Chapter 3. Project Evaluation and Recommendations

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3-1 Project Effects

The definite project effects generated by the implementation of the project will be expected as shown below:

(1) Present Situation & Problems

1) Agriculture depending on pump irrigation from Nile River is managed in the area, and faces to the following problems;
   ① Malfunction of pump stations due to deterioration,
   ② Frequent trouble-shooting, and
   ③ When repairing pumps, they must tow to the workshop on the River because of lack of access road to the Nile River from main roads, resulting in low agricultural production due to long repairing period and non-availability of irrigation water during repair work.

Expansion of farmlands is promoted by farmers themselves even in the Upper Egypt. But limited irrigation water is the major constraining factor to the farmland expansion.

(2) Strategies(Project Components)

1) Procurement of the equipments necessary for the improvement of the five (5) floating pump stations that require urgent improvement, and
2) Provision of a maintenance barge equipped O & M and inspection equipments
3) Current beneficial area of the five (5) pump stations is 7,620 feddan (3,200 ha) but projected irrigable area will be 10,400 feddan (4,368 ha) including 1,540 feddan (609ha) of reversion area that has been excluded due to malfunction of pump stations, and 1,330 feddan (559ha) of expansion area.

(3) Project Effects・Degree of Improvement

1) The rehabilitation of the five (5) floating pump station will enable the area to be irrigated by stable supply of irrigation water, and contributes to stable agricultural production in the beneficial areas.
2) Annual O & M cost of the existing five (5) floating pump stations will be decreased from current 1,938 thousand LE (260 LE/feddan) to 1,734 LE (170 LE/feddan), namely, 10% decrease in annual OM cost and 35% decrease in OM cost per feddan, when based on the calculated O & M cost in the recent three years.
3) Current irrigation area of 7,620 feddans (3,200 ha, 29,860 beneficial persons) will be increased to 10,400 feddans (4,368 ha).
4) Current irrigation area of about 4,870 feddan (2,050ha), mainly planted with sugarcane, will be increased to about 6,100 feddan (2,560ha) with the improvement of irrigation water use by the

project.

5) Farm household income will be increased by about 18% (4.44 million LE per year) as far as market price of sugarcane will not be declined.
6) Employment opportunity to agricultural marketing and processing mainly for sugarcane will be expected, though it is tangible.
7) The project will contribute not only to increment of agricultural production and improvement of living standard of people in the area but also to national economy in improvement of demand and supply of food through an increase of agricultural production.

3-2 Recommendations

To realize expected benefits, Egyptian side must solve following matters accompanied with the improvement of floating pump stations.

(1) Constraints and Recommendations on Improvement of Pump Stations

The major components of pomp stations are composed of floating pump stations, discharge towers, discharge pipes, discharge sump and irrigation canals in the whole areas, and scope of this project is improve floating pump stations, and connection pipes which are used for connecting pump stations and discharge towers. Egyptian side shall implement rehabilitation of the remaining facilities. The existing discharge towers and facilities after towers will be planned to use continuously for the project but improvement and rehabilitation of the facilities necessary to meet with the increment of supply water for further expansion of irrigation area, will be required and be urgently implemented by MED and ID of MWRI, which will be possible under the present O & M system, and the Government of Egypt recognizes necessity for budget allocation for it.

1) Recommendations to MED

MED is required to execute the following works in accordance with improvement/replacement of the floating pump stations.

Pump Stations	Components
No.22 Sahel Alalaba Kebli	Repair of discharge tower, discharge pipe, and replacement of power line
No.23 Al Rakikin Sahel	Rehabilitation of discharge tower and discharge pipe
No.24 Blowkher	New installment of discharge tower, discharge pipe, and replacement of power line
No.25 El Ghorera	New installment of discharge tower, discharge pipe, and rehabilitation of discharge sump and irrigation canals, and replacement of power line
No.26 El Biadiea El Ollia	New installment of connection pipe connected with discharge tower and discharge pipe of the fixed type pump station, and replacement of support of power line

Note. Including air valves and coating of power lines etc. for the existing discharge towers.

2) Recommendations to ID

ID is required to execute to improve existing canals or construct new irrigation canal connected with the pump stations in accordance with replacement of the said pump facilities and discharge pipes.

Pump Stations	Components of the Works
No.22 Sahel Alalaba Kebli	New construction of canals for the expansion areas
No.23 Al Rakikin Sahel	Rehabilitation of slope of the canals
No.24 Blowkher	New construction of secondary canals for the expansion areas and installation of simple pumps
No.25 El Ghorera	Rehabilitation of the main canal, expansion of gates at tail-end of the main canal, new construction of connection canal between outlet of siphon and Mahamed canal
No.26 El Biadiea El Ollia	New construction of secondary canal to the expansion areas

(2) Problems and Recommendations on O & M of the Pump Stations

It will be likely for the pumps provided by the project that some situation, which requires inspecting and repairing, might occur in accordance with deterioration with age during irrigation period because the pumps are planned to operate through the year. Therefore, MED is required to maintain existing pump stations replaced by the project in order to get ready to unexpected situations.

(3) Technical Assistance or Necessity of Cooperation with Other Donors

The project area is managed individually under the independent irrigation system. Currently rehabilitation project of pump stations is implementing under the World Bank etc. and there are some pump stations even in the Upper Egypt that are the subjects to be improved under the said project but the areas have independent irrigation system. Therefore, it is expected that important pump stations and irrigation areas will be improved according to prioritization in order under the cooperation with other donors but as far as the project area, it is judged not necessary to make further cooperation with other donors because constraints on irrigation in the area will be preliminary solved by the project.