



sanitation, aimed at increasing water supply coverage to 50% in the rural areas and sanitation coverage to 30%, and that ‘every Cambodian’ in rural areas will have safe water and sanitation access by 2025. This project is one of its first major steps forward.

### **Project Purpose and Objectives**

This project is aimed at providing rural water supply and sanitation facilities to approximately 1,760 villages in the five provinces of the Tonle Sap basin. It will include capacity building and institution strengthening efforts, as well as community mobilization, sanitation, and hygiene education programs. The purpose of these tasks is to enhance the health of low-income communities in rural areas by improving their hygiene, drinking water, and sanitation facilities. This will, in turn, benefit the environment of the Tonle Sap basin by lessening harmful wastewater inputs to the lake, rivers and groundwater. The specific project objectives are: 1) strengthen the community capability to design, cofinance, build, operate, and manage community-based water supply and sanitation facilities and increase hygiene awareness through information, education, and communication (IEC) campaigns; 2) improve access to safe water through the construction of adequate facilities based on community demand; 3) expand access to sanitation facilities; and 4) improve the capacity of government agencies, particularly at the local level, to plan and facilitate provisions for quality water and sanitation services in target communities. As a result, the project aims to provide an estimated 1.09 million people with safe drinking water and 0.72 million of these same people with improved sanitation facilities.

This project can be considered ‘decentralized sanitation’ because, even though it is a large, multi-agency project, work ‘on the ground’ will be accomplished through participating NGOs, who will run IEC and planning activities, as well as install the water supply and sanitation systems.

### **Partners and Funding Distribution**

For this project, the main funding agency was ADB, who supplied an \$18.0 million grant to the MRD. The Government of Cambodia will supply an additional \$2.06 million, while the beneficiaries themselves, through user fees for O&M and initial construction fees and in-kind assistance, will contribute approximately another \$3.94 million. The total project cost for all parties is therefore estimated to be \$24.0 million.

The main executing agency for the project is the MRD, which will be guiding beneath it the Project Steering Committee, the Project Management Unit, the Project Implementation Unit, each of the participating provincial District Offices of Rural Development, each of the participating district Commune Councils, and each of the participating commune Village Chiefs and their members. ‘Water supply user groups’ will then be established in each village that will manage the facilities in the long term, including the collection of capital and O&M fees from villagers.

Some of the cooperating agencies and NGOs may include, depending on their own initiative, UNICEF, Oxfam, IDE International, Plan International, Care, Concern, IRC, GRET, ADRA, UNDP, SIDA, JICA, and AFD, amongst others.

### **Project Activities**

This project is running from Q3 2005 until Q1 2012. The project activities include: project planning and preparatory activities at the central level (2005-2006), prioritizing intervention areas (2006), contracting qualified NGOs (2006), undertaking a community mobilization program (IEC campaigns, water supply and sanitation village plans, formation and training of local villager groups; 2006-2011),

capacity building on all government levels (2006-2011), and implementing the water supply and sanitation facilities (preparing their designs and costs, groundwater testing, construction/rehabilitation of water supply and sanitation facilities, transferring of O&M to the villager user groups, and follow-up water quality testing; 2006-2011).

A unique feature of the project's sanitation portion is that, following intensive IEC activities in each village, beneficiaries will be offered a choice of sanitation technology that best suits their needs: dry pit toilet, ventilated improved pit toilet, or pour-flush latrine.

### **Sanitation Technology / System**

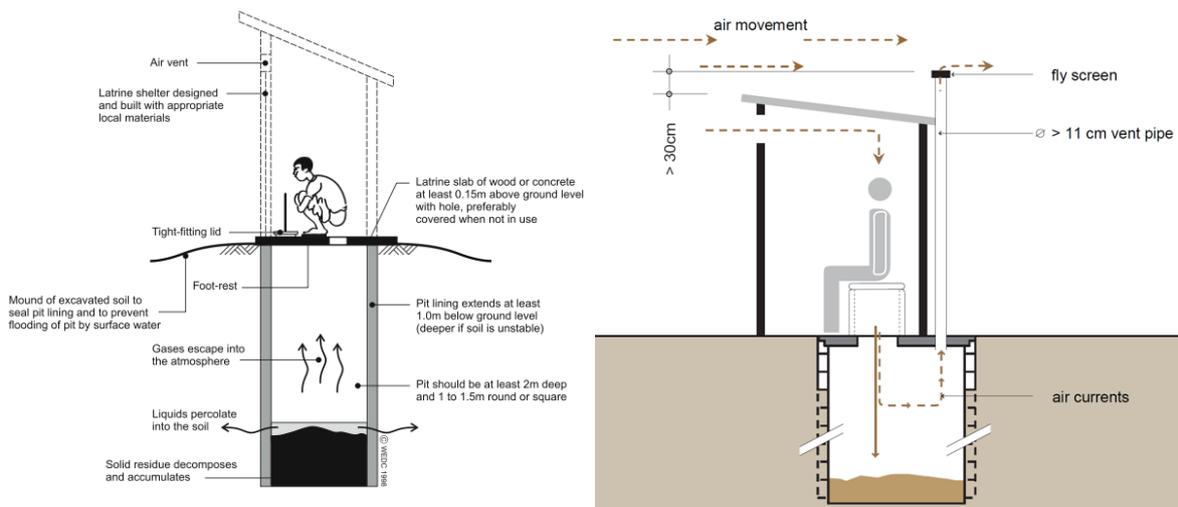
This project does not involve the construction of any decentralized wastewater treatment plants, so the technology package consists solely of the latrine choices that will be offered to villagers.

A dry pit toilet is a widely used and cheap form of sanitation. It is made with a latrine superstructure, a squatting/sitting slab that covers part of the hole but leaves area for input of wastes, and a dug pit, into which is deposited all of the excreta, urine, toilet paper, and/or anal wash water used. The dug pits are usually unlined and therefore water pervious, and, when filled, are either emptied or closed and relocated. Pit latrines are considered improved sanitation, though odors, problems with flies, and some groundwater contamination still occur.

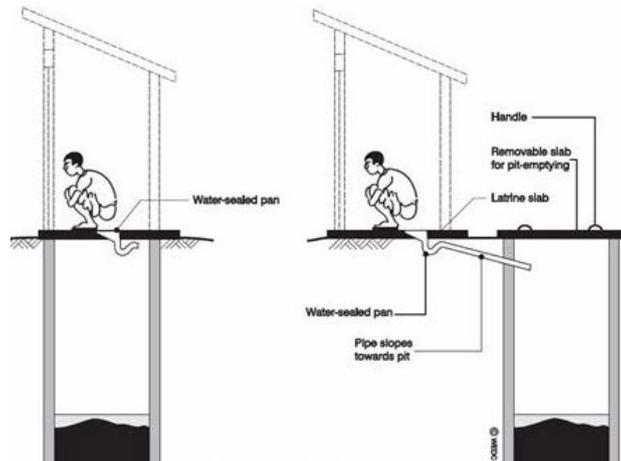
A ventilated improved pit toilet (VIP) is essentially identical to a dry pit toilet, except that it includes a vent pipe beside the latrine superstructure that leads up from a second opening in the slab. The vent pipe should be covered with mesh at its top. The addition of this vent pipe reduces odors and flies. The wind passing across the top of the pipe (which should extend above the superstructure) draws out air from the pit through the pipe, rather than out of the input hole, and the light shining into the pipe (assuming the inside of the superstructure area is kept dark) attracts flies to exit the pit up the pipe. However, the mesh covering the top of the pipe prevents the flies from leaving, and they eventually die and fall back into the pit. VIPs are considered improved sanitation, though some groundwater contamination still occurs.

A pour-flush latrine is essentially a flush toilet, except that the water is poured in by the user rather than having an automatically filling cistern. The pour flush latrine can be built similarly to the dry pit toilet and VIP, in that it consists of a superstructure, a dug pit, and a slab covering the pit except for an input hole. In this case though, the input hole is fitted with the toilet bowl (which can be ceramic, concrete, plastic, etc.), which then empties into the pit. The important part about the toilet bowl is that it is water-sealed, using a 'P-trap' style of piping, which prevents odor and flies from the pit. This basic template can take a variety of different construction forms: the toilet can instead be installed over a proper septic tank or leading to a sewerage system, the toilet can be installed inside a house, the bowl can be made for sitting or squatting, and so on. In its basic form though, which is what was used for this project, the pour-flush toilet is considered improved sanitation, though some groundwater contamination still occurs unless the pit is sealed and emptied regularly.

This project hopes to install enough of any of these three types of latrine so as to benefit up to 0.72 million Cambodians.



**Figure 1.** Schematics of a dry pit toilet (left) and a VIP (right)



**Figure 2.** Schematic of a pour-flush latrine, with regular pit (left) or offset pit for emptying (right)

### Number, Type, and Location of Beneficiaries

This project aims to directly benefit 1.09 million rural Cambodians in the Tonle Sap basin provinces of Battambang, Siem Reap, Pursat, Kampong Chhnang, & Kampong Thom with safe water supply systems and 0.72 million of those same villagers with improved sanitation systems, thus reducing the health risks to these people of poor existing drinking water and the risks of unmanaged excreta and wastewater. More indirect beneficiaries include the various levels of government staff that will benefit from the IEC and capacity building measures as well as non-recipient villages/villagers in these provinces, who will still benefit from lessened groundwater pollution and reduced health risks.

### Impacts and Challenges

This project is still ongoing, so no final analysis of its overall impacts has been yet undertaken. If it delivers on its proposals, then it will, by 2012, have supplied safe water supply and sanitation services to 1.09 and 0.72 million rural Cambodians, respectively, and will also have: empowered these communities to take responsibility for these new systems according to their needs, increased awareness of healthy and hygienic behavior, and improved the various levels of Cambodian governments' capacities to facilitate, regulate, and plan further basic water and sanitation services.

The main challenges foreseen in the early project reporting were: changes to government policy that could deemphasize the project, difficulty in achieving participation and ownership of the local village user groups, and/or an insufficient number of experience and efficient NGOs for carrying out work on the ground. The final project report for this project will give indication if any of these challenges materialized significantly.

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