

## **Chapter 3 Project Evaluation and Recommendations**

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### 3-1 Project Effect

The current status and problems, the inputs to be implemented by the Project for these problems and the effects to be obtained by the Project are shown in [Table 3-1](#).

Table 3-1 Effects by the Project

Current Status / Problems	Input by the Project	Effect by the Project
<b>Direct Effects</b>		
1 Most people in target communities depend on ponds and shallow wells for drinking water that are potentially contaminated with guinea worm and other bacteria, leading to deterioration in public health and sanitation	- Construction of 100 boreholes with hand pumps	- Provide safe drinking water to 36,000 people covered under the project. - Current water supply rate of 4.28% of the rural are in Oyo State will be improved to 5.31% in 2004 upon completion of the Project.
2 Due to the old age of well drilling equipment owned by WATSAN, the efficiency of work is low. Only one out of the two drilling rigs that WATSAN has is in operation.  WATSAN also does not have any logging and pumping test equipment, and has to carry out the casing program depending only on their experience.	- Procurement of two (2) drilling rigs and support materials. - Procurement of two (2) set of borehole logging equipment and two (2) set of pumping test equipment. - Guidance for borehole drilling technology and construction management by Japanese consultant	- WATSAN would have drilling rigs of latest model with high drilling efficiency. These rigs can be used by WATSAN to continue rural water supply and sanitation projects after the project is completed, helping to improve the rural water supply rate. - Upgrade capability of construction management, borehole drilling expertise and equipment maintenance and management of WATSAN personnel. - The supplied equipment will be capable of drilling in hard rock. This will enable the development of groundwater in regions with areas of hard rock, which was difficult in the past.
3 The operation and maintenance system of borehole facilities is very unreliable due to a lack of organization of residents. Residents have a low awareness of water charge, hygiene and environmental sanitation.	- To conduct the soft component programs for community capacity development in hygiene education, environmental sanitation and operation and maintenance of borehole facilities	- Establish VWC at 100 target communities - Enhance the awareness of residents of the water charge, hygiene and environmental sanitation. - Collect and reserve the operation and maintenance cost of facilities. - Enhance the capability of VWC members for hand pump repair. - Enable the sustainable maintenance and management of water supply facilities.
4 In 10 out of 16 of the target LGAs, LWC has not yet been established	- To organize a caravan to introduce the activities of LWC to 10 LGAs in order to establish LWC - To prepare working regulations for LWC	- An application system for borehole construction will be established. - Supporting system for borehole management to communities by LGA will be realized.
<b>Indirect Effects</b>		
1 Women and children have to fetch and carry water from distant water sources, sometimes even from a distance of several km from their residences. They are forced to spend considerable time and effort to obtain water.	- Construction of 100 boreholes with hand pumps.	- Reduce the average distance that water must be carried to less than 250m. - Reduce workload on women and children for obtaining water.

### **3-2 Recommendations**

In order to properly execute the maintenance of equipment and facilities procured under the Project and to manage the sustainable groundwater development and rural water supply project, it is indispensable to consider the following aspects.

- (1) **Securing budget for groundwater development project in Oyo State and maintenance of required techniques and organization control**

Oyo state WATSAN shall efficiently operate the procured equipment, while securing the necessary budget for the improvement of water supply rates of the rural area in Oyo state through sustainable implementation of groundwater development and water supply. Oyo state WATSAN shall also maintain techniques and organizational control required for the implementation of the Project.

- (2) **Water Quality Monitoring of Raw Water**

Problems caused by deterioration of water quality after utilization of the well facilities may be encountered for a long period due to the intrusion of contaminated materials to the source aquifer. Therefore, it is necessary to maintain the environment around the well facilities and conduct periodic sampling and analysis of water quality. If any unusual results are observed, appropriate countermeasures such as restriction of usage should be considered.

- (3) **Collection of Water Fee and Establishment of Transparent Accounting System**

Once the management system of well facilities is established and sustainable operation and maintenance are started, any unforeseen breakdown or obsolescence of the hand pump, flushing bore, elimination of deposit can occur during the lifetime of the facilities, and this will require extra expenditure. To cope with such situation, it is important to collect water fees properly and completely as well as to pay enough attention to reserve funds and bookkeeping. In particular, the accounting system must be independent and transparent to prevent embezzlement and/or misappropriations.

- (4) **Establishment of the supply system of spare parts for hand pumps**

It is essential to supply spare parts for hand pumps to realize VLOM of well facilities. However, with Oyo state WATSAN, LGA and VWC relying on spare parts granted from UNICEF, there are no past records of these organizations directly purchasing spare parts, and therefore, procurement through the present distribution system is difficult. Throughout the discussions with UNICEF, it was determined that with the support of UNICEF, it will be possible to purchase the maintenance kits for the hand pumps from UNIPUMPS, a manufacturer in Lagos.

However, in order to enhance the ownership of the beneficiaries, it is essential for Oyo state WATSAN to establish a commercial based supply system of the spare parts, in collaboration with Oyo state government.

(5) Collaboration with UNICEF

As a part of the collaboration with UNICEF, a lecturer is scheduled to be dispatched to hold seminars in the project. Moreover, in the supplying of spare parts for hand pumps, the collaboration with UNICEF is essential for the propelling of the rural water supply and sanitation project in the province. Further discussions shall be held.

(6) Collaboration with Technical Assistance (local domestic training)

For the supplementation and success of local activities performed in the “soft component” of the Project, technical assistance (local domestic training) is planned in Feb. 2003. Adjustments to the implementation schedules of the construction works and “soft component” will be considered in order to achieve efficient collaboration.