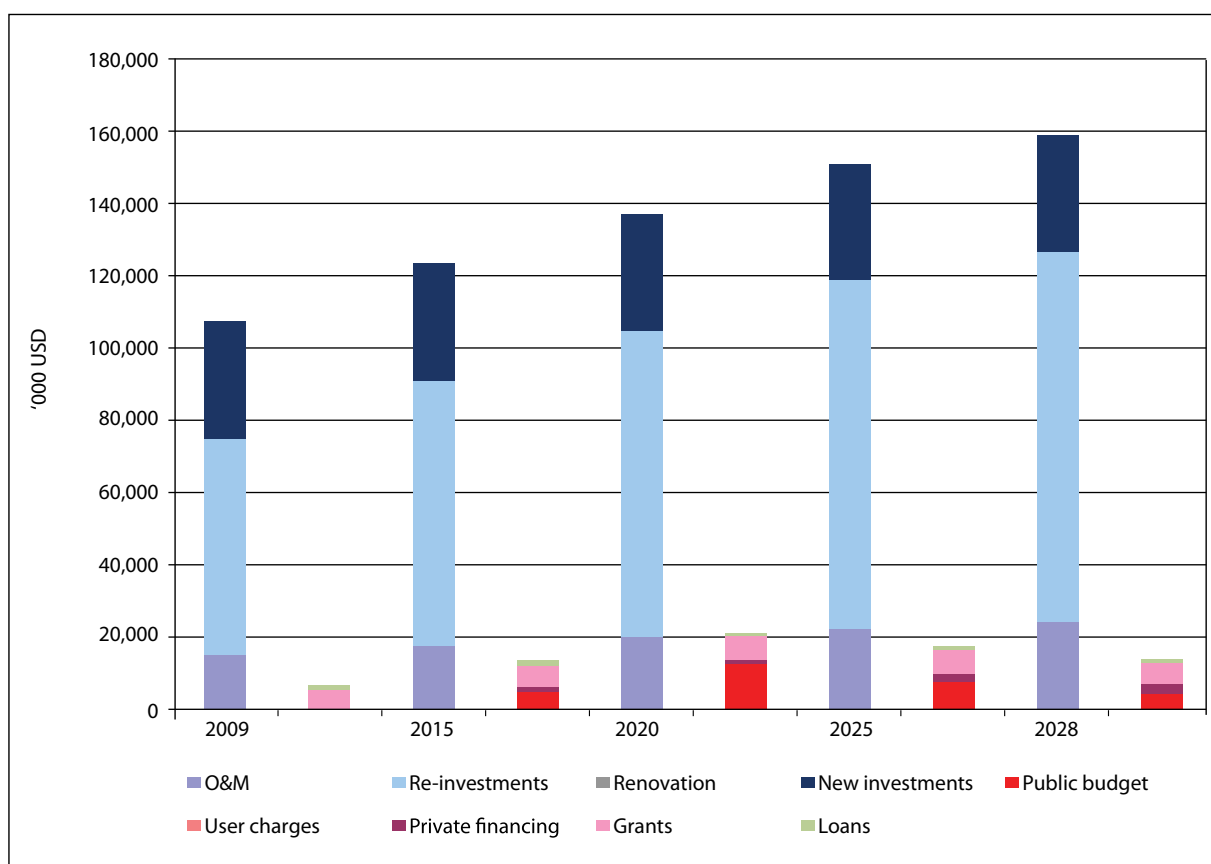
³ The baseline percentage coverage figures are from the 2008 census data

Figure 3: Water supply expenditure and financing, 2009–2028 (selected years)



Source: National Sector Water and Sanitation Sector Financing Strategy

Figure 4: Sanitation expenditure and financing, 2009–2028 (selected years)



Source: NationSector Water and Sanitation Sector Financing Strategy

Policies

There are a number of policies and plans to which the strategy will seek to conform and contribute, including:

The Rectangular Strategy for Growth, Employment, Equity and Efficiency - Phase II⁴

Relevant points are:

- ◆ Continuing the Decentralization and Deconcentration policy with new measures to ensure implementation of the “Organic Law on the Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans”
- ◆ A requirement for each ministry to prepare concrete action plans to delegate power and functions to sub-national levels
- ◆ The National Committee on Sub-National Democratic Development preparing a 10-year National Implementation Program
The relevant prioritized goals are⁵:
- ◆ A poverty reduction rate of more than 1% per annum and improving the main social indicators, especially education, health and gender equity
- ◆ Increase the coverage, efficiency and quality of public services and gain public trust

Line ministries need to ensure smooth and consistent implementation between the Public Financial Management Reform Program (PFMRP) and other important reform programs of the RGC, especially the Public Administrative Reform Program and the Deconcentration and Decentralization Program.

The strategy will transfer operational functions to the district level, conforming to the Organic Law and the Policy on D&D, while adjusting the roles at the central and provincial levels. Its main focus is to increase coverage and improve service delivery, thereby contributing to reducing poverty.

National Strategic Development Plan Update 2009–2013⁶

The NSDP will deliver the Rectangular Strategy. It reiterates the points from the Rectangular Strategy and, under D&D reform, sets a 10-year timeframe for the Program for Sub-National Democratic Development, being developed by the NCDD. The first phase of this, from 2011 to 2012, is especially relevant to the strategy. It will focus on establishing structures and good governance frameworks at national and sub-national levels.

Priorities for rural development include strengthening institutional capacity, developing human resources, improving access to safe drinking water and sanitation and education on health and sanitation.

National Water Supply and Sanitation Policy: Part III – Rural Water Supply and Sanitation⁷

This is the main guide for the RWSSH Sector. It sets some important principles, including:

The role of government as facilitator, with other organizations delivering the actual services;

- ◆ The priority of services for poor people;
- ◆ The role of the private sector in delivering services and the role of the government in enabling this to happen, including promoting “transparency and competition in sector service provision”;

⁴ As presented by Samdech Akka Moha Sena Padei Techo Hun Sen at First Cabinet Meeting of the Fourth Legislature of the National Assembly on 26 September 2008 (RGC, 2008b)

⁵ (RGC, 2008c)

⁶ (RGC, 2010b)

⁷ (RGC, 2003)

- ◆ The role of communities in managing their water supply and sanitation;
- ◆ Communities choose the type and level of service.

In terms of institutional arrangements, the policy has been superseded in some respects by the Rectangular Strategy, the NSDP and the D&D Policy, as set out in the Strategic Framework for Decentralization and Deconcentration Reforms⁸. The strategy addresses the changes required.

Legislation

Legislation relevant to the strategy is shown in Table 3. There is no legislation specific to sanitation.

Table 3: Legislation relevant to the strategy

Legislation	Implications for Strategy
Water Legislation	
Water and Sanitation Law of the Kingdom of Cambodia (2004) (draft)	Does not apply to water supply and sanitation in rural areas, except for piped supplies operated by a private operator
Sub decree on Water Pollution Control (Council of Ministers, 1999b)	No permits required for private households Permits required for restaurants and small businesses
Sub decree on Solid Waste Management (Council of Ministers, 1999a)	Limited relevance to the strategy
Law on Environmental Protection and Natural Resource Management (RGC, 1996)	Need for environmental impact assessments for projects
Law on Water Resources Management of the Kingdom of Cambodia (RGC, 2007)	Need for integrated management and allocation to different users
Sub decree on Rural Sanitation Day (Nov 13)	Part of advocacy for sanitation
Organizational legislation	
Law on Administrative Management of Capital, Provinces, Municipalities, Districts and Khans (RGC, 2008b)	Gives the general sub-national administrative context to which the strategy should conform Specific functions for District Councils and Technical Committees Partially clarifies relationships between councils and line ministries Relevant to transition from present structures to future structures Monitoring system should include Commune Council and District Council responsibilities Strategy has to be reviewed by NCDD Proposed responsibilities need to conform with Organic Law

⁸ (RGC, 2005)

Legislation	Implications for Strategy
Law on Khum/Sangkat Administrative Management (RGC, 2001)	Commune Council (CC) can employ its own technical staff CC has the authority to manage water supply and sanitation services MRD and other line ministries can delegate to CC Funding from MRD and other line ministries can be made to CC Donor grants can be provided to CC
Prakas on the Reorganization of Structure, Roles and Responsibilities of the Provincial/Municipal Rural Development Committee and Executive Committee (NCDD, 2008)	Transfers the roles and responsibilities of the PRDC to NCDD Includes a Technical Support Unit in the new structure
Social legislation	
Law on the Protection and Promotion of the Rights of Persons with Disabilities (RGC, 2009)	People with disabilities will participate in determining service delivery Facilities to be made accessible for people all types of disabilities
Private sector legislation	
Draft Law of Concession (ECA, 2004a)	Would cover contracts for service management Requirement for administrative coordination and services through CDC, may not be appropriate for RWSS contracts at district level

D&D - Decentralization and Deconcentration

The RGC is committed to a process of governance reform. According to the Strategic Framework for Decentralization and Deconcentration Reforms, which is the policy for D&D, the intention is to establish a unified administrative management system at the provincial, district/khan and commune/sangkat levels⁹. The Law on Khum/Sangkat Administrative Management (2001) and the Law on the Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans (2008)¹⁰ are essential components of this reform. In May 2010 the Council of Ministers approved the National Program for Sub-National Democratic Development (NP-SNDD), which sets out “the RGC’s agenda for the next 10 years in the comprehensive and in-depth governance reform process of the sub-national administrations, which will also impact on other national institutions”¹¹.

Other relevant strategies and plans

Directly relevant strategies within the RWSSH Sector are:

- ◆ Arsenic Contamination of Groundwater in Cambodia: Updating Arsenic Strategic Action Plan in five years (2010-2015)¹²
- ◆ Water and Sanitation Sector Financing Strategy for Cambodia (draft)¹³

⁹ (RGC, 2005)

¹⁰ Royal Kram No. NS/RKM/0301/05 and Royal Kram No. NS/RKM/0508/01 respectively

¹¹ (RGC, 2010a)

¹² (AISC, 2007)

¹³ (COWI, 2010)

Relevant strategies and plans of other sectors include:

- ◆ Strategy for Agriculture and Water 2006–2010¹⁴
- ◆ Strategic Development Plan for the Water Sector 2006–2010¹⁵
- ◆ Health Strategic Plan 2008–2015¹⁶
- ◆ National Plan of Action for Persons with Disabilities, including Landmine/ ERW Survivors 2009–2010¹⁷
- ◆ Child Friendly School Policy (2007)¹⁸
- ◆ National Policy on Early Childhood Care and Development (2010)¹⁹
- ◆ Neary Rattanak III: Five Year Strategic Plan 2009–2013²⁰
- ◆ National Social Protection Strategy for the Poor and Vulnerable (draft)²¹
- ◆ Strategic Framework for Decentralization and Deconcentration Reforms²²
- ◆ NP-SNDD 3-year Implementation Plan (2011–2013)
- ◆ NCDD Capacity Building Plan for 2010²³
- ◆ Strategic National Action Plan for Disaster Risk Reduction 2008–2013²⁴
- ◆ National Adaptation Program of Action to Climate Change²⁵

Roles and responsibilities

Responsibilities for water and sanitation are allocated to various line ministries:

- ◆ The MRD is specifically responsible for rural water supply and sanitation
- ◆ The Ministry of Water Resources and Meteorology (MOWRAM) has over all responsibility for water resource planning and management
- ◆ The Ministry of Industry, Mines and Energy (MIME) is responsible for water supply to provincial and small towns, regulation of the private sector involved in piped water systems, setting quality standards for drinking water and water quality in piped supplies
- ◆ MIME is responsible for the water quality of piped public water supply sources
- ◆ The Ministry of Planning is responsible for monitoring the CMDGs

The organizational Structure of MRD is shown in Figure 4.

The main departments responsible at the central level are the Department of Rural Water Supply and the Department of Rural Health Care, both under the General Department for Technical Affairs. Under the Provincial Departments of Rural Development (PDRD), there are District Offices of Rural Development (DORD), although until now there have been insufficient resources to run these.

¹⁴ (MAFF & MOWRAM, 2007; TWG on Agriculture and Water, 2007)

¹⁵ (MOWRAM, 2005)

¹⁶ (Ministry of Health, 2008)

¹⁷ (MoSVY, 2009)

¹⁸ (MoEYS, 2007)

¹⁹ (MoEYS, 2010)

²⁰ (MOWA, 2009)

²¹ (Council for Agricultural and Rural Development, 2010)

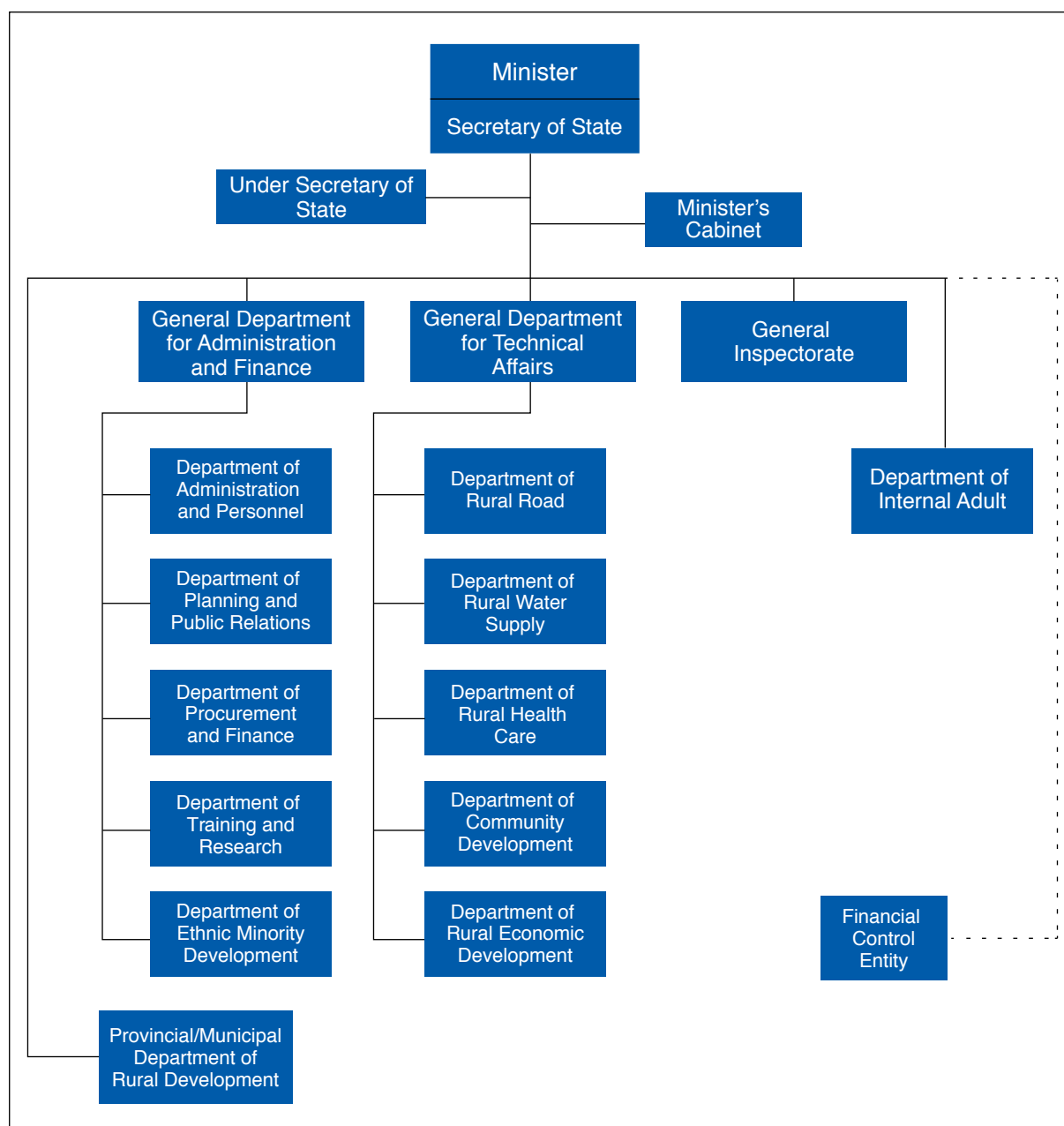
²² (RGC, 2005)

²³ (NCDDS, 2010)

²⁴ (National Committee for Disaster Management & Ministry of Planning, 2008)

²⁵ (Ministry of Environment, 2006)

Figure 5: Organizational structure of MRD²⁶



Coordination

MRD is designated as the lead organization for rural water supply and sanitation in Cambodia, with specific responsibility for sector leadership and coordination. There are two main mechanisms for coordination. The Technical Working Group for Rural Water Supply, Sanitation and Hygiene (TWG-RWSSH), chaired by the Minister of Rural Development, brings together at senior level “government and development partners and ensures a more effective coordination of Cambodia’s response to rural water, sanitation and hygiene promotion challenges”.²⁷ This role includes coordinating the strategy. The Rural Water Supply and Sanitation Sector Working Group (WATSAN Sectoral Working Group), chaired by MRD and open to all organizations active in the sector, meets monthly to exchange information.

²⁶ Based on (MRD)

²⁷ (TWG-RWSSH, 2007)

Coverage and targets

Based on the 2008 National Census, the rural population's access to improved water supplies and sanitation are given in Table 4, together with the CMDG and Sector Vision Targets.

Table 4: Access to improved water supply and sanitation

	2008 ²⁸	2015 CMDG	2025 Vision
Improved water supply	40.5%	50%	100%
Improved sanitation	23.2%	30%	100%

Table 5 shows the current and target coverage in terms of population and numbers of households, with the increases required to reach the targets.

Table 5: Target and increases required

	2008	2015 CMDG	2025 Vision
Rural population (from 2008 census)	10,781,655	12,002,000	14,983,000
Rural households	2,343,838	2,400,300	2,797,000
Population growth rate	1.54%		
Water supply			
Population covered 40.5% (2008)	4,367,500		
Population uncovered (2008)	6,416,500		
CMDG Target Coverage			
Population covered 50%		6,001,000	
Population uncovered		6,151,000	
Increase to reach 2015 target		1,633,000	
Vision Target Coverage			
Population to have access to water 100%			14,983,000
Increase from CMDG to reach 100% target			7,983,000
Latrine			
Households covered 23.2% (2008)	500,400		
Households uncovered (2008)	2,057,000		
CMDG Target Coverage			
Households covered 30%		720,000	
Households uncovered		1,680,000	
Increase to reach 2015 target		220,000	
Vision Target Coverage			
Households covered 100%			2,797,000
Increase from CMDG to reach 100% target			2,077,000

²⁸ (NIS, 2009)

Poverty and water supply and sanitation

Improved water supply and sanitation services are directly relevant to the RGC's priorities for reducing poverty. In particular, all sectoral strategies focus on having a positive impact on reducing poverty. Very poor, or underserved, areas should be targeted for investment and attention.²⁹

The links between poverty and water supply and sanitation are shown in Figure 6.

Figure 6: Links between poverty and water supply and sanitation³⁰

Lack of water sanitation and hygiene	Poverty dimensions	Key effects
	Health	Water- and sanitation-related illnesses Stunting from diarrhea-related malnutrition Life expectancy is reduced
	Education	Children (especially girls) do not go to school because of ill health, lack of toilets or water-collection duties
	Gender and social inclusion	Burdens borne disproportionately by women, limiting their opportunities to enter the cash economy People with disabilities face hardship
	Income/ consumption	High proportion of budget used on water Reduced income due to poor health, time spent collecting water or lack of opportunity for businesses that need water High consumption risk because of seasonal or other factors

Apart from the CMDG targets for improved water supply and sanitation, there are direct contributions to other CMDGs shown in Box 1.

²⁹ (RGC, 2006)

³⁰ adapted from (Bosch, Hommann, Rubio, Sadoff, & Travers, 2002)

Box 1: Importance of environmental MDG for other MDGs³¹

Goal	Links to the environment
Eradicate extreme poverty and hunger	Poor people's livelihoods and food security often depend on ecosystem goods and services. Poor people tend to have insecure rights to environmental resources and inadequate access to markets, decision-making and environmental information, limiting their ability to protect the environment and improve their livelihoods.
Achieve universal primary education	Time spent collecting water and fuel wood reduces the time available for schooling. The lack water and sanitation in rural areas discourages qualified teachers from working in poor villages.
Promote gender equity and empower women	Women and girls are especially burdened by water and fuel collection, reducing their time and opportunities for education, literacy and work. Women often have unequal rights and insecure access to land and other natural resources, limiting their opportunities.
Reduce child mortality	Water-borne diseases, inadequate sanitation and pollution-related respiratory infections are among the leading killers of children under five. Lack of fuel for boiling water contributes to water-borne diseases.
Improve maternal health	Carrying heavy loads of water and fuel wood is bad for women's health. It can reduce their fitness for childbearing and increase risks of complications during pregnancy.
Combat major diseases	Up to 20% of the disease burden in developing countries may be due to environmental risk factors (as with malaria and parasitic infections). Preventive measures to reduce these are as important as treatment – and often more cost-effective.

³¹ (UNDP, 2003)

7. SUMMARY OF STRATEGIC OBJECTIVES AND COMPONENTS

Subcomponent	Outcome	Actions	Responsibility
Strategic Objective	Access to sustainable improved water supply services		
Component 1.1	Access to water supply services		
Providing new infrastructure	Communities and rural institutions have access to water supply through new infrastructure	Prepare district inventories of water supply services and gaps, compiling these at provincial and national level Coordinate water resource allocation for domestic use according to IWRM principles Identify support offered by government and development partners, including NGOs Promote the application process for new water supply infrastructure Prepare the community to manage the construction, operation and maintenance of water supply services Provide new infrastructure Quality control of new construction Fund the capital cost of new infrastructure	PDRD/DORD, MRD MRD, MOWRAM PDRD/DORD PDRD/DORD DORD, NGOs Private sector through PDRD/DORD PDRD/DORD MEF in partnership with MRD and development partners, and community
Rehabilitation of existing infrastructure	Communities and rural institutions have access to water supply services through rehabilitating existing infrastructure, where feasible	Commission a study to determine the scale and reasons for failure of water supplies in the past and the comparative cost efficiency of rehabilitation or new construction Develop procedures and guidelines to rehabilitate infrastructure, that address the causes of past failures Promote the application process for rehabilitating infrastructure Prepare communities to manage the construction, operation and maintenance of water supply services Rehabilitate existing infrastructure Quality control of rehabilitation Fund the capital cost of rehabilitating the infrastructure	MRD, PDRD/DORD MRD PDRD/DORD DORD, NGOs Private sector through PDRD/ DORD PDRD/DORD MEF in partnership with MRD and development partners, and community

Subcomponent	Outcome	Actions	Responsibility
Water supply technology			
Development of appropriate technology and services	Affordable technical options for water supply in drought-prone areas, arsenic-affected areas and for social needs are available	Commission research, develop and pilot water supply technology for drought-prone and arsenic-affected areas, according to the R&D procedure in component 4.6. This will include reviewing the appropriateness of technology for women and technologies used in other countries Commission research, develop and pilot water supply technology for people with special social needs, including people with disabilities, women and children, according to the R&D procedure in Component 4.6 Carry out the research, development and piloting	MRD MRD Qualified university, NGOs and/or private sector institutions
Sharing risk in providing services	The private sector to operate and provide services in difficult and remote areas	Develop a clear system for delineating the additional costs of working in remote areas and sharing the cost of risk so that it is not a disincentive for the private sector to work in such areas. This system will allocate risks to those parties best able to manage them; rewards to investors will balance with risks assumed by them	MRD
Application of water quality standards			
Water Safety Plans and Water Supply Surveillance	Procedures in place to ensure that water supplies conform to the water quality standards for rural areas	Adapt the concept of water safety plans (based on the Water Safety Plan Manual produced by WHO) for use in Cambodia. Draft guidelines for the preparation of these plans by commune councils Develop a water quality surveillance system for provinces, with operational responsibilities delegated to district councils and commune councils As part of the water quality monitoring systems, each Commune Council will produce a Water Safety Plan for its area Develop a procedure for decision-making and actions in response to water points that fail to meet quality standards, including checking alternative sources	MRD PDRD DORD, Commune Council MRD

Subcomponent	Outcome	Actions	Responsibility
Protection of water from source to use in household	People use safe practices for handling and using water for drinking and domestic purposes	Disseminate and monitor the effectiveness of MRD's recently published Hygiene Promotion Guidelines, and revise the guidelines if necessary	MRD
	Household water treatment systems, sold in the market or provided by development organizations, meet required standards	Finalize the Environmental Technology Verification procedure and pass the legislation for mandatory testing under the procedure Establish testing capacity Issue certification for tested products that meet the standards Publicise information about the certification system	MRD, MIME, MOC
Operation and maintenance			
Community management of operation and maintenance			
Maintenance support system	WSUGs and communities receive technical advice, training and mentoring to ensure long-term sustainability of water supply services managed by the community	Design the maintenance support system including monitoring groundwater levels Establish the maintenance support system in each district and organize staff training.	MRD PDRD
Markets for WASH products			
Supply chains	People and communities can purchase water supply and sanitation products in their local markets through effective supply chains	Commission a project to develop supply chains for hand pumps and other water supply, sanitation and hygiene products, based on the resource guide from WSP and other relevant guidance	MRD supported by development partners

Subcomponent	Outcome	Actions	Responsibility
Access to improved sanitation			
Increasing access to sanitation			
	Households buy, construct and use latrines	Develop approaches such as CLTS to change people's hygiene behavior Motivate communities and households to use latrines Use advertising to promote sanitation products in local markets Develop local masons and markets so that sanitation products are available in districts, communes and communities Buy latrines and latrine components	MRD through PDRDs and DORD DORD through NGOs and private sector Private sector NGOs, business and technical training organizations Households
Range of sanitation options and technology development	Sanitation options are available and affordable for the poorest households	Commission research to identify, in Cambodia and other countries, a range of cheaper technical options for latrines. Develop, publish and publicize these designs in a format suitable for use at community level	MRD
	Sanitation options are available and affordable for households living in flood-prone areas and floating villages	Commission research to identify, in Cambodia and other countries, latrine designs appropriate for floating villages and flood-prone areas. Develop and pilot-test them, according to the R&D procedure in Component 4.6	MRD
Operation and maintenance			
	Service providers empty pits and manage septage safely, according to operating procedures	Develop operating procedures for managing septage and emptying pits Develop systems for treating and disposing of, or re-using, septage sludge and the contents of pit latrines Develop services for emptying pits and septic tanks, with training in how to dispose of the contents safely and appropriately	MRD MRD Private sector supported by PDRD/DORD

Subcomponent	Outcome	Actions	Responsibility
Sanitation in schools, health facilities and other rural institutions			
School sanitation and hygiene education	Schools have improved toilet blocks and hand basins and students understand safe hygiene practices	Develop a national standard for the number of school students and staff per latrine, defined separately for girls and boys, and staff and children with disabilities Prepare and maintain an inventory of existing toilets, water and sanitation facilities, including functionality, in all schools Build appropriate toilet blocks and hand basins in all rural schools using a demand-responsive approach Teach life skills as part of the core curriculum to accompany the infrastructure	MoEYS with support from MRD MoEYS with individual schools MoEYS with individual schools MoEYS with individual schools
Sanitation in health facilities and other rural institutions	Health centers and other institutions have improved toilets and hand basins	Develop a national standard for the number of latrines per inpatient and outpatient, defined separately for males and females, and people with disabilities Prepare and maintain an inventory of existing toilets, water and sanitation facilities, including functionality, in all health centers and other institutions Build latrines in all health centers and other rural institutions using a demand-responsive approach	MoH MoH with district health offices or relevant authority MoH with district health offices or relevant authority
Environmental sanitation – wastewater and solid waste	A plan for strategic interventions for environmental sanitation based on a sound understanding of needs	Commission a study on wastewater drainage to assess the extent and scale of the problems and propose strategic solutions Commission a study on solid waste to assess the extent and scale of the problems and propose strategic solutions Develop and implement a plan to address ways to drain wastewater and remove and dispose of solid waste	MRD MRD MRD and PDRDs
Hygiene behavior change			
Hygiene promotion			

Subcomponent	Outcome	Actions	Responsibility
	People understand and adopt safe hygiene practices in relation to sanitation and water supply	Finalize and disseminate the Hygiene Promotion Guidelines, monitor their use and evaluate their effectiveness in achieving change Review and revise Hygiene Promotion Guidelines after evaluating their effectiveness Carry out baseline and follow-up surveys of hygiene practices and report results to District Office of Rural Development Conduct hygiene behavior change campaigns in communities and households Conduct regular refresher courses to encourage hygiene behavior change	MRD and MoH MRD and MoH Organizations promoting hygiene behavior change DORD through CCWC and organizations promoting hygiene behavior change CCWC with DORD
Achieving sustainable services			
Sector management			
	The RWSSH Sector is appropriately organized and equipped to function effectively and efficiently to achieve the MDGs and the Sector Vision	Coordinate and manage the various actions needed for institutional change in the strategy and the accompanying 5-year Implementation Plan Monitor the progress of action points and the outcomes of the RWSSH strategy	MRD TWG-RWSSH
Organizational arrangements and restructuring under D&D	Service delivery is coordinated, managed and monitored at the district level	Strengthen DORD in each district supported by PDRDs	MRD with PDRD
Roles and responsibilities under D&D	The roles of organizations in the RWSSH Sector are clearly defined	Promulgate prakas defining the roles of organizations involved in the sector	MRD

Subcomponent	Outcome	Actions	Responsibility
Governance and accountability	Effective local accountability mechanisms are in place	Develop procedures to make local authorities accountable to communities for water supply, sanitation and hygiene promotion services, including the use of social audits Develop guidelines for local government, service providers and support organizations on how to address multiple upward and downward accountabilities Develop a system for DORD to seek, receive and address feedback, for example, complaints from communities, households and commune councils, including a comparative performance monitoring system between districts and communities	MRD MRD MRD
Guidelines and procedures	Effective delivery of services with set standards for accountability	Review existing guidelines and procedures and revise if necessary Produce new guidelines and procedures as required in other parts of this strategy Publish and disseminate guidelines to national and local government authorities, service providers, district and commune councils and communities Monitor the use and effectiveness of guidelines and revise if necessary	MRD with partners from RWSSH Sector MRD with partners from RWSSH Sector MRD PDRD reporting to MRD
Human resources and capacity development			

Subcomponent	Outcome	Actions	Responsibility
Sub-national and national government	The capacity to facilitate and sustain services at sub-national level supported by national level is in place	Strengthen capacity of DORD staff Prepare a comprehensive capacity development plan to determine: - the experience and skills required for the tasks at provincial and district level; - the capacity and adequacy of existing staff - the additional training that will be required for staff to fulfill the roles - the costs of implementing the plan Coordinate capacity development planning with other sectors and the D&D process to ensure that the overall capacity development is feasible Implement the capacity development plan	MRD, PDRD MRD
Private sector development		Develop appropriate diploma courses for training sub-national staff and staff of other organizations	MRD and institution providing training course MRD

Subcomponent	Outcome	Actions	Responsibility
Creating a competitive environment	An accountable competitive environment for SMEs involved in the RWSSH Sector is used for administering service delivery contracts	Establish three additional procedures to ensure compliance with contracting and procurement procedures: Make the water and sanitation user group party to the contract, so the contract is between the commissioning authority and the WSUG on one side, and the private sector company on the other Following the tender process, publish and disclose to the user community the bids of the lowest three bidders together with the cost estimate by the commissioning authority (including the way the estimate was built up from first principles of costing labor, plant and materials) At the end of a construction contract, formally disclose the accounts of the project to the community, detailing how the project funds have been spent	MRD
		Prepare and publish guidelines of the principles of responsibility, accountability, predictability and transparency for the private sector Distribute these guidelines to all sub-national government offices involved in the sector and to all commune councils. Distribute these guidelines to all SMEs with an interest in providing a service in the sector	MRD MRD PDRD/DORD
	Private sector is confident to invest in long-term operational service provision	Contracts for service providers that include investment in infrastructure will be for terms of at least ten years, to allow the contractor to spread the cost of the investment and to get a return on it. Such contracts will include clauses for early termination in the event of poor performance of the service	MRD
Access to capital investment and loans	Funding available for small-scale lending to rural SMEs for sanitation and water supply services and products	Identify and secure capital for investment through micro-finance organizations	MFIs

Subcomponent	Outcome	Actions	Responsibility
Development of business and technical skills	SMEs working in rural water supply and sanitation are competent in basic business management and financial management	Identify appropriate training institutions and develop training programs Provide training to SMEs at the local level Provide follow-up mentoring and support to small businesses	MRD NGOs, business training organizations, universities NGOs, business training organizations, universities
Planning and management information systems			
	A unified management information system is used for effective planning and management of the RWSSH sector	Reform the current information management systems with their multiple databases to provide one unified information management system	MRD
		Make the MIS accessible to all sector stakeholders by putting it on the internet and by other means for those without internet access	MRD
		Ensure that all data is collected for infrastructure, institutional and social factors, and is disaggregated for women, men, children, people with disabilities and ethnic minorities	MRD, PDRD, DORD
Evaluation and Learning			
	There is an effective system in place for learning from the experiences of sector stakeholders	Establish a system for sharing evaluations under the WATSAN Sectoral Working Group	MRD
		Evaluate and publish the outcomes and studies of specific aspects and approaches in the sector	MRD
Research, development and innovation			
	A rigorous procedure is applied to research, development and innovation of technology and software approaches	Draw up systematic procedures for applying, testing, approving and disseminating new approaches and technology development	MRD
		Establish a committee for guiding and approving such work	MRD

Subcomponent	Outcome	Actions	Responsibility
Communication	Effective communication within and outside the RWSSH sector	Develop and implement a communication strategy to address: - Increasing the political profile of the sector in relation to its influence on political priority areas, such as health and economic development - Increasing the media profile of the sector - Publicizing the strategy both within and outside the sector - Establishing inter-ministerial communication mechanisms - Identifying key data and information - Developing internal communications channels and mechanisms	MRD and development partners
Poverty, minorities, vulnerability			
Poverty	The poorest and most vulnerable households are prioritized for service provision	Give priority to the poorest and most underserved people and areas Identify the poorest districts and communes within provinces and the poorest households within villages by referring to the Lists of Poor Households, developed and maintained by the Provincial Planning Departments	Organizations developing services Organizations developing services
Disability	The needs and concerns of people with disabilities are addressed	The development and provision of RWSSH services shall conform to the Law on the Protection and Promotion of the Rights of Persons with Disabilities (2009) All projects and programs will consider the needs of persons with disabilities throughout all stages of their project cycles Disabled people's organizations (DPO) will be included or represented in any consultation process, committee or advisory board	MRD, DAC, development partners and all service providers All service providers TWG-RWSSH, MRD, other committees and advisory boards
Gender mainstreaming			

Subcomponent	Outcome	Actions	Responsibility
	Gender is mainstreamed in the RWSSH Sector	Review and update the Gender Mainstreaming Action Plan Review all existing and future guidelines and sector procedures to ensure they adequately address and advise on gender issues Develop a gender orientation course suitable for government staff, elected councils and service providers in the RWSSH Sector Run the gender orientation course for different stakeholders	MRD Gender Working Group with MOWA MRD Gender Working Group with MOWA MRD Gender Working Group with training organization Training organizations
Environment			
	The environmental impacts of water supply and sanitation are understood at all levels and impacts are mitigated in developing and providing services	Commission a study on the level of understanding and links between water, sanitation and environmental impacts including IWRM and risks to health Develop guidelines and procedures for addressing environmental impacts, including relevant legislation	MRD MRD
Climate change and disaster risk reduction and management			
	Water supply and sanitation services are developed to reduce the impact of disasters and the risk of climate change	Coordinate with the National Committee for Disaster Management on actions for disaster preparedness and disaster management Adapt technical designs for flood-prone areas Prepare vulnerability maps showing flood- and drought-prone areas and develop mitigation measures	MRD MRD MRD and NCDM
Sector financing			
Financing of capital costs			

Subcomponent	Outcome	Actions	Responsibility
Water supply, sanitation infrastructure and software	Funding for new or rehabilitated infrastructure is available	Prepare a Sector Investment Plan for Rural Water Supply and Sanitation Advocate for an increase in Government funding by demonstrating the economic and social benefits of investment in water supply and sanitation Review the contribution that should be made by communities in each province and district: Develop a procedure and criteria for setting the rate of community contribution Set the rates for local contribution according to the procedure	MRD with MEF, Development partners MRD and RWSSH-TWG MRD with MEF, local authorities
Sanitation financing mechanisms	Tested mechanisms that most effectively provide sustained access, protect public health and minimize negative impacts on the environment are applied	Establish a steering group to guide the development of alternative funding mechanisms, using the procedures of component 6: Research, development and innovation Develop and pilot funding mechanisms Monitor the effectiveness of the mechanism in terms of inclusion and exclusion of the target group and stimulating the adoption of safe sanitation behaviors After a trial period conduct a comparative evaluation of different financing mechanisms Develop guidance on mechanisms appropriate for different target groups	MRD with MEF and Development Partners Development partners, local authorities, NGOs MRD MRD MRD with MEF and Development Partners

Subcomponent	Outcome	Actions	Responsibility
Capacity development	Funding is available to develop institutional capacity and private sector for management	Estimate the costs of the Capacity Development Plan Estimate the costs of private sector development Advocate for an increase in government funding by demonstrating the economic and social benefits of investment in water supply and sanitation Seek development partners to engage in and fund the capacity development plan and private sector development	MRD MRD TWG-RWSSH MRD with MEF
Financing of recurrent costs			
	Recurrent funding for the sustainability of water supply and sanitation services available	Pay the full operating costs of the water supply service, including staff or contractors, repairs and maintenance, replacement of wearing parts and contributions to the Maintenance Support System Establish and maintain a maintenance fund for this purpose, with regular contributions from user households Households will pay the operating and maintenance costs of their own latrines, including managing septage and emptying pits Budget, allocate and provide funding for recurrent costs, in accordance with existing and future financial management cycles	Households through WSUGs WSUGs Households MEF and sub-national financial system

8. STRATEGIC COMPONENTS

A number of components under Strategic Objectives 1, 2 and 3 will require guidelines and procedures to implement them. There is a component for preparing these under Strategic Objective 4.

Strategic Objective 1: Access to sustainable improved water supply services

There are three main phases for delivering water supply services:

- ◆ **Development and planning**, including creating demand through promotion, requests from communities for funding, preparing proposals, appraisal and prioritization, funding submissions
- ◆ **Providing infrastructure**, including preparing and mobilizing communities, explaining feasible technical options, deciding on preferred technical options, forming water and sanitation user groups (WSUG), training in community management and maintenance, distributing and selling WASH products, constructing infrastructure
- ◆ **Operation**, including the WSUG managing the service, maintenance and repair, local government support, in the form of monitoring, and refresher training

Component 1.1: Access to water supply services

Providing new infrastructure

Existing coverage and the intensity of new infrastructure indicate that Cambodia is on track to meet the CMDGs by 2015. From 2015 onwards, however, a major acceleration in the intensity of new infrastructure will be needed to meet the sector vision.

Based on a demand-responsive approach and community management, this will entail developing and planning new infrastructure, including an inventory of existing services, creating demand and preparing the community for the management and delivery of infrastructure by the private sector.

Integrated water resources management (IWRM) is a systematic process for the sustainable development, allocation and monitoring of water resource use in the context of social, economic and environmental objectives³². MOWRAM is responsible for the overall management of water resources, including allocation to different users.

³² (Cap-Net, Global Water Partnership, & UNDP, 2005)

Outcome	Communities and rural institutions have access to water supply through new infrastructure	Responsibility
Action	◆ Prepare district inventories of water supply services and gaps, compiling these at provincial and national levels ◆ Coordinate water resource allocation for domestic use according to IWRM principles ◆ Identify support offered by government and development partners, including NGOs ◆ Promote the application process for new water supply infrastructure ◆ Prepare the community to manage the construction, operation and maintenance of water supply services ◆ Provide new infrastructure ◆ Quality control of new construction ◆ Fund the capital cost of new infrastructure	◆ PDRD/DORD, MRD ◆ MRD, MOW-RAM ◆ PDRD/DORD ◆ PDRD/DORD ◆ DORD, NGOs ◆ Private sector through PDRD/DORD ◆ PDRD/DORD ◆ MEF in partnership with MRD and development partners and community

Rehabilitation of existing infrastructure

Much of the water supply infrastructure provided over past years has broken down. It is essential to understand the scale and reasons for these failures before simply rehabilitating the pumps, wells and other infrastructure.

Outcome	Communities and rural institutions have access to water supply services through rehabilitating existing infrastructure where feasible	Responsibility
Action	◆ Commission a study to determine the scale and reasons for failure of water supplies in the past and the comparative cost efficiency of rehabilitation or new construction ◆ Develop procedures and guidelines, to rehabilitate infrastructure, that address the causes of past failures ◆ Promote the application process for rehabilitating infrastructure ◆ Prepare communities to manage construction, operation and maintenance of water supply services ◆ Rehabilitate existing infrastructure ◆ Quality control of rehabilitation ◆ Fund the capital cost of rehabilitating the infrastructure	◆ MRD, PDRD/DORD ◆ MRD ◆ PDRD/DORD ◆ DORD, NGOs ◆ Private sector through PDRD/DORD ◆ PDRD/DORD ◆ MEF in partnership with MRD, development partners and community

Water supply technology

Options

The various technical options for sanitation and water supply have been classified as improved or unimproved, as shown in Table 6.³³ These are based on the definitions of the Joint Monitoring Program (JMP) of UNICEF and WHO. Any organization providing new water supply infrastructure will do so according to the improved options. The classification will be used for all surveys of access to improved water supply and sanitation.

³³ (MRD & Partners, 2008)

Table 6: Improved and unimproved water supply options

Improved water source	Remarks
Household connection	From piped supply If taken from a surface source the water should be treated to drinking water quality standards
Public standpipe	
Tube well or borehole	
Protected dug well	To be considered protected, a dug well needs to include all of the following: Lining Headwall Platform Cover
Improved rainwater reservoir	To be considered improved, the rainwater catchment tank needs to have all of the following: Be completely closed Tap to withdraw water A capacity of at least 3,000 liters
6. Pond connected to water filter	The pond water will be treated by simple treatment either at the source (such as slow sand filter) or at the point-of-use (household filters such as ceramic filter, bio-sand filter)
Unimproved Water Source	
Unprotected dug well	
Pond, river or stream	
Unimproved rainwater collection	
Vendor-provided water	These are unimproved options because of the costs and efforts involved in getting water
Bottled water	
Water provided by tanker truck	

Choice of technology

Any organization providing new water supply infrastructure will offer communities improved options according to technical, social and economic feasibility in the local context. Social feasibility will cover ease of use for women and the special needs of people with disabilities. Communities will select their preferred technology based on their complete understanding of the range of options for their particular location. The organization providing the infrastructure will determine the feasible options and explain them. This information should include the capital cost of construction and replacement, and the full annual operating costs, which should be based on the cost of replacement of parts in future.

Development of appropriate technology and services

Affordable technology for water supply in drought-prone areas is not yet widely available in Cambodia. Alternatives to groundwater are needed in arsenic-affected areas. It is also necessary to adapt technologies appropriate for men and women and for people with disabilities.

Outcome	Affordable technical options for water supply in drought-prone areas, arsenic-affected areas and for social needs are available	Responsibility
Action:	◆ Commission research, develop and pilot water supply technology for drought-prone and arsenic-affected areas, according to the R&D procedure in component 4.6. This will include reviewing the appropriateness of technology for women and technologies used in other countries ◆ Commission research, develop and pilot water supply technology for people with special social needs, including people with disabilities, women and children, according to the R&D procedure in Component 4.6 ◆ Carry out the research, development and piloting	◆ MRD ◆ MRD ◆ Qualified university, NGOs and/or private sector institutions

Sharing risk in providing services

Providing technical services in remote areas is more expensive than in easily accessible areas and places where technology has already been proven. This can be put down to the extra costs of transport, staff incentives, other logistics and the risk of working in areas where conditions such as the quality of groundwater may be unknown. The higher costs of this must be recognized by the commissioning authority and development partners.

Outcome	The private sector to operate and provide services in difficult and remote areas	Responsibility
Action	◆ Develop a clear system for delineating the additional costs of working in remote areas and sharing the cost of risk so that it is not a disincentive for the private sector to work in such areas. This system will allocate risks to those parties best able to manage them; rewards to investors will be in balance with the risks assumed by them.	◆ MRD

Component 1.2: Application of water quality standards

Standards

Rural water supplies for communities should conform to the Drinking Water Quality Standards³⁴. The standards set parameters for small water supplies applicable to rural areas³⁵, together with minimum sampling frequencies for microbiological analysis, as shown in Table 7.

³⁴ (Ministry of Industry Mines & Energy, 2004)

³⁵ with the addition of nitrate and nitrite

Table 7: Priority water quality parameters for small water supplies

Parameter	Maximum Value
pH	6.5-8.5
Turbidity	5NTU
Arsenic	0.05 mg/L
Iron	0.3 mg/L
Nitrate as NO ₃ -	50 mg/L
Nitrite as NO ₂ -	3 mg/L
Total Dissolved Solids (TDS)	800 mg/L
Thermotolerant Coliforms or E. coli	0 per 100 ml
Minimum sampling frequency for microbiological analysis for populations of less than 5,000	1 sample monthly
Sampling frequency for inorganic constituents	Once a year

Water Safety Plans and Water Supply Surveillance

The Drinking Water Quality Standards state that relevant agencies at national and local levels should implement these standards with specific responsibilities. The Provincial Department of Rural Development will assume these responsibilities and develop a water supply surveillance system, with the responsibilities at community level delegated to the district councils and commune councils. The responsibilities and delegation are given in Appendix 3. The surveillance system can be combined with the Maintenance Support System at the district level.

The Drinking Water Quality Standards also make provision for sanitary surveys in accordance with WHO Guidelines³⁶. Building on these guidelines, the WHO subsequently developed the concept of Water Safety Plans³⁷. Commune councils will do this as a participatory process to help communities understand the importance of protecting water sources and using safe water.

Outcome	Procedures in place to ensure that water supplies conform to the water quality standards for rural areas	Responsibility:
Action	◆ Adapt the concept of water safety plans (based on the Water Safety Plan Manual produced by WHO) for use in Cambodia. Draft guidelines for the preparation of these plans by commune councils ◆ Develop a water quality surveillance system for provinces, with operational responsibilities delegated to district councils and commune councils As part of the water quality monitoring systems, each commune council will produce a Water Safety Plan for its area ◆ Develop a procedure for decision-making and actions in response to water points that fail to meet quality standards, including checking alternative sources	◆ MRD ◆ PDRD ◆ DORD, commune council ◆ MRD

³⁶ (World Health Organization, 2003)

³⁷ (World Health Organization, 2005)

Protection of water from source to use in household

MRD and its partners have identified three main hygiene risk behaviors that will be addressed through hygiene promotion. The one directly related to water is drinking unsafe water.

Outcome	People use safe practices for handling and using water for drinking and domestic purposes	Responsibility
Action	◆ Disseminate and monitor the effectiveness of MRD's recently published Hygiene Promotion Guidelines, and revise the guidelines if necessary	◆ MRD

In the past few years, ceramic household water treatment filters have been introduced in Cambodia as part of the chain of providing safe water. The process of developing and rigorously field-testing these filters will serve as a model for developing other household treatment technologies. A project is currently being carried out to establish an environmental technology verification (ETV) procedure, which will include testing and monitoring household and community water treatment technologies. The Law on the Management of Quality and Safety of Products and Services (2000) by the Ministry of Commerce is relevant to this³⁸.

Outcome	Household water treatment systems, sold in the market or provided by development organizations, meet required standards	Responsibility
Action	◆ Finalize the Environmental Technology Verification procedure and pass the legislation for mandatory testing under the procedure ◆ Establish testing capacity ◆ Issue certification for tested products that meet the standards ◆ Disseminate information about the certification system to the public	◆ MRD, MIME, MOC

Component 1.3: Operation and maintenance

Community management of operation and maintenance

The user communities are responsible for operating and maintaining the community water supply service. Each community will elect a water and sanitation user group (WSUG) to oversee the operation of the water supply service. The WSUG should represent the community, including women, ethnic minorities, people with disabilities and other vulnerable groups. The communities will re-elect their WSUGs regularly.

The WSUG's options for running the service include:

- ◆ Employ paid staff to carry out routine operation, maintenance and repairs
- ◆ Contract a small private operator to operate the service
- ◆ Jointly contract, with other nearby WSUGs, a larger private sector operator to run several water supply services

³⁸ (RGC, 2000)

Maintenance support system

International experience has shown that training water user groups and providing support for one or two years within a project structure, while the water facility is still new and unlikely to break down, is not enough to achieve long-term sustainability of both the physical infrastructure and the management by the group. It is essential to support community-level management to make water supply systems sustainable. Support does not mean taking over management functions at the community level, but it does mean providing technical and management advice and training to allow communities to manage their own activities. It is important to monitor whether communities are successfully managing their systems, and to take action in cases where there are problems³⁹. Support should also include monitoring the levels of water points where groundwater is abstracted.

A Maintenance Support System will operate under the authority of each district council, through the commune councils. The main functions of this institutional support system are given in Appendix 3. The cost of running this service should be shared between the user community and the local government (through an annual allocation from the national level). The Maintenance Support System will need to demonstrate value for money to justify this cost to the user communities.

Outcome	WSUGs and communities receive technical advice, training and mentoring to ensure long-term sustainability of water supply services managed by the community	Responsibility
Action	◆ Design the maintenance support system including monitoring groundwater levels ◆ Establish the Maintenance Support System in each district and organize staff training	◆ MRD ◆ PDRD

Funding Operation and Maintenance

One of the most important factors in establishing a successful Operation and Maintenance (O&M) support system is political will. As long as the emphasis is on achieving new coverage, the focus will be on finance. The failure of so many water supply schemes in the past should be a major concern at the national level. Unfortunately, the emphasis is on rehabilitating or replacing infrastructure, rather than keeping systems running successfully. A lot of effort will need to be put in to generating political understanding of the issues. One indicator of success in this will be adequate annual funding in national budgets. This is covered in Strategic Objective 5, Component 2 on recurrent funding.

Component 1.4: Markets for WASH products

Supply chains

A supply chain is the term used for the process that relates to all activities involved with the flow and transformation of goods, from the raw material stage through to the end-user, as well as the associated information flows.⁴⁰

The objective of all supply chains is to deliver a successful product at an acceptable profit. The product must meet the aspirations of the customers in terms of:

³⁹ From the draft 10 Year Sector Strategy in 2001–2010, (MRD, 2001)

⁴⁰ This section is based on (Oyo, 2002)

- ◆ Availability
- ◆ Affordability
- ◆ Adequate quality
- ◆ Delivery in an appropriate time

For any supply chain to operate effectively there must be a demand for the goods and services it supports. Important factors include price, product appropriateness and the simplicity of the product's technology. For the private sector to be involved in such a supply chain, it must have adequate incentives: a large enough and reliable demand for products, reasonable profit and regulation of competition. To create and sustain a supply chain there must be a good flow of information between stakeholders, effective management and an environment that does not restrict trade.

Outcome	People and communities can purchase water supply and sanitation products in their local markets through effective supply chains	Responsibility:
Action:	◆ Commission a project to develop supply chains for hand pumps and other water supply, sanitation and hygiene products, based on the resource guide from WSP and other relevant guides	◆ MRD supported by development partners

Specific guidance on this is given in Appendix 3.

Strategic Objective 2: Access to improved sanitation

Component 2.1: Increasing access to sanitation

Global experience shows that traditional approaches to improving sanitation, such as building toilets and other facilities, have not led to significant and sustained coverage. More successful strategies have focused on creating a demand for improved sanitation, by changing people's behaviours and increasing products and services. The Cambodian experience is in line with this. In the past few years, only 20% of the increase in coverage can be attributed to projects, which means 80% of households investing in sanitation are doing it for themselves⁴¹. There is not enough funding to subsidise all rural households to buy toilets, so it is essential that what funding is available is used effectively. There is also not enough understanding of what motivates or inhibits people to improve their sanitation practices.

So, approaches to sanitation will focus on creating demand, so that people need toilets and can buy them at their own expense. They will also focus on services to maintain these in the long term, such as emptying latrine pits and de-sludging septic tanks. Some approaches are already showing success in Cambodia, but there needs to be further research to prove these approaches over the long term. Efforts to improve sanitation will address:

- ◆ **Hygiene behavior change** through approaches such as Community Led Total Sanitation. Within this, it will be necessary to accept that improved sanitation will only happen in stages; the first stage is to get people to consider their behavior and create a demand for better sanitation; the second stage is to motivate people to build and use a basic level of latrine; the third stage is to motivate people to buy and use improved latrines
- ◆ **Marketing** a range of latrine designs that are affordable and appropriate, particularly for poorer people

⁴¹ (WSP, 2008)

- ◆ **Building the capacity of the private sector** and the conditions for small entrepreneurs to provide services in rural areas
Developing financing mechanisms to help poorer households to buy latrines (defined in Section 5.1.2)
- ◆ **Further study** using frameworks such as SaniFOAM⁴² to understand sanitation behaviors and develop effective approaches to sanitation

Outcome	Households buy, construct and use latrines	Responsibility
Action	◆ Develop approaches such as CLTS to change people's hygiene behavior ◆ Motivate communities and households to use toilets ◆ Use marketing approach to promote sanitation products in local markets ◆ Develop local masons and markets so that sanitation products are available in districts, communes and communities ◆ Buy latrines and latrine components	◆ MRD through PDRDs and DORD ◆ DORD through NGOs and private sector ◆ Private sector ◆ NGOs, business and technical training organizations ◆ Households

Sanitation technology

The various technical definitions for sanitation have been classified as improved or unimproved, as shown in Table 8.⁴³ These are based on the definitions of the Joint Monitoring Programme of UNICEF and WHO. The classification will be used for all surveys of access to improved water supply and sanitation.

Table 8: Improved and unimproved sanitation options

Improved Sanitation Options	5. Unimproved Sanitation Options
1. Flush or pour flush to sewerage	6. Public or shared latrine (any type)
2. Flush or pour flush to septic tank or pit	7. Flush or pour flush to elsewhere
3. Pit latrine with slab	8. Open pit latrine without slab
4. Ventilated Improved Pit (VIP) latrine	9. Latrine overhanging water
	10. Other
	11. None

Range of sanitation options and technology development

Although the long-term goal is access to improved sanitation, this will be achieved gradually. The immediate objective is to get people to change their behaviors to use some form of toilet, whether improved or unimproved (simple latrine), rather than open defecation. The medium-term objective is that once on the “sanitation ladder”, people will step up the ladder to an improved sanitation option.

For the poorest people to get on the ladder there needs to be more steps at the bottom, such as a wider range of low-cost options, which are also appropriate for women, children and people with disabilities.

⁴² (Devine, 2009) *Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs*, published by WSP

⁴³ (MRD & Partners, 2008)

Outcome	Sanitation options are available and affordable for the poorest households	Responsibility
Action	◆ Commission research to identify, in Cambodia and other countries, a range of cheaper technical options for latrines. Develop these, publish and publicize the designs in a format suitable for use at community level.	◆ MRD

Affordable technology for toilets in floating villages and flood-prone areas is not yet widely available in Cambodia.

Outcome	Affordable sanitation options are available for households in flood-prone areas and floating villages	Responsibility
Action:	◆ Commission research to identify, in Cambodia and other countries, latrine designs appropriate for floating villages and flood-prone areas. Develop and pilot-test them, according to the R&D procedure in Component 4.	◆ MRD

Component 2.2: Operation and maintenance

Household

Individual households will be responsible maintaining, replacing or upgrading their latrines.

Schools and health facilities

Schools and health centers will be responsible for operating and maintaining their latrines.

Emptying pits and septic tanks

There will be an increasing need to empty the pits of dry and pour-flush latrines, and to remove the sludge from septic tanks. The District Office of Rural Development, supported by PDRD, will work with the private sector to develop services to do this and train people in how to dispose of the contents safely.

Outcome	Service providers empty pits and manage septage safely, according to operating procedures	Responsibility
Action	◆ Develop operating procedures for managing septage and emptying pits ◆ Develop systems for treating and disposing of, or re-using, septage sludge and the contents of pit latrines ◆ Develop services for emptying pits and septic tanks, with training in how to dispose of the contents safely and appropriately	◆ MRD ◆ MRD ◆ Private sector supported by PDRD/DORD

Component 2.3: Sanitation in schools, health facilities and other rural institutions

School sanitation and hygiene education

If a school lacks basic water supply, toilets and hand basins, its students will have poor hygiene habits, increasing the likelihood of major childhood illnesses such as diarrhea and helminth (parasite) infections. This adversely affects school attendance and enrolment rates, and contrib-

utes to poor classroom performance and early school dropout. It also reduces children's capacity to learn, as has been measured in educational performance outcomes and productivity. A lack of appropriate toilets and hand washing basins discourages children, in particular girls who are menstruating, from attending school.

Because children spend a significant amount of their time in and around schools, the environment needs to be healthy, safe and secure, in accordance with the National Child Friendly School Policy⁴⁴. Building separate toilets for boys and girls is one way to encourage girls to go to school.

Schools offer an opportunity to spread the message of good hygiene to the greater community. Children who learn good hygiene practices in school can become important health promoters at home.⁴⁵ Schools are ideal places to establish good hygiene (and other) behaviors, as well as to provide strong environmental models that can serve as examples. The school "model" for sanitation can be used at home, with children leading the way.

Outcome	Schools have improved toilet blocks and hand basins and students understand safe hygiene practices	Responsibility
Action	◆ Develop a national standard for the number of school students and staff per latrine, defined separately for girls and boys, and staff and children with disabilities ◆ Prepare and maintain an inventory of existing water and sanitation facilities, including functionality, in all schools ◆ Build appropriate toilet blocks and hand basins in all rural schools using a demand-responsive approach ◆ Teach life skills as part of the core curriculum to accompany the new infrastructure	◆ MoEYS with support from MRD ◆ MoEYS with individual schools ◆ MoEYS with individual schools ◆ MoEYS with individual schools

Under a demand-responsive approach, schools make informed choices regarding their level of participation, service and service-delivery mechanisms. This type of approach allows schools to decide whether to invest in hygiene, sanitation and water, and allows them to identify the preferred technology and level of service, based on willingness to contribute. A demand-responsive approach will ensure that school staff, children (both girls and boys), existing school health committees and other important stakeholders participate in planning, implementing, operating and maintaining hygiene, sanitation and water services.⁴⁶

⁴⁴ (MoEYS, 2007)

⁴⁵ (Mooijman, Berg, Jensen, & Bundy, 2005)

⁴⁶ (Mooijman et al., 2005)

Sanitation in health facilities and other rural institutions

Outcome	Health facilities and other rural institutions have improved sanitation facilities	Responsibility
Action	◆ Develop a national standard for the number of latrines per inpatient and outpatient, defined separately for males and females and people with disabilities ◆ Prepare and maintain an inventory of existing latrines, water and sanitation facilities, including functionality, in all health centers other rural institutions ◆ Build latrines in all health centers other rural institutions using a demand-responsive approach	◆ MoH ◆ MoH with district health offices or relevant authority ◆ MoH with district health offices or relevant authority

Environmental sanitation – wastewater and solid waste

Wastewater drainage has not been considered a major problem until now. Often, communities use wastewater for small-scale gardening or to plant trees. A study should be done to determine the extent and scale of the problem, and to determine what action needs to be taken.

Similarly, removal and disposal of solid waste has not been addressed in rural areas. The problem of solid waste appears to be growing, with an increase in packaging for products sold in rural areas, and an increase in the use of plastic bags. Again, a study should be done to determine the extent and scale of the problem, and to determine what action needs to be taken.

Outcome	A plan for strategic interventions for environmental sanitation based on a sound understanding of needs	Responsibility
Action	◆ Commission a study on wastewater drainage to assess the extent and scale of the problems and propose solutions ◆ Commission a study on solid waste to assess the extent and scale of the problems and propose solutions ◆ Develop and implement a plan to address wastewater drainage and solid waste removal and disposal	◆ MRD ◆ MRD ◆ MRD and PDRDs

Strategic Objective 3: Hygiene behavior change

Component 3.1: Hygiene promotion

Recently, MRD and partners working on hygiene behavior change decided to focus on three key risk behaviors that will be addressed through hygiene promotion. They are:

- ◆ Open defecation
- ◆ Not washing hands
- ◆ Drinking unsafe water

Commune councils and the CCWC highlighted the need for continuous education on hygiene behavior change, after the initial promotion activities.

It is difficult to assess the effectiveness and impact where promoting hygiene behavior change, because there are few baseline surveys against which to measure change. Surveys are limited in scope as most of them are based on questionnaires without observation. The results, therefore, are an indication of people's knowledge and to some extent their attitudes, but not necessarily their practices.

Outcome	People understand and adopt safe hygienic practices in relation to sanitation and water supply	Responsibility
Action	◆ Finalize and disseminate the Hygiene Promotion Guidelines, monitor their use and evaluate their effectiveness in achieving change ◆ Review and revise Hygiene Promotion Guidelines after evaluating their effectiveness ◆ Carry out baseline and follow-up surveys of hygiene practices and report results to the District Office of Rural Development ◆ Conduct hygiene behavior change campaigns in communities and households ◆ Conduct regular refresher courses to encourage hygiene behavior change	◆ MRD and MoH ◆ MRD and MoH ◆ Organizations promoting hygiene behavior change ◆ DORD through CCWC and organizations promoting hygiene behavior change ◆ CCWC with DORD

Strategic Objective 4: Development and operation of means to achieve sustainable services

Component 4.1: Sector management

The strategy requires the sector to make major changes in institutional arrangements, including decentralizing the delivery of services to the district level through the private sector, as well as other specific points. MRD coordinate this with other relevant institutions, including the Ministry of Economics and Finance, the Ministry of Interior and NCDD.

Outcome	The RWSSH Sector is appropriately organized and equipped to function effectively and efficiently to achieve the MDGs and the Sector Vision	Responsibility
Action	◆ Coordinate and manage the various actions of institutional change in the strategy and the accompanying 5-year Implementation Plan ◆ Monitor the progress of action points and the outcomes of the RWSSH Strategy	◆ MRD ◆ TWG-RWSSH

Organizational arrangements and restructuring under D&D

The vision of RGC stated in the Strategic Framework for Decentralization and Deconcentration Reforms is to:

Develop management systems of provincial/municipal, district/khan and commune/sangkat levels based on the principles of "democratic participation". This system will operate with transparency and accountability in order to promote local development and delivery of public ser-

vices to meet the needs of citizens and contribute to poverty reduction within the respective territories.⁴⁷

This policy direction was confirmed with the adoption of the Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans (the “Organic Law”)⁴⁸. The NSDP also recognizes the need for essential reforms in public administration and sectoral reforms to make significant progress towards achieving the government’s long term vision.⁴⁹

Domestic water supply and sanitation are essentially local services for communities and households. Therefore, arrangements for delivering these services should be developed and managed at the local level.

It is not feasible or affordable for every commune council to employ specialist technical staff for water supply and sanitation. Currently, there is a limited number of people with the relevant knowledge, experience and aptitude to work in the RWSSH Sector, and in future, it is unlikely that young people entering the job market will be interested in working in the sector.

Given the limited human and financial resources available, the most appropriate level for managing service delivery under the D&D policy and legislation is the district, with the district council as the locally accountable body supported by an administration (including technical offices) staffed by civil servants. Each district will be given the capacity and financial resources to serve the commune councils within its geographic area. Initially, MRD will strengthen DORD. At a later stage, as the D&D process evolves, the role and function of DORD will be reviewed as part of democratic accountability for local services.

Outcome	Service delivery is coordinated, managed and monitored at the district level	Responsibility
Action	◆ Strengthen DORD in each district supported by PDRDs	◆ MRD with PDRD

Currently, there is virtually no capacity at the district level, but within five years it should be possible to establish the required support systems for communities to get access to, and sustain, the services. This section defines the end state – the transition to achieve this will need to be done in stages, as defined in the accompanying implementation plan.

Roles and responsibilities under D&D

Roles and responsibilities were defined in the National Water Supply and Sanitation Policy (Part III – Rural Water Supply and Sanitation)⁵⁰. At sub-national levels these have been superseded in some respects and will be adjusted to conform to the policy of D&D⁵¹ and the relevant legislation⁵². The change at the national level will be that MRD will move from managing projects and programs to managing the sector according to the National Policy. The broad roles are summarized in Table 9 and shown diagrammatically in Appendix 4. The detailed roles are shown in two matrices in Appendix 5, one for service delivery and one for the enabling environment.

⁴⁷ (RGC, 2005)

⁴⁸ (RGC, 2008a)

⁴⁹ Paragraphs 3.01 and 3.07 in the National Strategic Development Plan 2006–2010

⁵⁰ (RGC, 2003)

⁵¹ Strategic Framework for Decentralization and Deconcentration Reforms (2005)

⁵² Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans, *Royal Kram No. NS/RKM/0508/017*

Table 9: Organizational roles

Organization or group	Roles
MRD	◆ Secure financing for the RWSS sector ◆ Formulate, disseminate and implement RWSS policies, regulations and strategies ◆ Prepare plans for putting the policy into practice ◆ Coordinate internal and external assistance and sector interventions ◆ Develop and promote technical assistance in human resources ◆ Formulate development, research and community education programs ◆ Develop and strengthen mechanisms or systems to monitor and evaluate the performance of the sector, to ensure progress towards the sector vision is on target ◆ Advocate ◆ Lead and coordinate Water Supply, Sanitation and Hygiene Services
PDRD	◆ Collect necessary planning data and information ◆ Prepare provincial development plans and related budgets ◆ Facilitate, monitor and evaluate all rural development programs and projects ◆ Support inter-departmental cooperation and coordination, in RWSS services, at the provincial level Support the development of the private sector, especially the development of the RWSS sector ◆ Advocate
District Office of Rural Development	◆ Capacity development of WSUG ◆ Support the WSUG (mentoring for management, finance and maintenance, conflict resolution) ◆ Water quality surveillance ◆ Data collection for the management information system ◆ Technical advice for the construction and quality control of new infrastructure ◆ Quality control of providing new infrastructure ◆ Hygiene promotion
Private sector NGOs ⁵³	◆ Provide RWSSH services⁵⁴ ◆ Facilitate service delivery ◆ Community education, awareness-raising, promote sanitation and marketing ◆ Building partnerships and promoting networking ◆ Capacity building ◆ Research and innovation ◆ Engaging in policy dialogue

Outcome	The roles of organizations in the RWSSH Sector are clearly defined	Responsibility
Action	Promulgate a prakas defining the roles of organizations involved in the sector	MRD

Governance and accountability⁵³

One of the principles of D&D reform is the accountability of the public sector. This principle will strengthen accountability, and make all levels of administration transparent. All organizations and people in the sector are accountable for their actions on multiple levels: socially, financially, technically and environmentally.

Outcome	Effective local accountability mechanisms are in place	Responsibility
Action	Develop procedures to make local authorities accountable to communities for water supply, sanitation and hygiene promotion services, including the use of social audits	MRD
	Develop guidelines for local government, service providers and support organizations on how to address multiple upward and downward accountabilities	MRD
	Develop a system for DORD to seek, receive and address feedback, for example, complaints from communities, households and commune councils, including a comparative performance monitoring system between districts and communities	MRD

Guidelines and procedures

Guidelines and procedures are needed to standardize the service delivery. Guidelines should set basic standards which, if applied correctly, will improve both the delivery of services and accountability. The guidelines will tell communities what they should expect from service providers.

Guidelines will be compiled and produced as one comprehensive RWSSH Service Manual, with specific guidance on:

- Planning
- Communication
- Community preparation and mobilization
- Community decision making for selecting new technology
- Rehabilitation of water supply infrastructure
- Preparation of water safety plans, with generic format
- Response to water failing to meet quality standards
 - CLTS
 - Sanitation marketing
 - Hygiene promotion
 - Principles of responsibility, accountability, predictability and transparency for the

⁵³ From (Carrard, Pedi, Willetts & Powell, 2009)

⁵⁴ NGOs should avoid a tendency to develop parallel service delivery structures which could potentially circumvent rather than build upon and strengthen existing initiatives and in-country institutions (Carrard et al., 2009), for example, direct service delivery that undercuts the private sector.

- ◆ private sector
- ◆ Gender mainstreaming
- ◆ Environmental impacts and procedures
- ◆ Management information system
- ◆ Accountability (social, financial, technical and environmental) for local government, service providers and support organizations

Outcome	Effective delivery of services with set standards for accountability	Responsibility
Action	◆ Review existing guidelines and procedures and revise if necessary ◆ Produce new guidelines and procedures as required in other parts of this strategy ◆ Publish and disseminate guidelines to national and local government authorities, service providers, district and commune councils and communities ◆ Monitor the use and effectiveness of guidelines and revise if necessary	◆ MRD with partners from RWSSH Sector ◆ MRD with partners from RWSSH Sector ◆ MRD ◆ PDRD reporting to MRD

Component 4.2: Human resources and capacity development

Sub-national and national government

Currently, there is virtually no capacity at the district level, but it should be possible within five years to establish support systems in DORD to help communities get access to and sustain services. Depending on the size of the district, two or three officers will be required for the O&M support function, plus a similar number of hygiene promotion staff⁵⁵. In the short to medium term, each district will need to employ at least one technical officer to provide advice to commune councils and WSUGs on the construction and quality control of new infrastructure. Each DORD will include at least one woman as part of the team.

Staff at DORD will have the basic competence to carry out the tasks, or will have the aptitude to learn.

As part of the D&D process, major capacity development of the commune councils and sub-national government administrative and technical support systems is being carried out. There needs to be good coordination between sectors and the D&D process to ensure that the overall capacity development is feasible.

⁵⁵ Although in theory this could be combined with MoH staff at district level, the demands of the role make it a full-time job in its own right. It should not be combined with other responsibilities.

Outcome	The capacity to facilitate and sustain services at sub-national level supported by national level is in place	Responsibility
Action	◆ Strengthen capacity of DORD staff ◆ Prepare a comprehensive capacity development plan to determine: - the experience and skills required for the tasks at provincial and district level; - the capacity and adequacy of existing staff - the additional training that will be required for staff to fulfill the roles - the costs of implementing the plan ◆ Coordinate capacity development planning with other sectors and the D&D process to ensure that the overall capacity development is feasible ◆ Implement the capacity development plan ◆ Develop appropriate diploma courses for training sub-national staff and staff of other organizations	◆ MRD, PDRD ◆ MRD ◆ MRD ◆ MRD and institution providing training course ◆ MRD

Component 4.2: Private sector development

The national policy is to “Create a competitive environment that motivates the private sector to supply cost-effective RWSS services that respond to community demand, especially in underserved areas”.⁵⁶ The strategy is premised on the private sector taking a major role in providing services to rural communities and individual households. The services range from short-term infrastructure to long-term and indefinite operation of water supplies and support services. The term “private sector” covers a wide range of organizations and individuals. These include village- and commune-based artisans and masons, village- and commune-based mechanics, local markets or shops, local manufacturers, drilling companies, consultants (individuals and companies) and specialist companies.

There are three areas to support in developing the private sector:

- ◆ Creating a competitive environment, including transparency and competition, with contractual relations between user groups, service providers and local authorities
- ◆ Access to capital investment and loans
- ◆ Developing business and technical skills

Creating a competitive environment

There are a number of factors in creating an enabling environment for SMEs, many of them outside the scope of the RWSSH Sector and this strategy. The range of factors is shown in Box 2.

⁵⁶ (RGC, 2003), Chapter 5: Private Sector Participation

Box 2: Criteria for measuring the Cambodian provincial business environment

Entry costs	A measure of the time it takes firms to register and receive all the necessary licenses to start a business, the number of licenses required and the official costs of obtaining them
Property rights	A measure of the formal rights to business premises and the security of tenure once land is properly acquired and titled
Transparency	A measure of whether firms have access to the information they need about government regulations and procedures, as well as the related legal documents necessary to run their businesses; whether regulatory information and legal documents are available to everyone who asks; whether new policies and laws are communicated to firms and enforced in a predictable manner
Time cost of regulatory compliance	A measure of how much time firms spend complying with government regulations, how long they wait for procedures to be completed, as well as how frequently firms are inspected by local government agencies
Informal charges/bribes	A measure of how often firms pay informal charges such as bribes and kick-backs to obtain government contracts; the extent to which these informal payments are obstacles to business operation and whether informal payments are predictable and achieve the expected results
Participation	A measure of whether firms are consulted about proposed provincial policies and whether business associations or other interest groups advocate on behalf of business owners
Crime prevention	A measure of how much firms pay in costs resulting from theft, as well as the cost of preventing crime such as paying for security services and/or protection money
Tax administration	A measure of both administrative procedures related to paying tax and the cost of tax in the province
Proactivity of provincial leaders	A measure of the creativity and willingness of provincial authorities to interpret national policies and regulations, in favor of local private firms, and to develop their own provincial initiatives to promote private sector development
Dispute resolution	A measure of firms' satisfaction with the outcomes of formal and informal methods of dispute resolution in their province

Source: (IFC & The Asia Foundation, 2009)

A number of things, specifically related to water supply, sanitation and hygiene, can be done to improve conditions for SMEs. RGC's procurement rules, including the Commune/Sangkat Funds PIF, are adequate for competitive tendering for services and projects. There needs to be compliance – eliminating collusion and malpractice in the tendering process and while carrying out the contract.

Outcome	An accountable competitive environment for SMEs involved in the RWSSH Sector is used for administering service delivery contracts	Responsibility
Action	◆ Establish three additional procedures to ensure compliance with contracting and procurement procedures: - Make the water and sanitation user group party to the contract, so the contract is between the commissioning authority and the WSUG on one side, and the private sector company on the other - Following the tender process, publish and disclose to the community the bids of the lowest three bidders together with the cost estimate by the commissioning authority (including the way the estimate was built up from first principles of costing labor, plant and materials) - At the end of a construction contract, formally disclose the accounts of the project to the community, detailing how the project funds have been spent	◆ MRD
	◆ Prepare and publish guidelines of the principles of responsibility, accountability, predictability and transparency for the private sector ◆ Distribute these guidelines to all sub-national government offices involved in the sector and to all commune councils. ◆ Distribute these guidelines to all SMEs with an interest in providing a service in the sector	◆ MRD ◆ MRD ◆ PDRD/DORD

Outcome	Private sector is confident to invest in long-term operational service provision	Responsibility
Action	Contracts for service providers that include investment in infrastructure will be for at least ten years, to allow the contractor to spread the cost of the investment and to get a return on it. Such contracts will include clauses for early termination, in the event of poor performance of the service	MRD

Access to capital investment and loans

It is estimated that the total demand for credit by micro and small business entrepreneurs could amount to US\$100–125 million. Roughly half of this is provided by existing financial services providers. The financial sector is still underdeveloped, lacking in rural development banks and limited by a weak rural finance network. Only seventeen commercial and specialized banks operate in Phnom Penh and major provincial towns. Developing regular commercial lending activities in rural areas has been restricted by the high cost of operations, the inability to verify and enforce property rights and the low level of economic activity. The result is that the vast

majority of the rural population has almost no access to formal financial services.⁵⁷

Some microfinance institutions are developing rural networks that will be a channel to providing small loans to individuals and small private sector businesses. The main obstacle to this is the availability of cheap capital for on-lending at interest rates that poorer rural people could afford.

Outcome	Funding is available for small-scale lending to rural SMEs for sanitation and water supply services and products	Responsibility
Action	Identify and secure capital for investment through micro-finance organizations	MFIs

Developing business and technical skills

The need for basic business skills in management and finance is frequently stated as a constraint on enabling small businesses to develop.

Outcome	SMEs working in rural water supply and sanitation are competent in basic business management and financial management	Responsibility
Action	◆ Identify appropriate training institutions and develop training programs ◆ Provide training to SMEs at the local level ◆ Provide follow-up mentoring and support to small businesses	◆ MRD ◆ NGOs, business training organizations, universities ◆ NGOs, business training organizations, universities

Planning and management information systems

Planning for the RWSSH sector needs to be based on accurate and reliable information. The term “monitoring” is generally translated into Khmer to mean “control”. This implies the wrong intent, so the term “management information system (MIS)” is used instead.

Outcome	A unified management information system is used for effective planning and management of the RWSSH sector	Responsibility
Action	◆ Reform the current MIS, with their multiple databases, to provide one unified information system ◆ Make the MIS accessible to all sector stakeholders by putting it on the internet and by other means for those without internet access ◆ Ensure that all data is collected for infrastructure, institutional and social factors, and is disaggregated for women, men, children, people with disabilities, and ethnic minorities	◆ MRD ◆ MRD ◆ MRD, PDRD, DORD

⁵⁷ (AMK, 2009)

The framework for a management information system is given in Appendix 3.

Component 4.5: Evaluation and learning

It is important to learn from each other's experiences of different approaches. Although individual organizations conduct evaluations of their work, there is no system for sharing the lessons from these, and there is no system for conducting evaluations and studies of different approaches in the sector⁵⁸. Evaluation will include the study of the functionality of WSUGs (factors that enable or inhibit success, gender); and of why men or women revert to, or resist, open defecation.

Outcome	There is an effective system in place for learning from the experiences of sector stakeholders	Responsibility
Action	◆ Establish a system for sharing evaluations under the WATSAN Sectoral Working Group ◆ Evaluate and publish the outcomes and studies of specific aspects and approaches in the sector	◆ MRD ◆ MRD

Component 4.6: Research, development and innovation

There are already a number of technical options for water supply and sanitation in Cambodia. There are, however, still challenges in developing and applying appropriate technology for use in difficult areas, such as drought-prone areas without groundwater, and latrines in areas subject to seasonal flooding. Similarly, there are well-established approaches to service delivery for water supply, and newly introduced approaches for sanitation, such as CLTS and social marketing.

There still needs to be additional technology and approaches. These may be adapting examples from other countries, or developing new ideas to meet a specific need in Cambodia and it is essential that such things are carefully introduced and applied through a system of rigorous piloting, testing and validation before being applied generally. We must remember that it is poor rural people and communities, and women in particular as managers of domestic water and sanitation, who are being asked to take risks in trying out new things.

Outcome	A rigorous procedure is applied to research, development and innovation of technology and software approaches	Responsibility
Action	◆ Draw up systematic procedures for applying, testing, approving and disseminating new approaches and technology development ◆ Establish a committee for guiding and approving such work	◆ MRD ◆ MRD

The committee and procedures are given in more detail in Appendix 3. This committee will be responsible for evaluation and learning.

Component 4.7: Communication

The low priority afforded the sector by the RGC and the lack of awareness outside the sector, are of serious concern. Communication, sector needs and priorities, issues and technology are weak at a number of levels – national to provincial to district to communities; between ministries and government decision makers; and between development partners and government.

⁵⁸ The recent evaluation of CLTS is one of the exceptions.

Outcome	Effective communication within and outside the RWSSH sector	Responsibility
Action	◆ Develop and implement a communication strategy to address: - Increasing the political profile of the sector in relation to its influence on political priority areas, such as health and economic development; - Increasing the media profile of the sector; - Publicizing the strategy both within and outside the sector; - Establishing inter-ministerial communication mechanisms; - Identifying key data and information; - Developing internal communications channels and mechanisms	◆ MRD and development partners

Component 4.8: Poverty, minorities, vulnerability

The National Social Protection Strategy for the Poor and Vulnerable identifies special vulnerable groups, including orphans, the elderly, single women with children, people living with disabilities and people living with HIV and/or TB.⁵⁹

Poverty

Reducing poverty is the government's highest priority. Successful progress towards this depends on the totality of pro-poor policies and efforts in all sectors. Accordingly, all strategies should focus on having a positive impact on poverty. In particular, targeted investments should be directed towards underserved people and areas, especially those with high poverty prevalence.⁶⁰ The Implementation Manual on the Procedures for Identification of Poor Households⁶¹ provides a process and indicators for identifying poor households and developing Lists of Poor Households in each village. Step 6 of the process is for a database of poor households to be compiled and maintained by Provincial Departments of Planning, for use by organizations, and to provide services to poor households.⁶²

Outcome	The poorest and most vulnerable households are prioritized for service provision	Responsibility
Action	◆ Give priority to the poorest and most underserved people and areas ◆ Identify the poorest districts and communes within provinces and the poorest households within villages by referring to the Lists of Poor Households developed and maintained by the Provincial Planning Departments	◆ Organizations developing services ◆ Organizations developing services

Minorities

Providing services will conform to the National Policy on the Development of Indigenous Peoples (2009), with particular consideration given to any special cultural needs or practices.

⁵⁹ (Council for Agricultural and Rural Development, 2010)

⁶⁰ NSDP 2005–2010 (RGC, 2006)

⁶¹ (Ministry of Planning, 2008)

⁶² This is part of the project commonly referred to as the ID Poor Project

Disability

The Ministry of Social Affairs, Veterans and Youth Rehabilitation has prepared a National Plan of Action for Persons with Disabilities, including Landmine/ERW Survivors (2009–2011).

Addressing disability means assessing the implications for disabled people of any planned action, legislation, policies or programs, in any area, at all levels. By making the concerns and experiences of people with disabilities an integral part of all policies and programs in all political, economic and societal spheres, the ultimate goal of equality for disabled people can be achieved.

It is important to bear in mind that people with disabilities not only have different impairments that require different types of attention, but that there are also differences between the special needs of men and women, children and the elderly, people from urban or rural backgrounds or different cultural, religious or traditional backgrounds.

Outcome	The needs and concerns of people with disabilities are addressed	Responsibility
Action	◆ The development and provision of RWSSH services shall conform to the Law on the Protection and Promotion of the Rights of Persons with Disabilities (2009) ◆ All projects and programs will consider the needs of persons with disabilities throughout all stages of their project cycles ◆ Disabled people's organizations (DPO) will be included or represented in any consultation process, committee or advisory board	◆ MRD, DAC, development partners and all service providers ◆ All service providers ◆ TWG-RWSSH, MRD, Other committees and advisory boards

People with all kinds of disabilities must be included. DPOs usually represent a certain group of people with a particular impairment (blindness, war injuries), while other groups might be omitted. Where possible, women with disabilities should be represented.

Component 4.9: Gender mainstreaming

Mainstreaming a gender perspective in all types of activities (referred to as gender mainstreaming) is a globally accepted strategy for promoting gender equality. Mainstreaming is not an end in itself, but a means to the goal of gender equality. Mainstreaming means making sure gender perspectives and attention to the goal of gender equality are central to all activities – policy development, research, advocacy/dialogue, legislation, resource allocation, and planning, implementing and monitoring programs and projects. Developing an adequate understanding of mainstreaming requires clarity on the related concepts of gender and equality.⁶³

The Ministry of Women's Affairs has published Neary Rattanak III, a Five-Year Strategic Plan 2009–2013 for Gender Equality and the Empowerment of Women in Cambodia, which contributes to gender mainstreaming. It notes that “although there is good progress in mainstreaming gender in policies, programs and mechanisms to support gender mainstreaming at national and sub-national levels, the capacity for gender analysis and evidence-based advocacy remains weak. Harmonizing gender mainstreaming plans with sector strategies and monitoring mechanisms, and mobilizing adequate resources for effective implementation, remains a challenge.”⁶⁴

⁶³ (OSAGI, 2001)

⁶⁴ (MOWA, 2009)

It includes a Gender Mainstreaming Program that sets outputs/targets for gender mainstreaming at sector level and gender mainstreaming in government reform programs. Relevant points under these are:

- ◆ Gender-responsive poverty reduction...and rural development policies and services...
- ◆ Health services, water, sanitation and hygiene promoted, especially targeting women and children
- ◆ National program for sub-national democratic development is gender responsive

Within MRD there is a Gender Mainstreaming Action Group and MRD was one of the first ministries to create a Gender Mainstreaming Action Plan 2006–2010. However, both the content and implementation of the plan are weak.⁶⁵

Outcome	Gender is mainstreamed in the RWSSH Sector	Responsibility
Action	◆ Review and update the Gender Mainstreaming Action Plan ◆ Review all existing and future guidelines and sector procedures to ensure they adequately address and advise on gender issues ◆ Develop a gender orientation course suitable for government staff, elected councils and service providers in the RWSSH Sector ◆ Run the gender orientation course for different stakeholders	◆ MRD Gender Working Group with MOWA ◆ MRD Gender Working Group with MOWA ◆ MRD Gender Working Group with training organization ◆ Training organizations

Other aspects of gender mainstreaming are incorporated in the relevant components of this strategy.

Component 4.10: Environment

Water supply and sanitation are very closely related to the environment. Water supply depends on getting good quality water from the environment, and poor sanitation risks polluting that source of water, as well as increasing the burden of disease in the environment. There is limited understanding of these issues, including integrated water resources management (IWRM) at community and sub-national levels.

The Ministry of Environment has passed legislation, including the Law on Environmental Protection and Natural Resource Management and supporting prakas, but there needs to be clearer guidance on the application of these within the RWSS.

⁶⁵ (Pennells, 2009)

Outcome	The environmental impacts of water supply and sanitation are understood at all levels and impacts are mitigated in developing and providing services	Responsibility
Action	◆ Commission a study on the level of understanding and links between water, sanitation and environmental impacts including IWRM and risks to health ◆ Develop guidelines and procedures for addressing environmental impacts, including relevant legislation	◆ MRD ◆ MRD

Component 4.11: Climate change, and managing and reducing disaster risk

The main disaster risks for rural water supplies and sanitation are flooding and drought. These risks are likely to increase with climate change, with the risk of a rise in sea levels affecting coastal areas, which may cause saline intrusion and affect groundwater.

The National Committee for Disaster Management (NCDM), chaired by the Prime Minister, has been designated to lead disaster management, including disaster risk reduction, disaster preparedness and coordination in the event of a disaster. The NCDM published the Strategic National Action Plan for Disaster Risk Reduction 2008–2013.

Outcome	Water supply and sanitation services are developed to reduce the impact of disasters and the risk of climate change	Responsibility
Action	◆ Coordinate with the NCDM on actions for disaster preparedness and disaster management ◆ Adapt technical designs for flood-prone areas - Prepare vulnerability maps showing flood- and drought-prone areas and develop mitigation measures	◆ MRD ◆ MRD ◆ MRD and NCDM

Strategic Objective 5: Sector financing

Component 5.1: Financing capital costs

Sources of funding include:

- ◆ Government, to central line ministries and through the Commune Sangkat fund
- ◆ User contributions (cash, in-kind⁶⁶ and through repayment to private sector funding)
- ◆ Loans⁶⁷ and grants from development partners (multi-laterals, bi-laterals and NGOs)

The Sector Financing Strategy proposes three ways to reduce the funding gap, two of which are relevant to the rural sector⁶⁸:

- ◆ Substantial increase in public budget support in the period to 2015 – followed by a decrease in the period after 2020
- ◆ Minor increase in private funding provided by households themselves

⁶⁶ In the National Policy, communities are required to “Contribute to the implementation and the construction of water supply and sanitation facilities, including financing, labor, materials and other forms of contribution”.

⁶⁷ Loans can also be regarded as government funding, as they have to be repaid in the future from government revenue.

⁶⁸ The third way of increasing user charges is only relevant for the urban sector.

The Sector Financing Strategy assumes official development assistance will remain at the same level in fixed USD throughout the period of the strategy, and that it is highly unlikely to increase. It also anticipates that major donors, such as ADB, will reduce the amount of grants, while increasing the loan amount (provided the RCG wants to obtain such loans).⁶⁹

Communities are expected to contribute to the capital cost of infrastructure. The proportion for this contribution needs to be applied uniformly by different support organizations, but may need to vary in different parts of the country, according to local economic conditions. A procedure will be developed for sub-national government to determine the percentage contribution by province or district.

Water supply and sanitation infrastructure and software

Outcome	Funding for new or rehabilitated infrastructure is available	Responsibility
Action	◆ Prepare a Sector Investment Plan for Rural Water Supply and Sanitation - Advocate for an increase in government funding by demonstrating the economic and social benefits of investment in water supply and sanitation ◆ Review the contribution that should be made by communities in each province and district: - Develop a procedure and criteria for setting the rate of community contribution - Set the rates for local contribution according to the procedure	◆ MRD with MEF, Development partners - MRD and RWSSH-TWG ◆ MRD with MEF, local authorities

Sanitation financing mechanisms

Experience in Cambodia and other countries has shown that direct subsidies for sanitation infrastructure are not effective in promoting widespread construction of latrines, and changes in sanitation behavior to ensure that they are used. There are a number of problems associated with their use, including infrastructure being too expensive, suppression of the natural market for sanitation, deterring other sources of funding (particularly household and commercial funding), ownership and use of the latrine and capture by the rich at the expense of reaching the poorest. Direct hardware subsidies should be used with caution and only as a last resort. Public finance should mainly be used to stimulate demand and to develop the enabling environment (including the availability of affordable sanitation products) so that households pay for their own toilets. Targeted hardware subsidies may be provided to enable poor households to buy toilets and to reach the sector vision of 100% coverage. Subsidies will only be provided to enable the poorest households to buy toilets through alternative mechanisms, as described in the following pages.

Financing needs to focus on delivering measurable and achievable outputs that will significantly help achieve the desired outcome. Output-based subsidies deliver public funding in ways that are cost effective and have measurable impacts on access and environmental performance. Investments could be combined with ongoing performance to be incentivized. A key challenge in the sanitation sector (and other services which are not purely infrastructure delivery but also require change in behaviors and deeply rooted cultural practices) is that outcomes are often difficult to measure and even harder to attribute to a single intervention.⁷⁰ Potential output-based aid (OBA) funding mechanisms for different types of sanitation services are shown in Table 10.

⁶⁹ (COWI, 2010)

⁷⁰ (Trémolet & Evans, 2010)

Table 10: OBA financing mechanisms for different types of sanitation services

Types of services	Cost elements that could be partially covered ex-post		Indicative outputs (for monitoring and payments)
	Capital costs	Operating costs	
Software			
Sanitation marketing		Staff salaries, transport costs, materials development	◆ Number of visits, triggering events ◆ Number of people who decide to invest in a latrine following visit
Social mobilization, triggering			◆ Village/community becoming ODF
Hygiene promotion			◆ Number of people adopting hygienic practices
Microfinance to households		Interest rate subsidy, costs of developing new financial products	◆ Volume of loans provided (as subsidy incorporated in the interest rate, disbursed only if loans are provided)
Hardware			
Build on-site sanitation (pit latrines or septic tanks)	Construction costs		◆ Village/community becoming ODF ◆ Number of latrines built for eligible households ◆ Number of slabs sold to eligible households
Empty latrines or septic tanks	Start up costs (equipment) and initial rehabilitation	Running costs of equipment, fuel, salaries, costs of disposal	◆ Number of latrines emptied for eligible households ◆ Volume of waste removed
Transport pit waste and septage to designated discharge point	Start up investment costs	Salaries, fuel, cost of discharge	◆ Number of latrines emptied for eligible households ◆ Volume of waste transported to approved location

Adapted from (Trémolet & Evans, 2010)

There is limited experience in Cambodia of innovative ways to provide subsidies. MRD will establish a steering group to help develop alternative funding mechanisms. This group will include representatives from the Ministry of Economics and Finance, development partners, NGOs and micro-finance organizations.

Different approaches will be needed for each of the un-served groups, initial hygiene promotion and infrastructure and long-term operation and maintenance. Target groups for each approach should be clearly identified, and any gaps highlighted so that complementary approaches can be adopted.⁷¹

⁷¹ (Robinson, 2010)

Approaches to software and hardware subsidies will take into account a number of factors, as outlined in Appendix 3.

Outcome	Tested mechanisms that most effectively provide sustained access, protect public health and minimize negative impacts on the environment are applied	Responsibility
Action	◆ Establish a steering group to guide the development of alternative funding mechanisms, using the procedures of component 6: Research, development and innovation Develop and pilot-test financing mechanisms ◆ Monitor the effectiveness of the mechanism in terms of inclusion and exclusion of the target group and stimulating the adoption of safe sanitation behaviors After a trial period conduct a comparative evaluation of different financing mechanisms Develop guidance on mechanisms appropriate for different target groups	◆ MRD with MEF and Development Partners - Development partners, local authorities, NGOs ◆ MRD - MRD ◆ MRD with MEF and Development Partners

Capacity development

The costs of capacity development in Component 4.2 and for private sector development in Component 4.3 are not included in the Sector Financing Strategy. These will need to be estimated as part of the Capacity Development Plan.

Outcome	Funding is available to develop institutional capacity and private sector for management	Responsibility
Action	- Estimate the costs of the Capacity Development Plan ◆ Estimate the costs of private sector development ◆ Advocate for an increase in government funding by demonstrating the economic and social benefits of investment in water supply and sanitation ◆ Seek development partners to engage in and fund the Capacity Development Plan and private sector development	◆ MRD ◆ MRD ◆ TWG-RWSSH ◆ MRD with MEF

Component 4.11: Financing recurrent costs

The community will pay for the full operating costs of the water supply service, including paying staff or contractors and the costs of repairs, maintenance and replacing wearing parts (as outlined in Component 1.3), in accordance with the National Policy on RWSS. The WSUG should establish and maintain a maintenance fund for this, with regular contributions from households. The WSUG will make full and regular disclosure of the accounts to the community. Households will pay the operating and maintenance costs of their own latrines, including managing septage and emptying pits.

The cost of running the Maintenance Support System will be shared between the community (from its maintenance fund) and the local government (through an annual allocation from central government).

The recurrent costs of the services will be paid by national and sub-national government from annual budget allocations.

The cost of continuing hygiene promotion and education (part of Component 3.1) will be paid out of the social component of the commune/sangkat funds.

The government's financial system is currently being reformed through the Public Financial Management Reform Program (PFMRP), started in 2004 and now in its second phase. Relevant characteristics of the envisaged system include:⁷²

- ◆ A clear legal separation of functions and fiscal powers for the national and sub-national levels, yet within a unified budget system that covers all government offices, functions, programs and projects
- ◆ A consistent analytical framework across all sectors, with budget transactions classified on an administrative, economic and functional, or programmatic basis. It will identify poverty-related spending and support managing public expenditure.

The sub-national financial system legal framework is also being developed, including the preparation of the "Law on the Financial Regime and the Management of Assets of the Sub-national Administrations". This will determine the mechanism for allocating and disbursing the recurrent budget for the provincial and district administrative systems, including line departments at those levels.

Outcome	Recurrent funding for the sustainability of water supply and sanitation services available	Responsibility
Action:	◆ Pay the full operating costs of the water supply service, including staff or contractors, repairs and maintenance, replacement of wearing parts and contributions to the Maintenance Support System ◆ Establish and maintain a maintenance fund for this purpose, with regular contributions from user households ◆ Households will pay the operating and maintenance costs of their own latrines, including managing septage and emptying pits ◆ Budget, allocate and provide funding for recurrent costs, in accordance with existing and future financial management cycles	◆ Households through WSUGs ◆ WSUGs ◆ Households ◆ MEF and sub-national financial system.

⁷² (MEF, 2010)

9. TIME FRAME

The strategy covers the period from 2011 to 2025, the date set in the National Policy for Rural Water Supply and Sanitation for achieving the sector vision of access to service for all rural people. There is an intermediate point in 2015, the date set for achieving the Cambodian Millennium Development Goals.

9.1. Transitions

The period from 2011 to 2015 will be a transition period. During this time the major changes to institutional arrangements and capacity building will be made. The aim will be to have the changes in place in time for the major increase in service delivery that is required between 2015 and 2025.

Capacity building needs to be coordinated with changes in institutional arrangements, including capacity building for other processes, for example the NCDD Capacity Building Plan for 2010.

The actions, timing and order for changes are set out in the Five-Year Implementation Plan.

9.2. Review

MRD will carry out periodic progress reviews of the strategy. If necessary it will make adjustments to take into account changing needs and circumstances, in particular in response to the evolving process of deconcentration and decentralization. The first review will be done in the first half of 2013, midway through the transition period.

Appendix 1: Definitions

Access to water supply services: The availability of an improved water source within 150 meters of a house. An “improved” water source is one that is more likely to provide “safe” water, such as a household connection or borehole.

Access to adequate sanitation: One of the improved sanitation options is available at the user’s home.

Approaches: Ways of putting a program or project (roles and rules) into practice.

Basic level of water supply and sanitation service: The basic quantity of water is 20 liters per person per day, within 150m of a user’s home.

Community: The specific group for whom the RWSS sectoral activity is undertaken.

Community cost-sharing: Payment by members of the consumer community towards capital costs, recurrent costs, operation and maintenance costs, or any other cost related to the service.

Decentralization: RGC gives sub-national councils the ownership of government functions, authorities and resources to respond to local needs. The council must be accountable to local residents.

Deconcentration: RGC, a ministry or other government institution, delegates functions and resources to their own lower units, or a level of council, to carry out activities on their behalf. They must be accountable to the RGC, ministry or government institution.

Demand responsiveness: Activities or approaches that ensure consumers obtain goods or services they want and are willing to pay for.

Development partners: Donors, development banks and multilateral development organizations.

Disability: A person with disability is any citizen who lacks any physical organ or capacity or suffers any mental impairment that causes restriction to his or her daily life or social activities and which causes significant differences from non-disabled people, and who has disability certification from the Ministry of Health.

Drinking water: Water that meets water quality standards and is safe to drink.

Effective use of services: Water and sanitation services are used and managed in ways that maximize expected health, economic and productivity benefits.

Empowerment: The effort performed by an individual or group of individuals to build and strengthen a community's independence and self-reliance/confidence by stimulating the community's own initiative and creative potential.

Enabling environment: Policies, financial instruments, formal organizations, community organizations and partnerships which together support and promote the effective and efficient delivery of services.

Equity: Facilities are accessible to all members of the community without distinction of sex or social position.

Environmental sanitation: The wider concept of controlling all the factors in the physical environment that may impact badly on people's health and well being. It normally includes drainage, solid waste management and vector control, as well as the activities covered by sanitation.

Evaluation: Checking, collecting and analyzing information about past project development to help make decisions about the continuation of the project and/or to improve the performance of similar projects and the sector as a whole.

Gender: The socially constructed roles, behaviors, activities and attributes that a society considers appropriate for men and women.

Hardware: Physical infrastructure such as a well, hand pump or latrine.

Hygiene: A set of behaviors associated with domestic water storage and use, and sanitation practices. Good hygiene is the practice of keeping oneself and one's living and working areas clean in order to help prevent illness and disease.

Hygienic environment: An environment that is clean and not likely to cause water- and excreta-related disease.

Improved sanitation: Flush or pour-flush latrine connected to sewerage, a septic tank or a covered pit, a pit latrine with a slab or a Ventilated Improved Pit (VIP) latrine.

Improved water supply: Water from a source that is more likely to provide "safe" water, such as a household connection or borehole.⁷³ Technical options are given in Table 6 in Section 8.

⁷³ Current information is insufficient to establish a relationship between access to safe water and access to an improved source. The two terms should not be confused or used interchangeably.

Maintenance: The activities required to sustain a water supply in proper working condition.

- ◆ Maintenance can be divided into:
 - Preventive maintenance – regular inspection and servicing to preserve assets and minimize breakdowns
- ◆ Corrective maintenance – minor repairs and replacement of broken and worn out parts
- ◆ Crisis maintenance – unplanned responses to emergency breakdowns and user complaints

Management information systems (monitoring): Checking, collecting and analyzing information to improve performance and results. In essence, it means comparing the actual situation with the expected (or planned) situation — and then taking action to bring reality and expectations together.

Microfinance: Financial services such as loans and deposits to poor and low-income households, and to micro-enterprises.

NGOs: Non-governmental organizations, specifically non-profit making organizations, including international NGOs (INGO) and national and local NGOs.

Operation: The everyday running and handling of a water supply, involving several activities:

- ◆ Major operations required to convey safe drinking water to the people, for example starting and stopping a motorized pump, supplying fuel and controlling valves;
- ◆ The correct handling of facilities to ensure a long component life, for example, how a rope and bucket is handled at a well, hand pump use and the use of taps at a standpost.

Ownership of system or service: Control over decision making and management of the system or services provided.

Recurrent cost: A cost that needs to be paid periodically to keep a system or installation functioning satisfactorily.

Roles: The principal responsibilities of the sector's key stakeholders.

Rules: A set of transparent guidelines, policies and laws that regulate actions leading to sector objectives, and guide stakeholders in their respective roles.

Rural communities: Settlements located outside gazetted municipal areas.

Safe drinking water source: A source that consistently provides water of a quality that meets Cambodian drinking water quality standards or other appropriate interim values.

Sanitation: Management and disposal of human urine, excreta and domestic waste water.

Septage: The combination of scum, sludge and liquid that accumulates in septic tanks.

Social marketing of sanitation: Marketing techniques to serve social objectives. Marketing consists of activities to reach customers and persuade them to buy and use a product or service.

It has four components: product, price, place and promotion, which may be modified for social marketing.

Software: The set of activities related to improving water supply and sanitation which do not include building or using infrastructure, and which do include the enabling environment and its systems and procedures, hygiene and sanitation promotion (including CLTS and social marketing), training, community mobilization and capacity building.

Stakeholder: A party with a direct interest in a specific sector activity or intervention.

Subsidy: Financial assistance paid to an individual, business or economic sector to achieve certain policy objectives. For example, a subsidy can be used to support businesses that might otherwise fail, or to encourage activities that would otherwise not take place.

Sustainable services: Services that have all the financial and human resources required for operation, maintenance and replacement, and take into account the technical, social, institutional and environmental aspects, so that they are continuously providing the accepted basic level of service.

Vision: The 25-year RWSS sector goal as stated in the National RWSS Policy (see Section 5.1).

Vulnerable groups: A general term to categorize people including the poor, the disabled, people affected by war and conflict, children and youth, the elderly, women and ethnic minorities. People may fall into more than one of these groups. Vulnerability is relative, depending on exposure to risk (shocks and extent of poverty) and capacity to manage (resources, availability of safety nets).

Water environment: The hydrological system within which a community functions; it may be much larger than the community itself, for example a river basin.

Water resource: A body of water that is available to use, such as a lake, river, or aquifer. It may also include rainwater.

Water source: The point at which water can be abstracted, such as a spring or well. The source can also be a river or lake, depending on the context.

Water supply: Water used for domestic consumption – drinking, washing, bathing and home-based economic activities.

Appendix 2: Background to Principles

1.1. Sustainability

A key objective should be the sustainability of improved water supply, sanitation and hygiene behaviors. The simplest definition of sustainability is “continues to work over time”, in relation to all sanitation and water supply services, and hygiene practices. Once established, systems should provide a permanent service.

There is no single formula for sustainability of water supply, sanitation and adopting safe hygiene behavior. Sector stakeholders should consider a number of interrelated factors and issues that contribute to improved sustainability, or lack of it:

Environmental impact

- ◆ The water resources should not be over-exploited – abstraction by all users, not just domestic, should not exceed the natural recharge of the resource. Use of groundwater for irrigation can have a serious impact on the availability of the resource.
- ◆ The water resource should be protected from pollution, in particular from poor sanitation.

An enabling environment

- ◆ Appropriate legal provisions, regulations, education, information and other similar incentives.
- ◆ Strong institutions at the appropriate level – water agency and community structures with established legal status, clear responsibilities, adequate financial support, good organization and the representation of all users, including women and poorer households.

- ◆ Supportive attitudes – a commitment by the water agency and community to share responsibilities, establish clear ownership and contribute to the financial support of services.
- ◆ Political will and commitment – politicians should ensure that the principle of community-based management is promoted and encouraged. This includes the commitment of adequate resources to the sector for community support and training, operation and maintenance and for new construction.

Economic, social and health benefits

- ◆ A genuine appreciation of the advantages of safe water supplies and sanitation. These include economic and social benefits as well as improvements in health. Links with the sustainable livelihoods approach can support this.

Choice of appropriate service level and technologies

- ◆ Affordable and manageable service levels that can be upgraded later as the socio economic situation improves. Systems should not be too large to be run by users.
- ◆ Practical, affordable and acceptable technology – preference for standardized technologies and systems that are easy to operate and maintain, culturally acceptable and gender friendly.

Provision for effective O&M

- ◆ Expertise and skills – training agency staff and community members in O&M.
- ◆ Effective supply chains for parts, materials and equipment – items such as wearing parts must be easily available so that communities can keep systems functioning.
- ◆ Appropriate support systems to ensure that communities can carry out their responsibilities in managing the services.

Financial sustainability

- ◆ Capacity and willingness to pay, including sharing the capital cost of the systems.
- ◆ Establishing loan schemes and revolving funds for operation and maintenance.
- ◆ Identifying ways for users to generate income.
- ◆ Financial management skills, especially in a context where communities are being empowered with financial responsibilities. Encourage and promote community savings and accountability.

Management information systems

- ◆ Reliable information is vital to knowing if sustainability has been achieved and is continuing, or whether action needs to be taken to rectify failures.

1.2. Community-based management

The National Policy defines a number of roles and responsibilities for communities and Water and Sanitation User Groups. These can be referred to as community management. The policy emphasizes the community's own decision-making power over components for which they are responsible. Key aspects in community management are⁷⁴:

Participation: All members of the community must have equal opportunity to participate in planning and decision-making related to the type and level of RWSS services they receive and the way in which those services are financed, implemented, managed and monitored⁷⁵. There must be broad community support for community management. Community participation must continue indefinitely.

⁷⁴ Partly based on (Lockwood, 2004)

⁷⁵ from Guiding Principle 4 in the National RWSS Policy

Responsibility: The community assumes the ownership and obligations of the systems. Although formal legal ownership of physical infrastructure is highly desirable, it may not always be possible within currently existing legal frameworks. The perception of ownership by the community is equally important.

Authority: The community has the legitimate right to make decisions on behalf of the users.

Control: The community is able to carry out and determine the outcome of its decisions. It must have direct or indirect control over the operation and management of its own water supply system, where control is understood to mean the ability to make strategic decisions about the process, from the design phase to long-term O&M.

Accountability: The community accepts the consequences of its decisions and understands that action rests with it.

The community must decide on the type of technology, service level, social organization, usage regulations and financial mechanisms. The community is responsible for maintenance, repair and financing.

1.3. Demand-responsive approach

The demand-responsive approach is a foundation for community management. The community initiates the process of developing services by requesting support from the relevant authority or service provider. It then makes informed choices about service options, based on its willingness to pay for the service and accept responsibility for subsequent operation and maintenance. Key principles include⁷⁶:

- ◆ Informed choices by communities, having participated in planning and implementation.
- ◆ Community responsible for operation and maintenance.
- ◆ Capital cost sharing and 100% of O&M costs borne by the community.
- ◆ Promoting more options for service delivery.

To be demand responsive, the authority or service provider must give all consumers:

- ◆ Information about technology, the services provided, the capital and running costs and how it will be maintained.
- ◆ Choices (as many as possible) about the service: kind of technology, location, contractor, makeup of the water point committee and how funds are collected.
- ◆ Opportunities to make decisions on all choices.
- ◆ Opportunities to influence or control the establishment and management process: approving the construction, approving payments to the contractor, among others.⁷⁷

The DORD will need to provide information through commune councils on opportunities for developing services as a basis for the demand-responsive approach.

1.4. Cost sharing

In the National Policy, communities are required to “Contribute to the implementation and construction of water supply and sanitation facilities, including financing, labor, materials and other forms of contribution”.

⁷⁶ WSP East Africa

⁷⁷ Adapted from Strategy Guidance Note, PCB Project Cambodia, WSP-SEA, 2001

Cost-sharing involves communities paying for services and creates a sense of ownership, thereby encouraging effective maintenance of the facilities. The people who use the water supplies are the only viable source of funding for regular maintenance. Users will only pay for a service if it is reliable and meets their needs, so there should be greater involvement of communities in determining:

- ◆ The level and type of service they want
- ◆ Services they can afford
- ◆ Services they can manage in terms of operation and maintenance

Community contributions for the capital cost of the infrastructure should be set by local authorities, according to local economic conditions, and based on the cost-sharing guideline developed by MRD. Contributions can be made in cash or in-kind, usually in the form of labor and local materials. This can also include the unpaid time of the WSUG. Developing the procedure and criteria for assessing the proportion of community contribution is an action under the strategy. Where communities are capable of meeting costs through 100% contributions, this should be encouraged and promoted.

Communities should pay 100% of recurrent operation and maintenance costs. The in-kind payment could be agricultural or other products that can be converted into cash. Communities should also pay a contribution to the Maintenance Support Service, to be established at each DORD. This amount will be set by the same procedure as the capital costs.

1.5. Sanitation financing

A 2007 study in Cambodia found that subsidy mechanisms were not working well. At that time, most sanitation projects offered hardware subsidies to a limited number of households within their target villages. Despite sector policies on poverty targeting, the hardware subsidies were often captured by non-poor households that were better able to meet requirements for cash contributions, or had more influence on those allocating the latrines.⁷⁸

A more recent study in Cambodia found that public finance for sanitation is not reaching those below the poverty line. In one project, 90% of the public finance went to non-poor households, and two sanitation marketing projects required households to contribute at least USD 30 buy a latrine. Data on willingness to pay indicates that USD 10 is the maximum amount most poor households are willing to spend on a latrine.⁷⁹

This evidence from Cambodia supports the main arguments against the use of subsidies, based on international experience. The arguments relate to the problems caused by poor design or lack of thought about how subsidies have been applied, including⁸⁰:

Many subsidized latrines are unnecessarily expensive due to the high standards set by the program;

- ◆ Subsidies may distort other sources of funding, such as households themselves, who prefer to wait for a free latrine rather than paying for their own;
- ◆ As a consequence, subsidy programs may not be financially sound and there is not enough money to pay for all the coverage;
- ◆ Subsidies may stifle innovation due to centralized management and specification of the types of latrines that can be built;

⁷⁸ (Robinson, 2007)

⁷⁹ (Robinson, 2010)

⁸⁰ Summarised from (Evans, Voorden, & Peal, 2009)

- ◆ Poor targeting means subsidies are captured by wealthier households and communities, instead of reaching the poorest people;
- ◆ Dependency, so people wait for a subsidized latrine rather than building one themselves;
- ◆ False demand, when households take a subsidized latrine or service because it is available, when they do not really want it.

It is important to understand the components of sanitation to determine where and how to provide subsidies. The total cost of sanitation comprises⁸¹ software costs:

- ◆ Supporting and developing an enabling environment;
- ◆ Hygiene behavior change activities;
- ◆ Sanitation marketing costs, such as market assessments, promoting demand, costs of community-led total sanitation activities and interventions to stimulate the supply of appropriate goods and services (training or financial support to private providers);

And hardware costs:

- ◆ Cost of public infrastructure and services (capital and operational costs) for example schools, public latrines;
- ◆ Cost of private infrastructure and services (capital and operational costs) of household sanitation.

All these activities need to be funded, either with public money (from government, development partners, NGOs) or with private money (households, private sector investment, including microfinance).

Most of the benefits of sanitation reach beyond the immediate household making the investment. This ‘external’ effect of sanitation – its impact on the lives of those not directly provided with a latrine – is one of the principle justifications for public investment in sanitation. It suggests that households undervalue sanitation compared to its value to society at large.⁸²

It is clear that developing sanitation at the household level in rural Cambodia must be subsidized. The focus of subsidies will be on the software costs outlined in the list of components above, with some limited subsidy to enable the poorest families to buy appropriate latrines, using alternative mechanisms, and avoiding the problems outlined above.

1.6. Integration/stand-alone of water supply, sanitation and hygiene promotion

Water supply, sanitation and hygiene behavior are clearly related in terms of health and disease. Water supply is generally a community service but the benefit (and detrimental impact of poor water supply) is felt individually or at household level. In contrast, sanitation is for individual households, with individual benefits, but has detrimental environmental health impacts across the community where there are unsafe toilets or open defecation. There is a natural demand for improved water supply, but demand for sanitation and hygiene behavior change has to be created.

1.7. Operation and maintenance

As specified in the national policy, communities are responsible for operating and maintaining the water supply service, through a representative Water and Sanitation User Group (WSUG). Individual households are responsible for operating and maintaining household latrines and institutions are responsible for their latrines.

⁸¹ Adapted from (Evans et al., 2009)

⁸² (Trémolet & Evans, 2010)

It is increasingly recognized that the majority of communities will be unable to manage their own water supply systems without some form of external help. Even with approaches that focus on increasing their capacity to manage the system, it is simply not realistic to expect rural communities

to be completely self-sufficient, especially in the first years after building the systems. This growing recognition of the limits to community management comes from field-based experience of a wide variety of practitioners and organizations around the world.⁸³ Therefore, to help communities meet their O&M responsibilities, the government and other support agencies will provide a support system.

1.8. Decentralization and deconcentration reforms

The Strategic Framework for Decentralization and Deconcentration Reforms (2005) sets some basic principles for D&D. The RWSSH sector and this strategy should conform to these principles in their organizational arrangements.

The Strategic Framework for D&D set two strategic goals for reforming the management systems of provincial/municipal, district/khan and commune/ sangkat administrations:

- ◆ To strengthen and expand local democracy
- ◆ To promote local development and reduce poverty

The reforms are based on the following important principles⁸⁴:

- ◆ **Democratic representation:** The reforms will strengthen the roles of councils at provincial/municipal, district/khan and commune/sangkat levels and be established according to the principles of democracy, by expanding their powers, duties, responsibilities and resources.
- ◆ **Participation of the people:** The reform will introduce systems and procedures to ensure that people, especially women, vulnerable groups and indigenous minorities can participate in decision-making at provincial/municipal, district/khan and commune/sangkat levels.
- ◆ **Public sector accountability:** Reform will strengthen accountability at all levels and administrative and financial affairs will be transparent.
- ◆ **Effectiveness:** Reform will bring public services closer to communities by allowing people to participate in planning and monitoring public services. The reform will also improve administration and coordination and strengthen the provinces/municipalities, districts/khans and communes/sangkats' capacity to manage. This will promote better quality services and expand the delivery of public services.
- ◆ **Focusing on poverty reduction:** The reform will strengthen the capacity of local people to use resources in helping to reduce poverty. It will be useful especially for vulnerable groups, indigenous minorities and women and children.

Domestic water supply is a local service for communities. Sanitation, which benefits whole communities, based on individual households having and using latrines, should be promoted and coordinated at a local level.

It is not feasible or affordable for every commune council to employ specialist technical staff for water supply and sanitation. There is a limited number of people with the relevant knowledge, experience and aptitude for work in the RWSSH sector at the moment. In future, it is unlikely there will be many young people joining the jobs market who will be interested in working in the

⁸³ (Rosensweig F., 2000; Lockwood H., 2002; Schouten and Moriarty, 2003). In (Lockwood, 2004). See also IRC, June 2002, background paper for "Beyond the Community", e-conference on scaling up community management of rural water supply, <http://www.irc.nl/manage/debate/econf.html>

⁸⁴ From (RGC, 2005)

sector. Given the limited availability of human and financial resources, and the D&D principles, the district level is the appropriate, natural level for delivering RWSSH services.

1.9. Accountability

All organizations must be accountable, not just financially, but for social, technical and environmental aspects and the impacts of service provision. Accountability is a major subject in its own right, so only the special aspects of water supply and sanitation projects and their technology is considered. Organizations have multiple accountabilities – downwards to beneficiaries, electorates, staff and supporters, and upwards to donors or host governments⁸⁵.

It is useful to distinguish between short-term functional accountability for resources, resource use and immediate impacts, and strategic accountability for impacts that an organization's actions have on other organizations and the wider environment⁸⁶. Table 11 shows how water supply and sanitation projects and programs, with their technologies, fit into both categories, with the accountability upwards and downwards⁸⁷.

Table 11: Accountability in the RWSS Sector

Accountability	Functional (resources, resource use, immediate impacts)	Strategic (impacts on other organizations and the wider environment)
Upwards (donors, higher levels of government)	◆ Population covered ◆ Cost per capita ◆ Finance and budget ◆ Staffing ◆ Procedures ◆ Use of nationally manufactured materials and equipment ◆ Cost recovery	◆ Consistency with national policies ◆ Influence on national policies ◆ Co-ordination, collaboration ◆ Support structures and mechanisms ◆ Subsidies ◆ Cost sharing ◆ Gender ◆ Standardization ◆ Development of new technologies ◆ Monitoring and evaluation ◆ Professional

⁸⁵ Adapted from Edwards M. and Hulme D., 1995, NGO Performance and Accountability: Introduction and Overview, in Non-Governmental Organizations – Performance and Accountability, ed. Edwards M. and Hulme D., Earthscan Publications Ltd., London.

⁸⁶ Avina J., 1993, The evolutionary life cycle of non-governmental development organizations, in Public Administration and Development, Vol.13, No.5 (December), quoted in Edwards and Hulme (1995)

⁸⁷ Adapted from Ockelford, J., 1996. Technical and Management Issues. In: Smout I. (Editor), Water and NGOs: Proceedings of an ODA Workshop. Loughborough University, Loughborough, UK

Downwards (beneficiaries, the electorate, staff, lower levels of government)	◆ Needs assessment ◆ Community involved in decision-making ◆ Choice of technology ◆ Local resources/materials ◆ Existing practices ◆ Gender ◆ Affordability ◆ Suitability for VLOM ◆ Availability of replacement parts ◆ Training	◆ Environmental impact ◆ Gender ◆ Health ◆ Monitoring and evaluation ◆ Professional
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In Cambodia, the term “accountability” mainly equates to accounting practices (such as a transparent use of public funds)⁸⁸. Developing accountability within Cambodian governance should be based on the following:⁸⁹

- ◆ Accountability is a personal, administrative and political value found in all systems of government, formal and informal, political and administrative.
- ◆ It involves not just a relationship between two actors, in which one holds the other responsible for what he/she does, but also mechanisms, rules and resources.
- ◆ An accountable governance system needs to be Cambodia-owned and must reflect Cambodian values. It needs to build trust and protect public interest, in particular, the interests of the poor.
- ◆ It requires support from higher up, public participation and political responsiveness, administrative neutrality and responsibility, as well as the right mix of discretion and obligation.
- ◆ A better, more accountable system will provide clear roles and responsibilities, adequate and predictable resources, horizontal and vertical coordination, transparency, law enforcement and incentives.

1.10. Mainstreaming gender

In Neary Rattanak III, a Five Year Strategic Plan 2009–2013 for Gender Equality and the Empowerment of Women in Cambodia, the Ministry of Women’s Affairs states that harmonizing gender mainstreaming plans with sector strategies and monitoring mechanisms, and mobilizing adequate resources for effective implementation, remains a challenge.

The United Nations-Economic and Social Security Council defines the term ‘gender mainstreaming’ as the process of assessing the “implications for women and men, of any planned action, including legislation, policies or programs in all areas and at all levels. It is a strategy for making women and men's concerns an integral dimension of the design, implementation, monitoring, and evaluation of policies and programs in all political, economic and societal spheres so that women and men benefit equally, and inequality is not perpetuated”⁹⁰.

⁸⁸ (Eng & Craig, 2009)

⁸⁹ (Eng & Craig, 2009)

⁹⁰ United Nations–Economic and Social Security Council 1997, quoted in WSP-ESA, 2000

Mainstreaming gender means recognizing the different roles, needs and contributions of women and men⁹¹:

- ◆ Will women benefit as well as men?
- ◆ Have women and men been consulted about the issues, such as the location of facilities, technological choices product features and institutional arrangements, and have their responses informed the design of the project?
- ◆ Is hygiene promotion directed towards those most often responsible for it, that is adult women, and are informal networks of women and men being used to develop health education messages?
- ◆ Are the multiple demands on women's time, and the opportunity costs they face, recognized when including women in consultation and participation?
- ◆ Have women's and men's different responsibilities for household budgeting been taken into account in assessing willingness and ability to pay?

1.11. Mainstreaming disability

Mainstreaming disability means assessing the implications for disabled people of any planned action, including legislation, policies or programs, in any area, at all levels. By making the concerns and experiences of disabled people an integral part of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres, the ultimate goal of equality of opportunity for disabled people can be achieved.⁹²

There are different types of approaches for addressing disability issues:

- ◆ Disability-focused projects, which provide services that focus on people with disabilities;
- ◆ Mainstreaming disability covers considering the needs and rights of people with disabilities across all sectors;
- ◆ A twin-track approach combines the first two approaches of disability-focused projects and mainstreaming disability.

It is essential to include and represent disabled people's organizations (DPO) and people with all kinds of disabilities in any consultation process, committee or advisory board. DPOs mostly represent a certain group of people with a particular impairment (eg: blind, war injuries), while other groups might be overlooked. Where possible, representatives of women with disabilities should be involved to incorporate gender mainstreaming.

It is important to bear in mind that people with disabilities not only have different impairments that require different types of attention, but that there are also differences between the special needs of men and women, children and the elderly, people from urban or rural backgrounds or different cultural, religious or traditional backgrounds. It is vital that people with disabilities or DPOs work closely with service developers and providers.

Appendix 3: Guidance to support actions

Sanitation financing mechanisms

At the national level, approaches to funding for the software and hardware of household sanitation need to consider a number of factors. All development organizations should consider these factors when designing and implementing interventions. They are adapted from a number of reference documents⁹³.

⁹¹ WELL/DFID, 1998

⁹² (WSP, 2010)

⁹³ Including (Evans et al., 2009; Mehta, 2003; Robinson, 2010),

General factors

- ◆ Subsidies should achieve the intended outcome: this requires not only smart subsidy design but clarity up front about what the policy objectives are. Choices and trade-offs need to be made between different interest groups, the wealthy and the poor, rural and urban populations and short- and long-term objectives.
- ◆ Costs include both upfront capital costs and long-term operational and maintenance costs, even in rural areas. (For example, the set-up and operating costs of emptying pits and septic tanks, and disposal services).
- ◆ To avoid distorting existing arrangements that might be working very well, the design of public financing needs to consider the different types of service provider and not assume that all provision is taking place in the public sector.
- ◆ Proper monitoring and evaluation is an essential element of transparency and must be fully financed as part of the subsidy.

Software of sanitation

Supporting and developing an enabling environment: Hygiene behavior-change activities, sanitation marketing costs

Software components should be delivered in ways which do not skew demand or influence the supply of sanitation goods and services in inappropriate ways, and do not suppress the willingness of households to invest their own resources in sanitation.

Hardware of sanitation

Cost of private infrastructure and services

- ◆ Many explicit subsidies are not linked to any clear idea or level of coverage. This often results in high levels of subsidies to a limited population, and failure to achieve significant coverage. Designing a subsidy scheme needs to be done in relation to the total, targeted beneficiary population, so that scaling up the service can achieve significant coverage over a defined period. Effective coverage and scalability are also linked to targeting, as minimizing leakage reduces the cost of subsidies and extends coverage with a given level of resources.
- ◆ The genuine need for subsidies should be assessed. Such an assessment should include the prevailing income levels among the target group and levels of vulnerability such as orphans, the elderly, single women with children, people living with disabilities, and people living with chronic diseases.
- ◆ It is essential to make the link to social protection and the targeting mechanisms that exist already, such as the Procedures for Identification of Poor Households of the Ministry of Planning with the provincial databases⁹⁴. These can be used along with additional village or household mapping to ensure pro-poor targeting.
- ◆ Subsidies should reach the intended target groups: this requires clarity about which are the intended target groups and how they can best be reached. Leakage can occur through including non-poor households and excluding poor households. It also requires rigorous monitoring to track how subsidies are reaching the intended groups.
- ◆ Better targeting measures generally require higher administrative costs, and suggest a trade-off with reduced subsidy costs.
- ◆ Subsidies should be implemented in a clear and transparent manner. As they involve large sums of public money, subsidy programs need to be clear and transparent, allowing eligible households or communities to access them and providing clear recourse mechanisms when there is a suggestion of impropriety.

⁹⁴ (Ministry of Planning, 2008), commonly known as the “ID Poor Project”

Maintenance support system

International experience has shown that training water user groups and providing support for one or two years within a project structure, while the water facility is still new and unlikely to break down, is not enough to achieve long-term sustainability of both the physical infrastructure and the management by the group. It is essential to support community-level management to make water supply systems sustainable. Support does not mean taking over management functions at the community level, but it does mean providing technical and management advice and training to enable communities to manage their own activities. It is important to monitor whether communities are successfully managing their systems, and to take action in cases where there are problems.⁹⁵

A Maintenance Support System will be operated under the authority of each DORD through the commune councils. The main functions of this institutional support system are⁹⁶:

- ◆ Technical assistance: providing advice and guidance to support the WSUGs, as well as providing independent advice in cases where some form of arbitration may be necessary.
- ◆ Training: on-going training of WSUG members in a variety of areas, from physical operating and maintenance to bookkeeping, hygiene promotion or capacity building.
- ◆ Monitoring and collecting information: regular performance monitoring and feedback.
- ◆ Coordination and facilitation: helping establish links between community management structures and external entities, either from the state or private sector.
- ◆ Ensuring the availability of replacement parts for hand pumps in the local markets.

One of the most important factors in establishing a successful Operation and Maintenance (O&M) support system is political will. As long as the emphasis is on achieving new coverage, the focus will be on finance. The failure of so many water supply schemes in the past should be a major concern at the national level. Unfortunately, the emphasis is on rehabilitating or replacing infrastructure, rather than keeping systems running successfully. A lot of effort will need to be put in to generating political understanding of the issues. One indicator of success in this will be adequate annual funding in national budgets to the recurrent costs of the O&M support systems.

Water quality surveillance system

The responsibility for rural water supply, adapted from the list given in Drinking Water Quality Standards 2004, is given in Table 12.

⁹⁵ From the draft 10 Year Sector Strategy in 2001–2010, (MRD, 2001)

⁹⁶ Source: Lockwood 2002:22; EHP <http://www.ehproject.org> (Lockwood, 2004)

Table 12: Responsibilities for water quality surveillance

Responsibility	Assignment and delegation
Implement the drinking water quality surveillance program according to the national guidelines	Overall responsibility: MRD DRWS Delegated responsibility for each province to PDRD
Implement and maintain a drinking water quality surveillance program	PDRD in each province
Analyze the information presented by the water service	PDRD in each province
Have the proper laboratory facilities to develop surveillance activities	DORD DIME in each province
Systematically assess the human health risk by monitoring the water source, the physical characteristics of the water systems (sanitary inspections), the history of drinking water quality and trends	DORD
Audit the drinking water quality control programs	MRD
Inform the public about drinking water quality and associated risks	DORD and commune councils
Maintain records on drinking water quality characteristics	DORD, reporting to PDRD
Maintain open resources for the public to express complaints and concerns	DORD
Inform the water service of anomalies detected in the water system and demand corrective action	DORD, reporting to PDRD
Approve the sampling programs as presented by the water service	DORD, reporting to PDRD
Prepare annual Water Safety Plans	Commune councils under guidance from the DORD
Action to remedy any hazards or faults	DORD

The primary water quality testing will be carried out by DORD. Each DORD will be equipped with a portable field test kit for on-site micro-biological testing, simple testing of other physical parameters and photometers to test the chemical parameters of water quality. This primary testing will be supported by taking water samples to provincial laboratories operated by MIME.

Development of supply chains

This guidance is adapted from Oyo, A. (2002). *Creating Successful Private Sector Supply Chains: A resource guide for rural water supply and sanitation practitioners*, published by WSP. See the publication for more detailed information on creating supply chains.

Figure 6 shows the core functions and some associated activities necessary for the chain to operate effectively. Table 13 shows the actions needed to establish and sustain supply chains for water supply and sanitation products.

Figure 7 : Supply chain

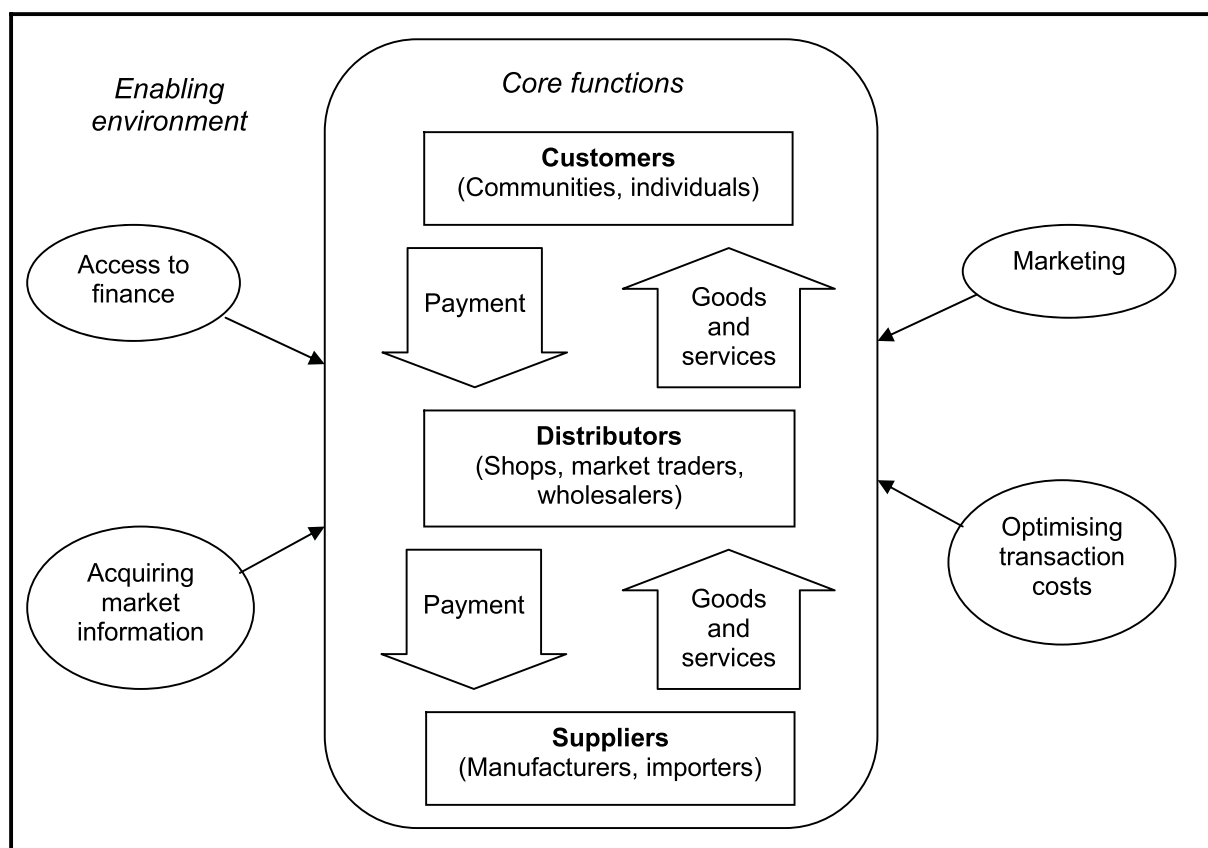


Table 13: Actions for developing and sustaining supply chains

What	How	For MRD and line ministries specifically	For donors and NGOs specifically
Encourage SME creation and development			
Understand the nature of demand	Engage in discussions with SME professionals in other sectors	Consider appointing a business development specialist to coordinate and manage all SME areas while the project develops. The specialist will coordinate between development agencies and the private sector, develop and implement supply chain strategies and provide water sector development teams with the business development skills they need to engage the private sector in projects Help donors and NGOs conduct market assessments to determine the dynamics of the general business environment and the potential demand in the water sector.	Fund and conduct market assessments, coordinating with other development agencies, government and SME experts, to determine the dynamics of the general business environment and the potential demand in the water sector.
Develop a coordinated donor approach to projects to maximize market potential and demand in a location	Develop mechanisms where donors can coordinate their approach to providing infrastructure in association with governments		
Choose the right technology for the project	Using the coordinated approach, conduct a technology assessment to ensure the technology is appropriate for the market, satisfying customer demand. This will bring together technical expertise, market development experience and knowledge of end-user capacity and trends with a long-term perspective of sustainability		

What	How	For MRD and line ministries specifically	For donors and NGOs specifically
Encourage SME development through incentives	Determine the profit levels of existing SMEs, through SME surveys. Inform SMEs of the potential for profit within the water sector (use findings from completed market assessments to do this). Encourage people to buy equipment at local markets, at local market rates. Encourage customers to stimulate private sector development by making their product demands known to SMEs. Make sure they know how and to whom to make their concerns known.		Avoid activities that distort markets and act as disincentives to the private sector, such as providing free equipment or ordering centrally in block, paying large percentages in advance.
Improve access to information for customers and stakeholders of supply chains	Agencies and government work together to package information on consumer demand, so that business opportunities can be presented. Simplify the supply chain to make consumer demand and market dynamics more visible. Optimize the location of stakeholders - the closer they are to each other, the easier it is for them to communicate.	Make sure customers know where to get spare parts, new equipment or repairs, and periodically check this is still the case.	Consider creating business development services (BDS) to act as a third party in the supply chain, providing a central hub of information to be passed among partners.
Create and sustain supply chains			
Improve SMEs' access to finance by helping develop the formal finance sector	Determine the demand for finance and any constraints to accessing it. Determine the financial products that best meet SME demand and encourage financial institutions to increase their range of products. Build financial institutions' confidence in the water sector using the findings from the completed market assessment. Build capacity in the finance sector by training people in risk assessment.		

What	How	For MRD and line ministries specifically	For donors and NGOs specifically
Invest in infrastructure	Invest in infrastructure as part of wider programs to help develop private sector supply chains within rural water projects.		
Develop policies to support long-term market development		Develop policies that support long-term market development, rather than just short-term tax revenue gains.	
Develop the supply chain management function	Encourage the private sector to provide the resources needed for effective supply chain management within their organizations. Identify the potential for SMEs to provide the supply chain management role on a commercial basis.		Train project staff to provide these supply chain management skills during project implementation and develop mechanisms that will still be in place beyond the project.
Develop markets for business development services	Assess the existing and potential demand for business development support in all sectors (agriculture, transport, energy) to exploit economies of scale and maximize experience. When developing this support ensure clear exit strategies are in place for external assistance.		

Capacity required for the District Office of Rural Development

The 2008 census shows there are 24 provinces, 185 districts, 1,621 communes and 14,073 villages in Cambodia. The number of villages per commune varies from 3 to 30, with an average of 8.7. The average number of communes per district is 8.8.

There are three main tasks under the operational support function to be provided at the district level:

- ◆ Support and capacity development to the WSUG (mentoring for management, finance and maintenance, conflict resolution)
- ◆ Water quality surveillance
- ◆ Data collection for the management information system

Each village should be visited at least quarterly, so if one support officer is able to visit one village per day, with approximately 150 field days and 50 office days per year, each support officer would have a case load of 37 villages. Therefore, at least 380 support officers are needed to cover the 14,073 villages. This is equivalent to two officers per district. For mutual support and teamwork, there should be a minimum of two per district, with three per district in more populated districts. In total, approximately 450 support officers will be required to support the long-term service delivery managed by the WSUGs.

If this service is contracted out to the private sector, private sector companies would need to employ a similar number of field staff plus management, with at least one officer employed by the district for monitoring and supervision.

For hygiene promotion, a similar number of specialist district staff will be needed. Again, if this is contracted out to a private specialist company, each district will need to employ one officer for monitoring and supervision.

In the short to medium term, each district will need to employ at least one technical officer to provide technical advice to commune councils and WSUGs for the construction and quality control of new infrastructure.

Staffing needs are summarized in Table 14, showing the alternative options of running the services in-house or contracting out to a private company. A detailed capacity assessment, as part of a comprehensive capacity development plan, will be needed to determine whether their experience and skills are adequate, and any additional training that will be required.

Table 14: District staffing requirements

	In house	Contracted out	
	District staffing	District staffing	PS staffing
Operational support	450	185	450
Hygiene promotion	450	185	450
TA for new construction	185	185	
Total	1085	555	900

Management information system

Monitoring refers to collecting, organizing and using information about an actual situation and comparing it to the planned or expected situation. The essential question is: Does this collection, analysis and use of information make sense? Is it useful? Can it be acted upon to improve the situation? The term “monitoring” is generally translated into Khmer to mean “control”. This gives the wrong impression, so the term “management information system (MIS)” is used instead.

The information can be used and acted on: for checking and control; for problem solving and planning; as tools for management by community members and for staff and program managers. The information should be acted on at the most local level possible with the possibility of referring to higher management levels as needed. Different stakeholders at the various levels will have particular responsibilities and tasks in running the information system and will have particular uses for the information. A framework of indicative responsibilities and uses is shown in Table 15: Management Information System.

The information to be collected will be considered under two headings: efficiency and effectiveness. Efficiency concerns reaching targets at the lowest cost in the shortest time, and therefore deals with outputs such as:

- ◆ The number of wells constructed in one year;
- ◆ The cost of construction and amount of money spent;
- ◆ The number of people trained;
- ◆ The number of WSUGs formed during the year.

Effectiveness is the use and performance of the outputs to achieve results and objectives. It focuses on issues such as:

- ◆ Do the facilities or services continue to function?
- ◆ Use of the facilities as planned;
- ◆ Changes in hygiene behavior;
- ◆ Use of new skills by staff who have been trained;
- ◆ Benefits such as a reduced workload for women as a result of the new water and sanitation facilities;
- ◆ Functioning of WSUGs.

MRD will develop the MIS in consultation with all stakeholders, using the book Action Monitoring for Efficiency (Parts I and II), by K. Shordt (2000), published by IRC International Water and Sanitation Centre. As far as possible, the MIS should be participatory and include poor and vulnerable groups.

Table 15: Management information system

Level and organization	Responsibilities and tasks	Use of information
Central		
MRD	◆ Overall management of the MIS ◆ Maintain the database ◆ Consolidate information from provinces and stakeholders ◆ Gather information on human resources and HR needs in the sector	◆ National planning for RWSSH needs ◆ Project preparation and targeting with development partners ◆ Planning for HR capacity needs
NGOs	◆ Submit activity and achievement reports	◆ Project preparation and targeting
Provincial		
PDRD	◆ Consolidate district information ◆ Submit information to MRD	◆ Plan and target new infrastructure ◆ Ensure functionality and use of services
Drilling companies	◆ Prepare well logs ◆ Submit drilling records	◆ Groundwater data for drilling
District		
District Office of Rural Development	◆ Collect information from WSUGs and communities ◆ Submit information to PDRD ◆ Report to district council	◆ Action to ensure functionality and use of services
Community		
WSUG	◆ Collect information on the use and functionality of water and sanitation facilities and services	◆ Immediate action to solve functionality problems

Research, development and innovation

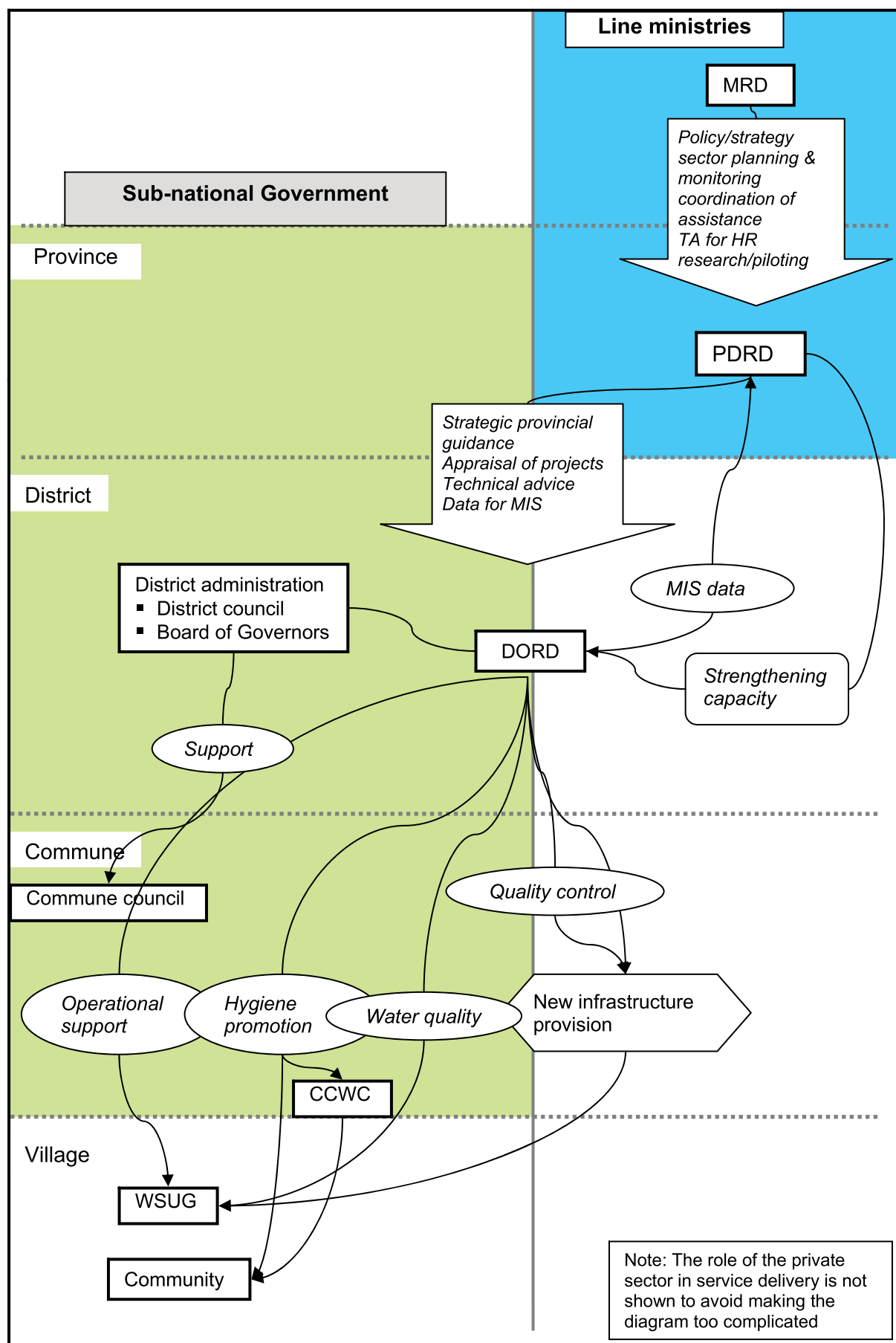
The committee for overseeing research, development and innovation will be made up of core members of the MRD itself and representatives from development partners, with additional specialists co-opted as necessary to conduct particular research.

The procedure will include:

- ◆ Application from the researcher in the form of a concept note;
- ◆ Consideration, and approval to proceed, from the committee, based on defined criteria, including whether the application addresses gender, poverty and social exclusion;
- ◆ Rigorous testing of the technology or approach as jointly agreed between the committee and the researcher;
- ◆ Regular progress reports, including testing data, to the committee from the researcher with regular steering meetings;
- ◆ Final approval from the committee to allow the technology or approach to be applied on a wider scale in Cambodia;
- ◆ Dissemination of the technology or approach by the researcher.

As part of innovative technology, the approaches that will be subject to this process will include new methods for sanitation, hygiene promotion and financing, including the application of subsidies.

Appendix 4: Organizational arrangements



Appendix 5: Roles in Service Delivery and Enabling Environment

Service delivery matrix

Commission
Provision
Manage/coordinate
Regulate
Monitor
Technical advice
User

Roles:

Lead	Secondary
------	-----------

Phases	Components of service	Development and planning		Provision of infrastructure including software			Operation			Hygiene promotion
		Demand creation	Mobilize resources	Distribution and sale of WASH products	Water supply	Sanitation	Operation	Maintenance/repair of water supply system	Support system for community O&M	
Level	Organization									
Central	Government ministries									
	Rural Development	Commission	Manage/coordinate		Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
	Economics & Finance		Provision							
	Interior									
	Health									
	Planning									

Phases	Components of service	Development and planning		Provision of infrastructure including software			Operation			Hygiene promotion
		Demand creation	Mobilize resources	Distribution and sale of WASH products	Water supply	Sanitation	Operation	Maintenance/repair of water supply system	Support system for community O&M	
	MOWA									
	Education Youth & Sport									
	Environment									
	Social Affairs									
	MOWRAM									
	Development partners		Provision	Technical advice	Technical advice	Technical advice			Technical advice	Technical advice
	Finance		Provision							
	NGOs		Provision	Technical advice	Technical advice	Technical advice				Technical advice
	Private sector									Provision
	Drilling companies				Provision					
	Commercial traders			Provision						
	Manufacturer			Provision	Provision	Provision				
	Specialist companies	Provision			Provision	Provision				Provision

Phases	Development and planning			Provision of infrastructure including software			Operation		Hygiene promotion
	Components of service	Demand creation	Mobilize resources	Distribution and sale of WASH products	Water supply	Sanitation	Operation	Maintenance/repair of water supply system	
	Consultants	Technical advice		Technical advice	Technical advice	Technical advice			Technical advice
	Academic/ training								
Provincial	Government								
	Provincial Council								
	PDRD	Commission			Monitor	Monitor	Monitor	Monitor	Monitor
	PLAU				Technical advice	Technical advice		Technical advice	
	Development partners		Provision	Technical advice	Regulate	Technical advice			Technical advice
	Finance/ micro-finance institutions		Provision						
	NGO	Provision							Provision
	Private sector								

Phases	Development and planning		Provision of infrastructure including software			Operation			Hygiene promotion
	Components of service	Demand creation	Mobilize resources	Distribution and sale of WASH products	Water supply	Sanitation	Operation	Maintenance/repair of water supply system	
	Market traders			Provision	Provision	Provision			
	Drilling companies				Provision				
	Manufacturers			Provision		Provision			
	Specialist companies	Provision			Provision	Provision		Provision	
	Training institutes								
District	Council	Commission		Regulate	Regulate	Regulate		Commission	
	Governor	Manage/coordinate		Regulate	Regulate	Regulate		Commission	
	NGO	Provision							Provision
	Private sector								
	Market traders								
	Local manufacturers			Provision	Provision	Provision			
	Specialist companies	Provision						Provision	Provision
Commune	Council								

Phases		Development and planning		Provision of infrastructure including software			Operation			Hygiene promotion
	Components of service	Demand creation	Mobilize resources	Distribution and sale of WASH products	Water supply	Sanitation	Operation	Maintenance/repair of water supply system	Support system for community O&M	Hygiene promotion
	Clerk and staff			Monitor	Monitor	Monitor	Monitor	Monitor		
	Private sector									
	Market traders			Provision	Provision	Provision				
	Local manufacturers									
	Village/ community-based artisan				Provision	Provision		Provision	Provision	
	Village/ community-based pump mechanic			Provision	Provision			Provision		
Community			Provision	User	Manage/coordinate	Manage/coordinate	Provision	Provision	User	User
Household			Provision	User	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
					User	User	Provision	Provision	User	User

Enabling environment matrix

Commission
Provision
Manage/coordinate
Regulate
Monitor
Technical advice
User

Roles:

Lead	Secondary
------	-----------

	Categories	Systems and procedures		HR capacity	Private sector capacity			Learning	
	Components of service	Legislation and policy	Guidelines and procedures	Training	Competitive environment	Business/technical skills	Investment and loans	Evaluation	Research, piloting and validation
Level	Organization								
Central	Government ministries								
	Rural development	Provision	Commission	Commission	Provision			Commission	Commission
		Regulate	Manage/Coordinate	Manage/Coordinate					
	Economics & Finance				Provision				
	Interior	Provision							
	Health								
	Planning								
	MOWA								
	Education Youth & Sport								
	Environment								
	Social Affairs								
	MOWRAM								

	Categories	Systems and procedures		HR capacity		Private sector capacity			Learning	
		Legislation and policy	Guidelines and procedures	Training	Competitive environment	Business/technical skills	Investment and loans	Evaluation	Research, piloting and validation	
	Development partners	Technical advice	Technical advice	Technical advice	Technical advice	Technical advice		Technical advice	Technical advice	
			Finance	Finance	Finance	Finance		Commission	Commission	Finance
	Finance institutions					Provision	Provision			
	NGOs		Technical advice	Provision		Provision	Provision		Provision	
	Private Sector									
	Drilling companies					User	User			
	Commercial traders					User	User			
	Manufacturer					User	user			
	Specialist companies			Provision		Provision		provision		
	Consultants			Provision				Provision	Provision	
	Academic/ training			Provision					Provision	
Provincial	Government									
	Provincial Council									
	PDRD		Provision	Commission		Manage/Coordinate		Commission	Manage/Coordinate	
	PLAU									
	Development partners		Technical advice	Technical advice	Technical advice	Technical advice	Technical advice	Commission	Commission	
	Finance/micro-finance institutions						Provision			

	Categories	Systems and procedures		HR capacity	Private sector capacity			Learning	
		Legislation and policy	Guidelines and procedures		Competitive environment	Business/technical skills	Investment and loans	Evaluation	Research, piloting and validation
	NGO					Provision	Provision	Commission	Commission
	Private sector								
	Market traders						User		
	Drilling companies				User	User	User		
	Manufacturers				User	User	User		
	Specialist companies					Provision			
	Training institutes			Provision		Provision			
District	Council	User	User	User					
	Governor	User	User	User					
	NGO		User	Provision					
	Private sector								
	Market traders				User	User	User		
	Local manufacturers				User	User	User		
	Specialist companies					Provision			
Commune	Council	User	User						
	Clerk and staff	User	User						
	Private sector								
	Market traders					User	User		
	Local manufacturers				User	User	User		

	Categories	Systems and procedures		HR capacity	Private sector capacity			Learning	
	Components of service	Legislation and policy	Guidelines and procedures	Training	Competitive environment	Business/technical skills	Investment and loans	Evaluation	Research, piloting and validation
	Village/commune-based artisan				User	User	User		
	Village/commune-based pump mechanic				User	User	User		
Community									
Household									

Appendix 6: References

- AISC. (2007). Arsenic Contamination of Groundwater in Cambodia: Strategic Action Plan 2010, Version 10: Arsenic Inter-ministerial Sub-Committee.
- AMK. (2009). Cambodia and the Microfinance Environment. Retrieved 17 March 2010, from <http://www.amkcambodia.com/Microfinance.aspx?Idtopnav==4>
- Bartram J, Corrales L, Davison A, Deere D, Drury D, Gordon B, et al. (2009). Water safety plan manual: step-by-step risk management for drinking-water suppliers. Geneva: World Health Organization.
- Bosch, C., Hommann, K., Rubio, G., Sadoff, C., & Travers, L. (2002). Water and Sanitation In J. Klugman (Ed.), A Sourcebook for Poverty Reduction Strategies, Volume 2: Macroeconomic and Sectoral Approaches Washington D.C.: The World Bank.
- Cap-Net, Global Water Partnership, & UNDP. (2005). Integrated Water Resources Management Plans: Training Manual and Operational Guide. from http://www.cap-net.org/TMUUploadedFiles/FileFor67/IWRM_Plan.doc
- Carrard, N., Pedi, D., Willetts, J., & Powell, B. (2009). Non-government organization engagement in the sanitation sector: opportunities to maximize benefits. Water Science and Technology.
- Carter, R. C. (2009). Editorial. Waterlines, Volume 28(No. 4).
- Council for Agricultural and Rural Development. (2010). National Social Protection Strategy for the Poor and Vulnerable (draft).
- Council of Ministers. (1999a). Sub-Decree on Solid Waste Management, No. 36 ANRK.BK. Cambodia: RGC.
- Council of Ministers. (1999b). Sub-Decree on Water Pollution Control, No. 27 ANRK.BK. Cambodia: RGC.
- COWI. (2010). Water and Sanitation Sector Financing Strategy for Cambodia: Final: WSP.
- Davis, J., & Brikke, F. (1995). Activation of Water Supply: Operation and Maintenance of Small Water Supply System, The Hague: Water and Sanitation International Centre for Water Supply, Sanitation and Hygiene.
- Devine, J. (2009). Introducing SaniFOAM: A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs: WSP.
- ECA. (2004a). Draft Law on Concessions (rev.2): Economic Consulting Associates Limited.
- ECA. (2004b). Draft PPI Policy Paper: Economic Consulting Associates Limited for RGC, World Bank, PPIAF.
- Eng, N., & Craig, D. (2009). Accountability and Human Resource Management in Decentralised Cambodia. Phnom Penh: CDRI.
- Evans, B., Voorden, C. v. d., & Peal, A. (2009). Public Funding for Sanitation: the many faces of sanitation subsidies. Geneva: Water Supply & Sanitation Collaborative Council.
- IFC, & The Asia Foundation. (2009). The Provincial Business Environment Scorecard in Cambodia: A Measure of Economic Governance and Regulatory Policy: International Finance Corporation of the World Bank and The Asia Foundation.
- Lockwood, H. (2004). Scaling Up Community Management of Rural Water Supply. Delft, NL: IRC International Water and Sanitation Centre.
- MAFF, & MOWRAM. (2007). Strategy for Agriculture and Water 2006–2010.
- MEF. (2010). Public Financial Management Reform Program (PFMRP): Vision. Retrieved 18 May 2010, from <http://www.mef.gov.kh/pfmrp-vision.php>
- Mehta, M. (2003). Meeting the Financing Challenge for Water Supply and Sanitation: Incentives to promote reforms, leverage resources, and improve targeting. Washington D.C.: The World Bank Water and Sanitation Program.
- Ministry of Environment. (2006). National Adaptation Program of Action to Climate Change.
- Ministry of Health. (2008). Health Strategic Plan 2008–2015: Department of Planning and Health Information.
- Ministry of Industry Mines & Energy. (2004). Drinking Water Quality Standards.
- Ministry of Planning. (2008). Implementation Manual on the Procedures for Identification of Poor Households.
- Mooijman, A., Berg, C. v. d., Jensen, L. O., & Bundy, D. (2005). School-Water Supply, Sanitation and Hygiene: Introduction to the Web-based toolkit. www.schoolsanitation.org: The World Bank, UNICEF, WSP.
- MoSVY. (2009). National Plan of Action for Persons with Disabilities, including Landmine/ERW Survivors 2009–2011.
- MOWA. (2009). Neary Rattanak III: Five Year Strategic Plan 2009–2013: Ministry of Women's Affairs.
- MOWRAM. (2005). Strategic Development Plan for the Water Sector 2006–2010.
- MRD. MRD Organizational Chart. Accessed 27 May 2010, from http://www.mrd.gov.kh/index.php?option=com_content&view=article&id=101&Itemid=74&lang=en
- MRD. (2001). Rural Water Supply and Sanitation Sector: 10 Year Sector Strategy: 2001–2011 (Draft): Ministry of Rural Development.
- MRD, & Partners. (2008). Access to Water Supply and Sanitation: Definitions for use in National Surveys: MRD.
- National Committee for Disaster Management, & Ministry of Planning. (2008). Strategic National Action Plan for Disaster Risk Reduction 2008–2013.
- NCDD. (2008). Prakas on the Reorganization of Structure, Roles and Responsibilities of the Provincial/

Municipal Development Committee and Executive Committee, No. 68 NCDD: National Committee for the Management of Decentralization and Deconcentration Reform.

- NCDD. (2010). NCDD Capacity Building Plan for 2010.
- NIS. (2008). General Population Census of Cambodia 2008: Provisional Population Totals: National Institute of Statistics, Ministry of Planning.
- NIS. (2009). General Population Census of Cambodia 2008 - National Report on Final Census Results: National Institute of Statistics.
- OSAGI. (2001). Gender Mainstreaming: Strategy for promoting gender equality. Retrieved 12 May 2010, from <http://www.un.org/womenwatch/osagi/pdf/factsheet1.pdf>
- Oyo, A. (2002). Creating Successful Private Sector Supply Chains: A resource guide for rural water supply and sanitation practitioners: WSP.
- Pennells, L. (2009). Gender Equality & Equity Situation Analysis: Rural Water, Sanitation and Hygiene in Cambodia: MRD and UNICEF.
- RGC. (1996). Law on Environmental Protection and Natural Resource Management: Ministry of the Environment.
- RGC. (2000). Law on the Management of Quality and Safety of Products and Services: Ministry of Commerce.
- RGC. (2001). Law on Khum/Sangkat Administrative Management, NS/RKM/0301/05: MoI.
- RGC. (2003). National Policy on Water Supply and Sanitation (National Policy). Phnom Penh: Council of Ministers, RGC.
- RGC. (2005). Strategic Framework for Decentralization and Deconcentration Reforms (unofficial translation).
- RGC. (2006). National Strategic Development Plan (NSDP) 2006–10
- RGC. (2007). Law on Water Resources Management of the Kingdom of Cambodia: MOWRAM.
- RGC. (2008a). Law on Administrative Management of the Capital, Provinces, Municipalities, Districts and Khans, Royal Kram No. NS/RKM/0508/017. Kingdom of Cambodia
- RGC. (2008b). Rectangular Strategy for Growth, Employment, Equity and Efficiency – Phase II: National Assembly.
- RGC. (2008c). Rectangular Strategy for Growth, Employment, Equity and Efficiency - Phase II: Foreword. Retrieved 26 May 2010, from http://www.pcspgroup.com/userfiles/file/goverment_document/E%20%20Foreword%20.pdf
- RGC. (2009). Law on the Protection and Promotion of the Rights of Persons with Disabilities: Ministry of Social Affairs, Veterans and Youth Rehabilitation.
- RGC. (2010a). National Program for Sub-National Democratic Development: 2009–2019: Secretariat of NCDD.
- RGC. (2010b). National Strategic Development Plan Update 2009–2013 (Discussion Draft): Ministry of Planning.
- Robinson, A. (2007). Rural Hygiene and Sanitation in Cambodia: The Way Forward? Strategic actions to improve rural hygiene and sanitation in Cambodia: WSP.
- Robinson, A. (2010). Sanitation Finance in Rural Cambodia: Review and Recommendations: WSP and ADB.
- Shordt, K. (2000). Action monitoring for effectiveness: improving water, hygiene and environmental sanitation programs. Delft: IRC International Water and Sanitation Centre.
- Trémolet, S. & Evans, B. (2010). OBA for sustainable sanitation: Global Partnership for Output-Based Aid (GPOBA) and WSP.
- TWG-RWSSH. (2007). Draft Terms of Reference.
- TWG on Agriculture and Water. (2007). Strategy for Agriculture and Water 2006–2010: Ministry of Agriculture, Forestry and Fisheries and the Ministry of Water Resources and Meteorology.
- UNDP. (2003). Human Development Report 2003: Millennium Development Goals: A compact among nations to end human poverty New York: Oxford University Press.
- WELL DFID (1998) Manual on Water Supply and Sanitation Program, London: WEDC for DFID
- World Bank (2006): Risk and Vulnerability Management in Cambodia: Valuation and Strategy for Social Protection
- World Health Organization. (2003). Guidelines for Drinking-Water Quality: Vol.3 Drinking-water quality control in small-community supplies. Geneva: WHO.
- World Health Organization. (2005). Water Safety Plans: Managing drinking-water quality from catchment to consumer. Geneva: WHO.
- WSP (2004). Marketing in Sanitation Work: African Water and Sanitation Program
- WSP. (2008). Sanitation demand and supply in Cambodia: Identifying constraints to increasing sanitation coverage.
- WSP. (2010). Position Paper: Water Supply and Sanitation for Disabled People (DRAFT): WSP.
- WSSCC, & WHO. (2005). Sanitation and hygiene promotion: programming guidance. Geneva: WHO.



Ministry of Rural Development

Corner Street #169 and
Russian Federation Boulevard
Phnom Penh, Kingdom of Cambodia
Tel: (855) 23 884 539
Fax: (855) 23 991 117
Website: www.mrd.gov.kh

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