

資料 5. 討議議事録

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Minutes of Discussions
on the Basic Design Study
on the Project for Rehabilitation and Improvement of Sakoula Regulator on
Bahr Yusef Canal
In the Arab Republic of Egypt

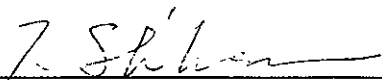
In response to a request from the Government of the Arab Republic of Egypt (hereinafter referred to as “Egypt”), the Government of Japan decided to conduct a Basic Design Study on the Project for Rehabilitation and Improvement of Sakoula Regulator on Bahr Yusef Canal (hereinafter referred to as “the Project”) and entrusted the study to the Japan International Cooperation Agency (JICA)

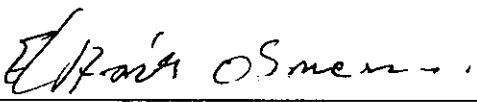
JICA sent to the Arab Republic of Egypt a Basic Design Study Team (hereinafter referred to as “the Team”), which is headed by Mr Takao SHIBUSAWA, Fourth Project Management Division, Grant Aid Management Department, JICA, and is scheduled to stay in the country from February 17 to March 21, 2003.

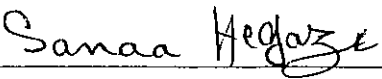
The Team held discussions with the officials concerned of the Government of Egypt and conducted field surveys at the Study area

In the course of discussions and field surveys, both parties have confirmed the main items described on the attached sheets. The Team will proceed to further work and prepare the Basic Design Study Report

Cairo, February 22, 2003


 Mr Takao SHIBUSAWA
 Team Leader,
 Basic Design Study Team,
 JICA


 Eng Mohamed El-Amir OSMAN
 Senior Undersecretary,
 Chairman of Irrigation Department,
 Ministry of Water Resources and Irrigation,
 The Arab Republic of Egypt


 Witnessed by Mts Sanaa HEGAZI
 Undersecretary,
 Asia & Australia,
 International Cooperation Department,
 Ministry of Foreign Affairs,
 The Arab Republic of Egypt

ATTACHMENT

1 Objective

The objective of the Project is to provide irrigation water efficiently and stably for the benefited area in Minia Governorate and Beni Suef Governorate through the rehabilitation and improvement of Sakoula Regulator on Bahr Yusef Canal

2 Project Site

The project site is located about 230 km Southern from Cairo on Bahr Yusef Canal in Minia Governorate as shown in Annex-1

3 Responsible and Executing Agency

Irrigation Department (hereinafter referred to as "ID") of Ministry of Water Resources and Irrigation (hereinafter referred to as "MWRI") is responsible for the administration and execution of the Project. The organization chart of MWRI is shown in Annex-2

4 Items requested by Egyptian Side

After discussing the items described in Annex-3, main items of the Japan's Grant Aid requested by Egyptian side were confirmed as follows,

- Reconstruction of Sakoula Regulator includes,

- Replace the decrepit brick regulator with canal bed protection and bank protection at upstream & downstream side,
- Change the manually-operated gates to electric-driven steel gates,
- Construct maintenance bridge,
- Construct a control house to accommodate equipment that receives water control information

The final components of the Japan's Grant Aid, however, will be decided after further studies

5 Japan's Grant Aid System

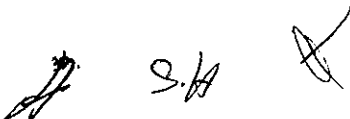
(1) The Government of Egypt has understood the system of Japan's Grant Aid explained by the Team as described in Annex-4

(2) The Egyptian side will take necessary measures described in Annex-5 for smooth implementation of the Project on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

6 Schedule of the Study

(1) The Team will proceed to further studies in Egypt until 20 March 2003

(2) JICA will prepare a draft report in English and dispatch a mission in order to explain its



contents around June 2003

- (3) In the case that the contents of the report are accepted in principle by the Egyptian Side, JICA will complete the final report and send it to Egypt by August, 2003

7 Other Relevant Issues

- (1) After discussing the items described in Annex-3, benefited area of the Project is about 77,000 Feddan (32,500 ha) under the Sakoula Regulator, and expecting new areas to be reclaimed by using additional irrigation water after the rehabilitation and improvement of Sakoula Regulator

The Egyptian side agreed to specify the area and location of the above-mentioned new areas during the Team's stay in Egypt

- (2) After discussing the items described in Annex-3, and to assure more effectiveness for the Project, if there are any irrigation facilities such as branch /secondary canals with appurtenant structures, pump station, Mesqa improvement and necessary facilities for new area in relation with the Project to be rehabilitated and/or improved, the Egyptian side agreed to complete them They also promised to provide their future's programs and implementation schedule during the Team's stay in Egypt

- (3) To maintain the sustainability of the Project, Egyptian side understood that Irrigation Department, Ministry of Water Resources and Irrigation should be responsible for the organization to be deployed and cost to be borne by the Government of Egypt for operation and maintenance of the facilities to be procured under the Project

- (4) The Team explained the necessity of studying the current situation of the Project sites, such as present farming plan, cropping pattern, the distribution system of agricultural products, market etc to examine the scope and specification of facility

The Egyptian side understood the above-mentioned subjects and promised to take necessary measures for the subsequent Study

- (5) The Team explained the current situation in Japan that Japanese Grant Aid for agriculture sector should be provided for a project in which agricultural products such as vegetables and fruits are not for exporting to Japanese market

The Egyptian side understood that and expressed that the due agricultural products would be for domestic supply and that they would make efforts to provide adequate data and information to the Team to facilitate the understanding of the Government of Japan of the eligibility of the Project

- (6) The Team explained the importance of security for the persons concerned with the Project in order to proceed the Basic Design Study and Implement the Project The Egyptian side understood that and expressed the necessary measures for the subsequent Study

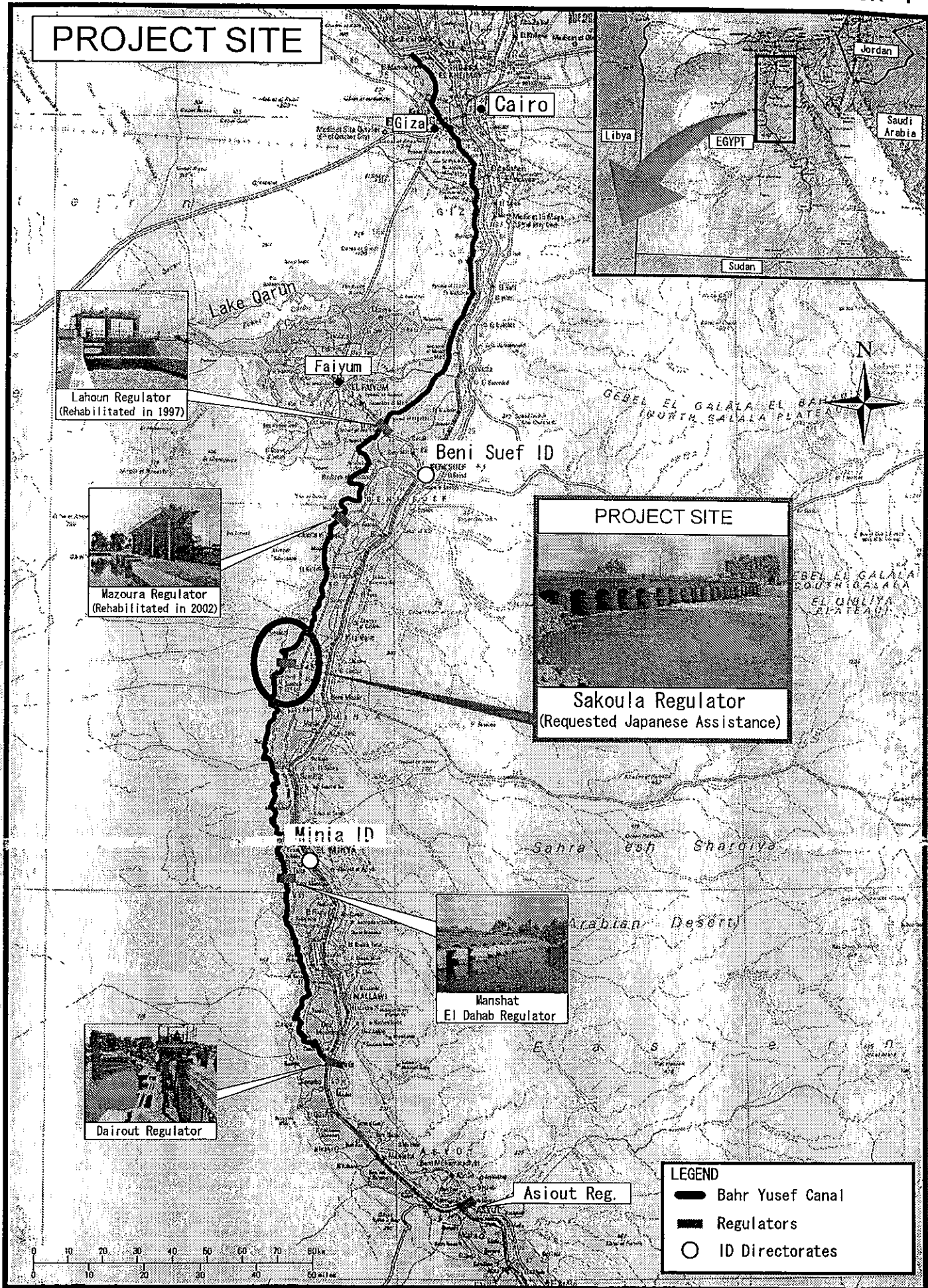
- (7) Both sides confirmed that the request items may change due to the result of the Study.

- (8) Both sides confirmed that the approval of the Project would depend on the decision by the Government of Japan



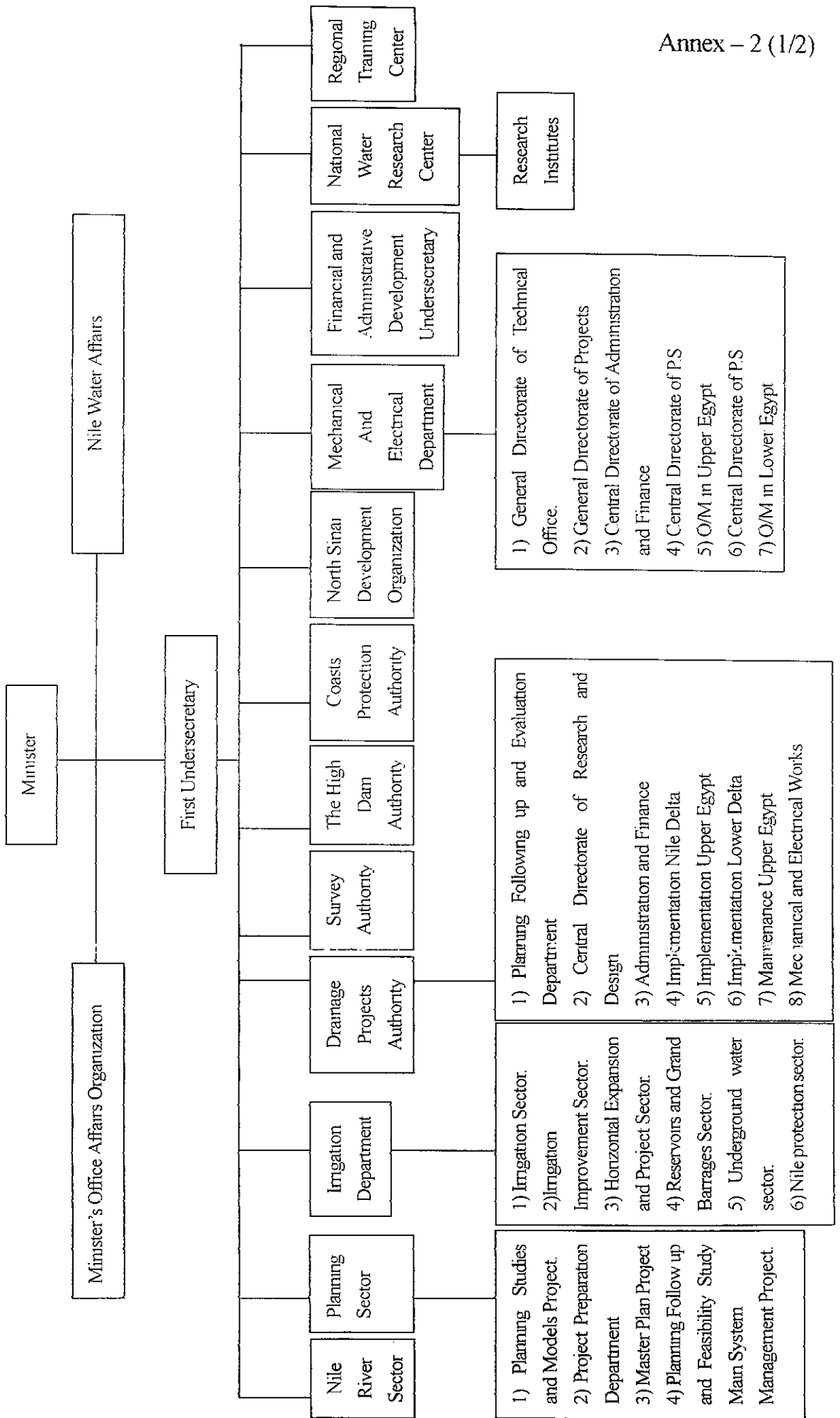
- (9) After discussing the items described in Annex-3 at the site, the Egyptian side recommended to the Team that the location of reconstruction site for Sakoula Regulator would be at the same place of the present Regulator existed, in the case that the Government of Japan approves the Project
- (10) Egyptian side assured that they will be responsible for the land preparation needed for construction concerning the Project
- (11) Both sides confirmed the title of the Project such as “the Project for Rehabilitation and Improvement of Sakoula Regulator on Bahı Yusef Canal” instead of “the Project for Rehabilitation of Sakoula Regulator on Bahr Yussef Canal”

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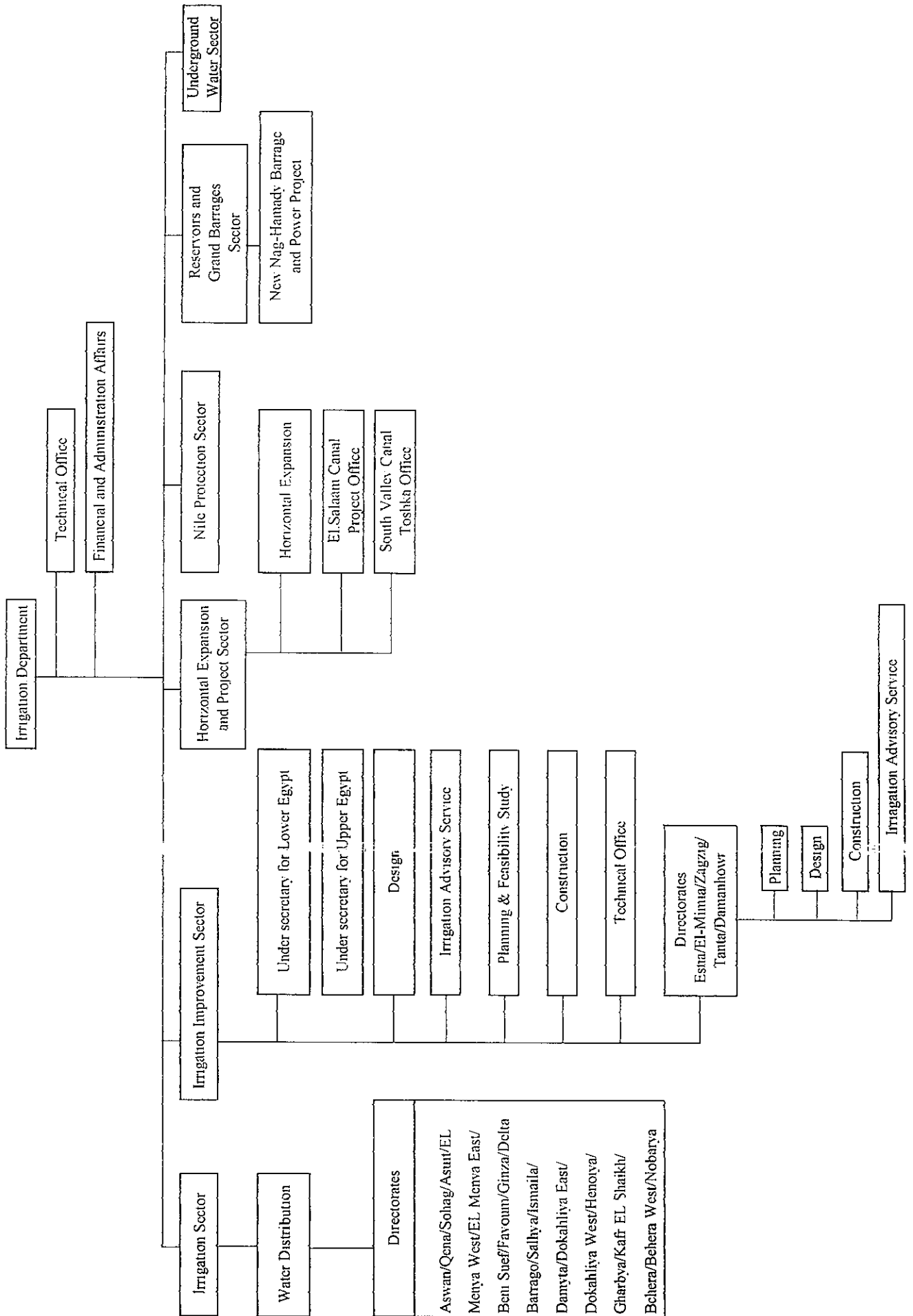


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**ORGANIZATION CHART
(MINISTRY OF WATER RESOURCES AND IRRIGATION)**



ORGANIZATION CHART (IRRIGATION DEPARTMENT)



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Memorandum of the Meeting

A. Discussions and comments on the Inception Report

The Team explained the contents of the Inception Report (IC/R). The major issues and discussions are shown below.

1. Necessity for the Reconstruction of Sakoula Regulator

Egyptian side expressed the necessity for the reconstruction of Sakoula Regulator as follows.

- 1) By present situation of the regulating body deteriorated with 100 year old, it is difficult to retain the design water level to distribute required water volume to benefited area through branch canals and pump stations located at upstream of the Sakoula Regulator
- 2) By non-proper operation condition of present manually operated gates, adequate and smooth water management is insufficient to cope effectively with changing to meet required water volume at downstream

2. Discussion on Items to be Discussed (Page 13 of IC/R)

- (1) Components of the Project to be executed in the scheme of Japan's Grant Aid

The Team confirmed the components of the Project requested by the Government of Egypt described in the application form for Japan's Grant Aid.

The Team requested Egyptian side to confirm the benefit area of 172,000 feddan described in the application form for Japan's Grant Aid. Egyptian side agreed on that, and later on, 172,000 feddan was clarified to 77,000 feddan as a direct benefited area. As an indirect benefited area, Egyptian side mentioned to include the direct benefited areas under Mazoura and Lahoun regulators located at downstream of Sakoula Regulator.

And also Egyptian side expressed that the new areas and its locations, being expected to reclaim by using additional irrigation water after the rehabilitation and improvement of Sakoula Regulator, would be specified in discussion with Horizontal Expansion and Project Sector, MWRI during the Team's stay in Egypt.

- (2) Obligations of the Government of the Arab Republic of Egypt for the Study

Egyptian side agreed to provide necessary measures mentioned in "3-5 Items Requested by the Team to the Recipient Side (page 11 of IC/R)".



(3) Cost borne by the Government of the Arab Republic of Egypt for the Project to be implemented

Egyptian side agreed on the major undertakings described in page 7 of IC/R and will make necessary arrangement in coordination with relevant ministries and governorates

(4) Organization to be deployed and cost to be borne by the Government of the Arab Republic of Egypt for operation and maintenance of the facilities to be procured under the Project

To maintain the sustainability of the Project, Egyptian side understood that Irrigation Department, Ministry of Water Resources and Irrigation should be responsible for the organization to be deployed and cost to be borne by the Government of Egypt for operation and maintenance of the facilities to be procured under the Project

(5) Process of approval of the Project in the Arab Republic of Egypt

The Egyptian side agreed to take necessary measures in coordination with Ministry of Foreign affairs

(6) Aid by third countries or international organizations such as the World Bank and so on

The Egyptian side confirmed that there is no other Grant Aid program in relation with development of Bahr Yusef Canal, and mentioned that Irrigation Improvement Program (IIP) would be scheduled in El-Harika Canal in Minia governorate

(7) Benefits and effects on beneficiaries by improving agricultural productivity through the Project

Egyptian side explained that the increased crops would be used only for domestic consumption and they have no intention to export them to Japan

(8) Impact by the past projects such as rehabilitation and improvement of Lahoun, Mazoura regulators which were assisted by the Japan's Grant Aid

Egyptian side agreed to assist the Team to evaluate the previous projects by making utility of the data concerning the above two regulators

(9) Any other alternative construction site for reconstructing Sakoula regulator which was recommended during Feasibility study for "Rehabilitation and Improvement of Delivery Water System on Bahr Yusef Canal" in 1992

Egyptian side expressed to decide the site of the new regulator after the site investigation by Egyptian side and the Team. And after that, Egyptian side requested to the Team that the location for new regulator would be at the same place of the present Regulator existed, due to the fact that the residential area was crowded along Bahr Yusef Canal



(10) Effects and Future's program of Telemetry project supported by USAID and relation to this Project

The Egyptian side explained that Telemetry system, even after completion of USAID supporting program, has been used practically for monitoring water distribution in Nile Valley by Egyptian fund And control of water distribution is made by each directorate level in coordination with the Telemetry system

Even though the Team expressed the necessity of having control house should be considered carefully Then, both sides agreed that necessity of the control house would be examined to discuss with relevant officials of Irrigation Sector, MWRI

(11) Detail of the Mesqa improvement program and relation to this Project

The Egyptian side agreed to provide future's programs on rehabilitation and improvement of irrigation facilities such as branch /secondary canals with appurtenant structures, pump station, Mesqa improvement and so on in relation with the Project during the Team's stay in Egypt

Then, to assure the Project more effectiveness, the Egyptian side promised to complete the necessary construction and installation works for the above-mentioned programs in accordance with the progress of the Project implementation

3. Arrangement of the questionnaire

Egyptian side agreed to prepare the questionnaire answers during the Team's stay in Egypt

4. Security of the Study Team

Egyptian side agreed to make necessary measures to secure the Japanese mission members especially during field visit to the study area

5. Counterpart Personnel for Each Japanese Expert

Egyptian side agreed to assign the following personnel as counterpart for each Japanese expert as shown below,

Japanese side	Egyptian side	Responsibility
Mr Kazumitsu TSUMURA	Eng Alaa Ismail	Coordinator/ Operation and Maintenance
Mr Fumihiko KOMADA	Eng Ahmad Abd El Rassoul	Structural Design Planning
Mr Takao KUME	Eng Gamal M Ayad Eng Osama Hazza	Farming Planning Irrigation Planning
Mr Hisashi OURA	Eng. Alaa Ismail	Geological Survey
Mr Seiichi YAMAKAWA	Eng Tarek El Tayeb	Hydrology
Mr Masanori NARUKAWA	Eng Mohamed Abd El-Meneim	Construction Planning

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B. List of Attendance :

1) Egyptian side :

- Eng. Mohamed El-Amir Osman Senior Undersecretary, Chairman of Irrigation Department, Ministry of Water Resources and Irrigation (MWRI)
- Dr M Bahaa El-Din Ahmed First Undersecretary, Reservoirs and Grand Barrages Sector, MWRI
- Eng Adel H. Saleh Advisor to Irrigation Improvement Sector (IIS)
- Eng Shoukry El-Gamal Undersecretary of IIS
- Eng Aly Abd El-Razk General Director for Implementation, IIS
- Eng Alaa Ismail Director of Technical Office, IIS
- Eng. Ali Kamal Director of Design, IIS
- Eng. Gamal M Ayad Senior Economist, IIS
- Eng Ahmed Abd El-Rassoul Design Engineer, IIS
- Eng. Tarek El-Tayeb Monitoring and Evaluation Engineer, IIS
- Eng Mohamed Abd El-Moneim Construction Engineer, IIS
- Eng Osama Hazzaa Construction Engineer, IIS

2) Japanese side :

Study Team :

- Mr Takao Shibusawa Leader/ Deputy Director, Fourth Project Management Division, Grant Aid Management Department, Japan International Cooperation Agency (JICA)
- Mr Kazufumi Taira Technical Advisor / Section Chief, International Cooperation Division, General Food Policy Bureau, Ministry of Agriculture, Forestry and Fisheries
- Mr Kazumitsu Tsumura Chief Consultant / Operation and Maintenance (O&M) Planning
- Mr. Takao Kume Irrigation Facility Planning / Farming Planning
- Mr. Fumihiko Komada Structural Design Planning
- Mr. Hisashi Oura Geological Survey
- Mr. Seiichi Yamakawa Hydrology / Natural Condition Survey
- Mr Masanori Narukawa Cost Estimation / Construction Planning
- Mr Eichi Shibata Coordinator/ Baseline Survey

JICA Egypt Office :

- Mr. Daimin Hanadate Assistant Resident Representative
- Mr Alfred Zoser Development Project Officer



JAPAN'S GRANT AID

The Grant Aid scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

Japan's Grant Aid Scheme is executed through the following procedures

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for the Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Scheme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.


Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and recipient country.

Finally, for the smooth implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2 Basic Design Study

(1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by



JICA on a requested project (hereafter referred to as “the Project”) is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project’s implementation,
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view,
- Confirmation of items agreed upon by both parties concerning the basic concept of the Project,
- Preparation of a Basic Design of the Project,
- Estimation of cost of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan’s Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Study, JICA uses registered consulting firms. JICA selects firms based on proposals submitted by interested firms. The firms selected carry out a Basic Design Study and writes reports, based upon terms of reference set by JICA.

The consulting firm used for the Study is recommended by JICA to the recipient country to also work on the Project’s implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan’s Grant Aid Scheme

(1) Exchange of Notes (E/N)

Japan’s Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.



- (2) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consulting firm(s) and (a) contractor(s) and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as natural disaster, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

- (3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However, the prime contractors, namely, consulting, constructing and procurement firms, are limited to "Japanese nationals" (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

- (4) Necessary of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

- (5) Undertakings required to the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

- a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction,
- b) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) To secure buildings prior to the procurement in case the installation of the equipment,
- d) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,



f) To accord Japanese nationals, whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work

(6) "Proper Use"

The recipient country is required to operate and maintain the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid

(7) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank") The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank



Annex-2
(Annex-5)

Major Undertakings to be taken by Each Government

No	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot		●
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a The distributing line to the site		●
	b The drop wiring and internal wiring within the site	●	
	c The main circuit breaker and transformer	●	
	2) Water Supply		
	a The city water distribution main to the site		●
	b The supply system within the site (receiving and elevated tanks)	●	
	3) Drainage		
	a The city drainage main (from storm sewer and other to the site)		●
	b The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a The city gas main to the site		●
	b The gas supply system within the site	●	
	5) Telephone System		
	a The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a General furniture		●
	b Project equipment	●	
8	To bear the following commission to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure unloading and customs clearance at port disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site		●
10	To accord Japanese nationals, whose service may be required in connection with the supply of the products and the services under the verified contract, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
12	To maintain and use properly and effectively the facilities contracted and equipment provided under the Grant		●
13	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

**MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON THE PROJECT FOR
REHABILITATION AND IMPROVEMENT OF
SAKOULA REGULATOR ON BAHR YUSEF CANAL
IN
THE ARAB REPUBLIC OF EGYPT
(EXPLANATION ON DRAFT REPORT)**

In February 2003, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Rehabilitation and Improvement of Sakoula Regulator on Bahr Yusef Canal (hereinafter referred to as "the Project"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared draft report of the Study.

In order to explain and to consult the Government of Egypt on the components of the draft report, JICA sent to Egypt the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Norio SHIMOMURA, Resident Representative, JICA Egypt Office, from June 13 to June 20, 2003.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Cairo, June 22, 2003

下村 利夫

Mr. Norio Shimomura
Leader
Draft Report Explanation Team
Japan International Cooperation Agency

El-Amir Osman

Eng. Mohamed El-Amir Osman
Senior Undersecretary,
Chairman of Irrigation Department,
Ministry of Water Resources and Irrigation
The Arab Republic of Egypt

Sanaa Hegazy

Ms. Sanaa Hegazi
Undersecretary, Asian & Australia,
International Cooperation Department
Ministry of Foreign Affairs,
The Arab Republic of Egypt

ATTACHMENT

1. Components of the Draft Report

The Government of Egypt (hereinafter referred to as “Egyptian Side”) agreed and accepted the components of the Draft report explained by the Team.

2. Japan’s Grant Aid Scheme

Egyptian Side understood the Japan’s Grant Aid Scheme and the necessary measures to be taken by Egyptian Side as explained by the Team and described in Annex-1 and 2, which are attached as for Annex-4 and 5 of the Minutes of Discussions signed on 22nd February 2003

3. Reconfirmation of Necessary Measures

Egyptian Side and the Team (hereinafter referred to as “Both Sides”) reconfirmed the necessary measures agreed in Annex-3 of the Minutes of Discussions signed on 22nd February 2003.

4. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to Egyptian Side by August 2003.

5. Other Relevant Issues

5-1. Both Sides confirmed that total beneficial area of the Project is 82,600 Feddan (34,700 ha) as shown in Annex-4.

5-2. The Team explained that overflow control by operating overflow-type gate is required to provide irrigation water efficiently and stably for the beneficial area mentioned in 5-1. Egyptian Side understood that the Irrigation Department (hereinafter referred to as “ID”), Ministry of Water Resources and Irrigation (hereinafter referred to as “MWRI”) should be responsible for necessary arrangements for the Project, such as budget allocation, collaboration among subsidiary organizations, human resource development including the training and staff assignment, to operate and manage Sakoula Regulator with overflow-type gates in terms of flow-control regarding to the schedule as shown in Annex-5.

5-3. Both Sides confirmed that the staff of Sakoula Regulator should acquire how to operate and manage overflow-type gates regulator through OJT implemented by Sanyu Consultants Inc. by the end of the Project.

5-4. At request of Egyptian Side, JICA will dispatch the short-term expert for improvement of operational technique and knowledge about overflow control by operating overflow-type gate to the staff concerned to Lahoun Regulator, Mazoura Regulator and other related

organizations. Egyptian Side promised to promote technical transfer from the staff of organizations mentioned above to the staff concerned to Sakoula Regulator

- 5-5. Egyptian Side promised to promote human resource development including the training on the staff who should operate and manage Sakoula Regulator continuously in order to achieve the unitary water management of Lahoun Regulator, Mazoura Regulator and Sakoula Regulator
- 5-6. In relation with 5-5, the Team explained that flow-rate control is essential instead of downstream water level control to achieve unitary water management of the above mentioned three(3) Regulators. And the Team strongly requested to Egyptian side to accept that Water distribution section of Asiout Irrigation Directorate provides flow-rate information of each Regulator mentioned above to concerned organizations of the Regulators. Egyptian side promised that Asiout Irrigation Directorate should provide flow-rate information to concerned organizations.
- 5-7. Egyptian Side confirmed that they had full responsibilities for land acquisition and preparation except recovery works of those lands. Egyptian Side confirmed that the existing lockage equipped with Sakoula Regulator should be used as temporary storage yards during the Project.
- 5-8. Egyptian Side confirmed that they were responsible for transportation costs and procedures as follows;
- (1) tax exemption and customs clearance of the products at the port of disembarkation and
 - (2) internal transportation of the products for permanent use such as gate facilities, sheet piles for permanent use, generator and etc. from the port of disembarkation to the Project site, of which conditions in detail are shown in Annex-6.
- 5-9. Both Sides confirmed that the temporary electricity equipment would be equipped by the Project and that permanent one be equipped by Egyptian Side. Egyptian Side confirmed that permanent electricity equipment for the new regulator will be installed at the beginning stage of the construction of the regulator for the use of civil contractor of the regulator as the temporary electricity facilities and operation of regulator facilities within the capacity of the transformer installed. The cost for electricity for construction purpose is borne by the civil contractor.
- 5-10. On condition that the Grant Aid by the Government of Japan is extended to the Project, Egyptian Side shall take necessary measures as follows,
- (1) to secure sufficient personnel and budget necessary for operation and maintenance of the facilities of the Project,
 - (2) to secure the safety of the concerned personnel during the implementation of the Project,

(3) to allow construction machinery and materials imported for temporary use for the Project to be re-exported as required.

5-11. Both sides confirmed the operation and maintenance (hereinafter referred to as "O&M") plan for implementing the Project effectively as shown in Annex-7, and that MWRI should take responsibility for whole O&M work for the Sakoula Regulator.

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LIST OF ATTENDANCE

1. Egyptian side

- 1) Eng. Mohamed Si-Amir Osman Senior Under Secretary, Chairman of Irrigation Department (ID), MWRI (Ministry of Water Resources and Irrigation)
- 2) Eng. Kamal Enany Head, Irrigation Improvement Sector (IIS), ID
- 3) Eng. Adel Hashem Technical Advisor of IIS
- 4) Eng. Alaa Ismail Director of Technical Office, IIS, ID
- 5) Eng. Gamal El-Shafee Head of Central Directorate for Water Distribution, IS, ID
- 6) Eng. Ali Kamal Director of Design, IIS, ID
- 7) Eng. Samir Eweada Design Engineer, IIS, ID
- 8) Eng. Hussein Aly Morsy Design Engineer, IIS, ID
- 9) Eng. Tarek Kamal El-Din Design Engineer, IIS, ID
- 10) Eng. Ahmed Mahdy Design Engineer, IIS, ID

2. Japanese side

Draft Basic Design Explanation Team

- 1) Mr. Norio Simomura Leader, Representative, JICA Egypt Office
- 2) Mr. Kazumitsu Tsumura Chief Consultant/ Operation and Maintenance Planning
- 3) Mr. Tatsuhiko Mori Irrigation Facility Planning/ Farming Planning
- 4) Mr. Fumihiko Komada Structural Design Engineer
- 5) Mr. Masanori Narukawa Cost Estimation/ Construction Planning

JICA Egypt Office

- 1) Mr. Daimin Hanadate Assistant Resident Representative

JAPAN'S GRANT AID

The Grant Aid scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

Japan's Grant Aid Scheme is executed through the following procedures:

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for the Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Scheme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and recipient country.

Finally, for the smooth implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2 Basic Design Study

(1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by

JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- Confirmation of items agreed upon by both parties concerning the basic concept of the Project.
- Preparation of a Basic Design of the Project.
- Estimation of cost of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions

(2) Selection of Consultants


For smooth implementation of the Study, JICA uses registered consulting firms. JICA selects firms based on proposals submitted by interested firms. The firms selected carry out a Basic Design Study and writes reports, based upon terms of reference set by JICA

The consulting firm used for the Study is recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency

3. Japan's Grant Aid Scheme

(1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.



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- (2) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consulting firm(s) and (a) contractor(s) and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as natural disaster, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

- (3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However, the prime contractors, namely, consulting, constructing and procurement firms, are limited to "Japanese nationals" (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

- (4) Necessary of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

- (5) Undertakings required to the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following.

- a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction,
- b) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) To secure buildings prior to the procurement in case the installation of the equipment,
- d) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,



f) To accord Japanese nationals, whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work

(6) "Proper Use"

The recipient country is required to operate and maintain the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid

(7) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country

(8) Banking Arrangements (B A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A P) issued by the Government of the recipient country or its designated authority

(9) Authorization to Pay (A P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank

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Annex-2
(Annex-5)

Major Undertakings to be taken by Each Government

No	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot		●
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a The distributing line to the site		●
	b The drop wiring and internal wiring within the site	●	
	c The main circuit breaker and transformer	●	
	2) Water Supply		
	a The city water distribution main to the site		●
	b The supply system within the site (receiving and elevated tanks)	●	
	3) Drainage		
	a The city drainage main (from storm sewer and other to the site)		●
	b The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a The city gas main to the site		●
	b The gas supply system within the site	●	
	5) Telephone System		
	a The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a General furniture		●
	b Project equipment	●	
8	To bear the following commission to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure unloading and customs clearance at port disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site		●
10	To accord Japanese nationals, whose service may be required in connection with the supply of the products and the services under the verified contract, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
12	To maintain and use properly and effectively the facilities contracted and equipment provided under the Grant		●
13	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

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Obligations of Egyptian Government

In the implementation of the Japan Grant Aid Project, the outline of the measures which the government of Egypt is required to undertake during preparation, construction and operation and maintenance of the facilities and equipment being constructed is as follows

(1) General

- 1) To provide necessary data and information for detailed design conducted by the Japanese consultant after approval of this basic design,
- 2) To secure land necessary for the Project prior to commencement of the installation of the materials and equipment,
- 3) To provide facilities of electricity and others needed for the Project in and around the sites,
- 4) To bear the necessary commission to the bank based on the Bank Arrangement,
- 5) To ensure prompt execution of unloading at port, customs clearance, and transport of the materials and equipment for the Project,
- 6) To exempt Japanese nationals from customs duties, internal taxes, and other fiscal levies which are imposed in Egypt with respect to the supply of materials, equipment and services or to bear the same,
- 7) To accord Japanese nationals who offer services for the Project the facilities for their entry into Egypt and stay therein for the performance of their works,
- 8) To operate and maintain the facilities and equipment provided under the Grant Aid properly and effectively, to inform the condition of the operation and maintenance of the facilities and equipment as Japanese side request,
- 9) To bear all the expenses other than those to be borne by the Grant Aid, necessary for the implementation of the Project

(2) Obligations prior to and during the implementation of the Project

- 1) Regulation of flow in the Bahr Yusef Canal during construction including repair of existing gates:
To make repairing of existing gates which are out of order now and to maintain 8 gates properly during whole construction period until diverting water to the new regulator
- 2) Existing public utilities arrangement including approval and coordination
To obtain the permission from the authorities concerned in advance for the removal and relocation of existing utilities temporally or permanently required for the Project, and to make subsequent coordination with the authorities concerned
- 3) Temporary yards arrangement including approval and coordination
To obtain the permission before commencement of the project on the use of canal of navigation lock including backfilling of the canal, and use of the land in the intermediate bank and the land at the left bank side of the canal as shown in Appendix A2-1-15 2 "Temporary Yard Plan" of the draft Basic Design report

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4) Internal transportation

To provide internal transportation of equipment and materials for permanent use imported for the Project

5) Land acquisition and Land rental for temporary yard

- To arrange the provision of land, cost for land and land leveling for the temporary yard including the private land (Yard 6 of 3,000m²) neighboring to the site and the land (Yard 3 for labor camp) as referred to Appendix A2-1-15.2 “Temporary yard plan & Electric Power Plan” of draft Basic Design report
- To obtain approval and to secure land needed for the construction of temporary bridge and cofferdam
- To prepare land for disposal area of surplus soil materials

6) Tax exemption arrangement for construction machinery and materials for temporary use, and equipment and materials for permanent use imported for the Project and employment of handling agent(s) for internal transportation

7) Undertaking of electric power receiving facilities

To install a permanent transformer and switch gear at near control house and extension cable from the existing 11KV high voltage power line which is running at the right bank of the upstream, 220m away from the regulator

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Clarification of the Beneficial Area of the Project

The beneficial area is designated at the areas irrigated by the gravity flow and pumping up from the Bahr Yusef irrigation canal located at upstream of the Sakoula Regulator in Minia and Beni Suef Governorates where are benefited by the rehabilitation of the Regulator

Since the Kamader pump irrigation area has originally been included to the beneficial area based on the classification of the management organization, it is excluded from the beneficial area because irrigation water for the area is diverted from Manshat El Dahab lateral canal which is originated from the upper stream of Manshat El Dahab Regulator Accordingly, the beneficial area of the project is 82,600 feddan (approx 34,700ha) in total as shown in the following table,

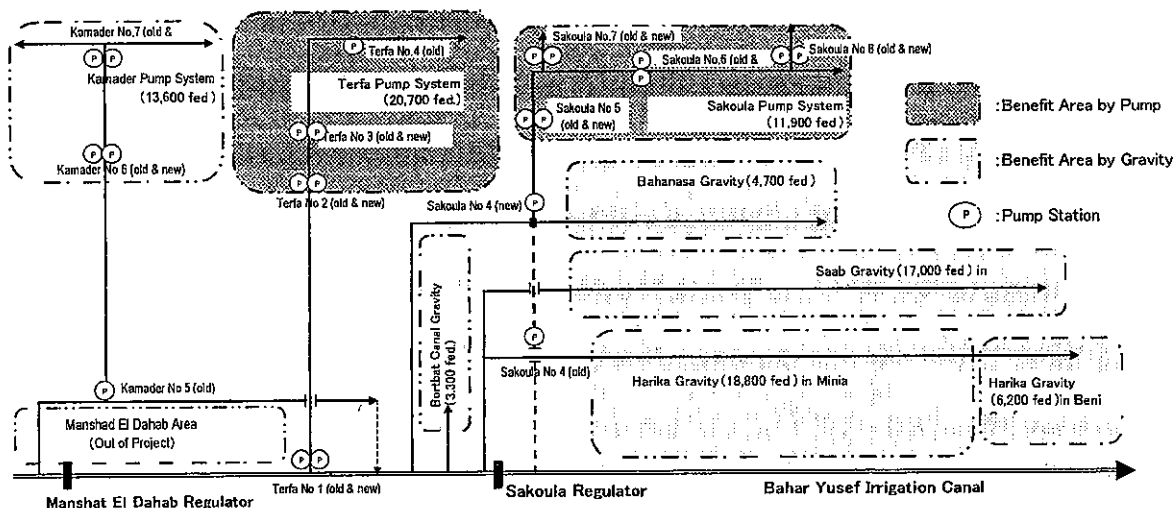
Beneficial Area

		Understanding during Minutes signed on 22 nd February		Unit : feddan
Name of Area	Intake	Old Land *1)	Reclaimed Land *2)	Clarified
Minia G				
1. Kamader	Pump	8,700	4,900	0 *3)
2. Terfa	Pump	14,700	6,000	20,700
3. Sakoula	Pump	9,600	2,300	11,900
4. Bahanasa	Gravity	4,700	0	4,700
5. Harika-1	Gravity	18,800	0	18,800
6. Saab	Gravity	17,000	0	17,000
7. Other	Gravity	3,300	0	3,300
Sub-total		76,800	13,200	90,000
Beni Suef G				
8. Harika-2	Gravity	6,200	0	6,200
Total		83,000	13,200	82,600 feddan
		96,200 feddan		

Remarks *1) Old land : Area cultivation had started before year 1960,

*2) Reclaimed land : Areas have been reclaimed after 1960's with development of Aswan high dam

*3) Area taking irrigation water from Manshad El Dahab canal is to excluded of Skoula beneficiary area



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Internal Transportation

- 1) Egyptian side confirmed that the internal transportation for the equipment and materials for permanent use to be imported for the Project shall be executed in accordance with the construction schedule shown in Appendix A2-4-8 of the draft Basic Design report so as not to cause any delay
- 2) Egyptian Side confirmed that capable and experienced internal transport agent(s) for the equipment and materials for permanent use to be imported for the Project shall be employed
- 3) In order to execute the internal transportation properly, both parties confirmed that the following conditions will be specified in the civil contract
 1. The civil contractor shall note that the Government of Egypt will be responsible for the internal transportation costs for the equipment and materials for the permanent use to be imported for the Project.
 - 2 The civil contractor shall inform to the implementation agency of the Government of Egypt necessary information for the importation of goods
 - 3 The civil contractor shall communicate and coordinate with the implementation agency of Government of Egypt closely in order to make smooth internal transportation.

Operation and Maintenance Requirement**(1) Present and proposed number of Staff relation with Sakoula Regulator for Operation**

Post	West Bahr Yusef Inspectorate Office	Edwa Irrigation Office	Site of Sakoula Regulator		Remarks
			Present	After Rehabilitation	
1) Inspector	1				
2) Work's director	3				
3) Asst work's director	2				
4) Civil Engineer	1	1			
5) Mechanic Engineer	2				
6) Technician	11	22			
7) Administrative	18	3			
8) Chief Gate Operator			1	1	Same person
9) Gate Operator		29	7	4	New employee
10) Worker	12	53		2	Former operator
11) Driver	3	1			
Total	53	109	8	7	

(2) Components of Operation and Maintenance Works

After the rehabilitation and improvement of Sakoula Regulator, the following main items of operation and maintenance works shall be undertaken by the Egyptian Side,

① Daily Check

- 1) Daily visual check on crack or depression of concrete structures and peel and rust of coated steel parts
- 2) Check on indicator lighting of operation panel of each facility.
- 3) In overflow type gate, floating glass, driftwood and rubbish, etc would not stay in front of the gate but stacked glasses with gate shall be removed if any
- 4) Check vibration, sound, odor and heat of equipment

② Monthly Check

- 1) Reading of differences water level between measuring staff gauge and control panel indicator
- 2) Reading of gate opening indicator and opening speed.
- 3) Slack and damage of wire rope of gate hoisting device.
- 4) Deterioration of water stop rubber of gates.
- 5) Deterioration of concrete by testing hammer.
- 6) Electric leakage
- 7) Oiling device
- 8) Slack of nut and bolt.

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③ Annual Check

- 1) Wearing, crack, depression and piping etc of regulator body, base slab, canal bed protection shall be checked visually or surveyed when water level is low in maintenance season (January) of Bahr Yusef Irrigation Canal
- 2) Damage with canal slope protection and bed protection block.
- 3) Leakage at gate guide flame

④ The Components of Renewal and Repair for a Long Term

Main Renewal and Repair of a Long Term

Renewal and repair items	Year
Repaint of gate	10
Overhaul of hoist motor	10
Renewal of power panel	10
Supplementation of record sheets	10
Instruments (indicator, lamp, button, electric wire)	5

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資料 6. 基本設計概要表

<p>1. 協力対象事業名</p> <p>エジプト・アラブ共和国 パハル・ヨセフ灌漑用水路サコーラ堰改修計画</p>
<p>2. 我が国が援助することの必要性・妥当性</p> <p>(1) 我が国が援助することの必要性・妥当性</p> <p>(イ) 我が国との関係が良好であり、とりわけ経済・技術協力の分野において緊密であること</p> <p>(ロ) 「エ」国は、中近東・アフリカ地域の大国であり、世界の海上輸送の要衝であるスエズ運河を要し、地域の安定全般に関わり得ること</p> <p>(ハ) イスラム世界の主要メンバーとして発言力を有しており、西側社会の利益にも合致した穏健な外交政策は、中近東諸国から我が国への安定した石油供給を間接的に支える要因ともなっていること</p> <p>(ニ) 政治的安定を維持しつつ、中東和平プロセスをはじめ中近東地域の平和と安定の達成に向け重要な役割を果たしていること</p> <p>(ホ) 市場指向型経済に向けた努力が顕著で、民主化、人権、報道の自由の分野で改善されるべき点はあるものの、ODA 大綱上原則の観点から総じて望ましい方向に向かっていること</p> <p>(ヘ) 高い人口増加率、貧困・失業者増大等の問題を抱えており、援助需要が大きいこと</p> <p>等の理由に基づき、我が国は「エ」国に対して積極的に援助を実施している。また、「エ」国における開発の現状と課題、開発計画等に関する調査・研究ならびに国別援助計画等をふまえ、①農業生産の拡大、②教育の充実・人材育成、③経済基盤の整備・各種産業の振興、④保健・医療、⑤環境改善・保全および公衆衛生の改善の5項目を援助の重点分野としている。</p> <p>(2) 当該プロジェクトを実施することの必要性・妥当性</p> <p>「エ」国では、主食である小麦の自給率が約50%に留まり、その多くを輸入に依存している。また、「エ」国の総人口は約6,900万人(2001年)であるが、過去10年間で約1,200万人増加しており、今後も同水準で増加すると予測されている。したがって、自給率の向上、人口増加に見合う食糧増産が急務となっているが、年間降雨量が5mm程度であるなかでのナイル協定による555億m³の年間利用可能水量と全国土面積の約4%という耕地可能面積が、厳しい制約条件となっている。</p> <p>こうした背景から、「エ」国は、農業分野における食糧の安定供給を主眼とする「第4次経済社会開発5カ年計画(1997/98～2001/02)」を1997年に策定した。同計画の中では、既存耕地の作付け率の向上と単位収量の増加を図る垂直的拡大農業政策が掲げられ、なかでも、灌漑システムにおける配水計画、水利施設における取水計画にかかる総合的水管理を行い、水利用効率を高め、圃場レベルに安定した必要水量を供給することが重要な施策とされている。</p> <p>上述の施策を可能とするため、水資源灌漑省は1800年代後半から1900年代初頭に建設されたナイル川の調節堰や取水堰に対する改修や更新を段階的に行っている。しかし、すべての各幹・支線水路の改修には至らず、依然として建設後100年以上経過した漏水等の問題を抱えた取水施設が広く利用されており、垂直的拡大農業政策の大きな障害となっている。</p> <p>パハル・ヨセフ灌漑用水路への取水量はナイル協定水量の約8%に相当する45億トン/年であり、その総灌漑面積は「エ」国全耕地面積の11%を占める。このように、同用水路は「エ」国農業の重要な農業基幹施設であるが、サコーラ堰に代表される各支線水路への取水堰が老朽化しているため、圃場への安定した水供給が達成されず、農業生産性への影響が懸念されている。サコーラ堰が対象とする灌漑面積は約34,700haに及ぶため、同堰を改修し、水の安定供給を実現することは、エジプト国の農業発展に大きく寄与するものと思われる。</p> <p>なお、「エ」国は、ナイル川に既設する調節堰や取水堰などの大規模堰の改修についてはフランス、</p>

イタリア、ドイツなどヨーロッパ諸国へ支援を要請し、調査や堰改修事業を行ってきた。一方、幹線水路に付帯する施設の改修については、我が国に対して支援を要請している。我が国はこの要請に応え、1992年にはバハル・ヨセフ灌漑用水路全体の改修計画に係る開発調査を実施し、その結果にもとづき、1997年にはラフーン堰が、続いてその上流に位置するマゾーラ堰が2002年に改修された。従って、本プロジェクトは改修済みであるラフーン堰及びマゾーラ堰と整合性のある事業として期待される。

3. 事業の目的等

バハル・ヨセフ灌漑用水路に位置するサコーラ堰を更新するとともに水位・流量調節が容易なオーバーフロータイプのゲートを導入することにより、適正な水管理を実践し、対象受益地への灌漑用水の安定供給を行うことを目的としている。

4. 事業の内容

(1) 対象地域

「エ」国ミニア県およびベニスエフ県におけるナイル川を水源とするバハル・ヨセフ灌漑用水路に付帯する既設サコーラ堰周辺地域

(2) アウトプット

- 既設サコーラ堰本体が更新される。
- 主ゲートが電動式オーバーフロータイプに更新される。
- 管理棟が建設される。
- 併設橋が改修、改善される。

(3) インプット

【日本側】

- 既設サコーラ堰本体の更新
- 主ゲートの電動式オーバーフロータイプへの更新
- 管理棟の建設
- 併設橋の改修、改善
- 堰ゲートのO/Mおよび流量管理移行に資する技術指導の実施

【相手国側】

- 工事期間中の通水管理に必要な既設サコーラ堰ゲートの修理(4門)および管理
- 工事現場敷地外の仮設ヤード3,000m²の確保・整地
- 本設部分の内陸輸送費の負担
- 本設用受電設備の設置

(4) 総事業費

概算事業費 23.82 億円（日本側 21.11 億円、エジプト国側 2.71 億円）

(5) スケジュール

【日本側負担による資機材調達】

詳細設計期間を含め、約 30 ヶ月の工期を予定

【相手国側負担による施設建設】

約 3 ヶ月を予定

(6) 実施体制

実施機関：灌漑総局(ID)、灌漑改善局(IIS)、ミニア地方灌漑改善局(IIP)

運営機関：灌漑局(IS)、西ミニア地方灌漑局(IDir.)

監督機関：水資源灌漑省(MWRI)

5. プロジェクトの成果					
(1) プロジェクトの裨益対象の範囲および規模					
(イ) 裨益範囲： 「エ」国ミニア県およびベニスエフ県におけるナイル川を水源とするバハル・ヨセフ灌漑水路に付帯する既設サコーラ堰周辺地域					
(ロ) 直接受益者： 既設サコーラ堰受益地農家（既住者）約 536 千人					
(2) 事業の目的（プロジェクトの目標）達成を示す成果指標					
(イ) 対象地域の内、重力灌漑対象地区(50,000 フェダン：21,000 ha)の支線水路への灌漑必要取水量の不足が解消される。					
灌漑取水量の増加	2002 年			2007 年	指 標
	夏作(5月～9月)	冬作(10月～4月)	合計		
総必要用水量(千 m ³)	120,175	78,105	198,280	198,280	灌漑取水量の増加 プロジェクト実施 後 4.6 %の増加
実取水量 (千 m ³)	114,536	74,588	189,124	198,280 (4.6%増)	
不足量 (千 m ³)	5,639 (4.7%)	3,517 (4.5%)	9,156	0	
(3) その他の成果指標					
(イ) 対象地域の内、重力灌漑対象地区(50,000 フェダン)の単位収量が向上し、作物生産量が増加する。					
1) 重力灌漑地区の単位収量 および作物生産量の増加	2002 年		2007 年		
	単収 (ton/ha)	生産量 (ton)	単収 (ton/ha)	生産量 (ton)	収量増 (ton) (%)
・小麦	7.23	60,750	7.64	64,168	3,418 (6%増)
・綿花	1.48	7,478	1.51	7,662	184 (2%増)
・メイズ	7.74	94,603	8.15	99,649	5,046 (5%増)
・ごま	1.43	563	1.58	623	60 (11%増)
・その他 (豆類、玉葱、ポテト、野菜等)	—	361,954	—	388,891	26,937 (2-11%増)
重力灌漑地区全体	—	525,348	—	560,993	35,645 (7%増)
(ロ) 対象地域の総農業生産額が増加する。					
		2003 年（実施前）	2007 年（実施後）		
総農業生産額		293 百万 LE	303 百万 LE(約 3.6 %増)		
6. 外部要因リスク					
(イ) サコーラ堰灌漑施設の運営・維持管理のための人材・予算が持続的に確保される。					
(ロ) 農産物価格の大幅な下落がなく、病害が発生しない。					
7. 今後の評価計画					
(1) 事後評価に用いる成果指標					
(イ) 重力灌漑地区の灌漑水量					
(2) 評価のタイミング					
2007 年以降					

資料 7. 入手資料リスト

番号	名 称	形態 図書・ビデオ 地図・写真等	オリジナル ・コピー	発行機関	発行年
1	Reinforced Concrete Design Handbook	図書	オリジナル	By Prof. Dr. Shaker El-Behairy Faculty of Engineering Ain Shams University Sixth Edition	2002 年
2	Design Textbooks in Civil Engineering: Volume I IRRIGATION ENGINEERING: CANAL AND BARRAGES	図書	コピー	By Serge Leliavsky Ph. D., M.I.C.E., F. Am. Soc. C.E.	1983 年
3	Egyptian Code for Loading in Construction Building, Roadway Bridges & Railway	図書	コピー	Ministry of Housing & Utilities Eng. Mohamed Salah El-Deen HassabAlla	1993/12/28
4	Problem based Design Textbooks in Civil Engineering Regulators	図書	コピー	Ph. D, Nazeih Assaad Younan Professor, Civil Engineering Dep. University of Alexandria	1986 年
5	Structural Brick Work	図書	オリジナル	Arnoid W. Hendry B., Sc., Ph.D., D.Sc., F.I.C.E., F.I.Struct.E., F.R.S.E. Professor of Civil Engineering, University of Edinburgh	1981 年
6	The Income Tax Low	図書	オリジナル	The Middle of East Library for Economic Services	不明
7	Irrigation Systems: Preparing for the 21 st Century	図書	オリジナル	Ministry of Public Works and Water Resources	不明
8	Investing in Egypt	図書	オリジナル	Ministry of Foreign Trade	2003 年
9	Implementation Procedure for Irrigation Law	図書	コピー	Ministry of Public Works and Water Resources	1995 年
10	Main Features of the Water Policy	図書	コピー	Ministry of Water Resources	2000 年
11	National Water Resources Plan for Egypt	図書	コピー	Ministry of Public Works and Water Resources	1999 年

12	Manshaat Niazy Bridge ボーリング柱状図 (BH 1、BH2)	柱状図	コピー	Nubaria Company	1995 年
13	Beni Kald Bridge ボーリング柱状図 (BH1、BH2)	柱状図のみ	コピー	Gorge Halem	不明
14	Land Map around Sakoula S = 1/2500	地図	コピー	Irrigation Department Minia Directorate	1906 年
15	Land Map around Sakoula S = 1/2500	地図	コピー	Irrigation Department Minia Directorate	不明
16	Brochure for New ISNA Barrage	パンフレット	コピー	Reservoir and Grand Barrage Sector	不明
17	Brochure for New ISNA, Additional Navigation Lock	パンフレット	コピー	Reservoir and Grand Barrage Sector	不明
18	Brochure for New NAGAHAMMADI Barrage	パンフレット	オリジナル	Reservoir and Grand Barrage Sector	不明
19	Brochure for MONOUFY and TAFIKY Head Regulator	パンフレット	オリジナル	Reservoir and Grand Barrage Sector	不明
20	Brochure for New ISMAILIA Head Regulator	パンフレット	コピー	Reservoir and Grand Barrage Sector	不明
21	List of Nile Grand Barrages, Regulators and Navigation Canals	リスト	コピー	Reservoir and Grand Barrage Sector	不明
22	Drawings and Structure calculation for Minia regulator	図面	コピー	IIP、Minia Directorate	不明
23	Egypt 2003	図書	オリジナル	Ministry of Foreign Trade	2003 年
24	New Naga Hammadi Barrage & Hydropower Plant PRE-CONSTRUCTION BASELINE ATLAS	図書	コピー	Project Implementation Unit MWRI (RGS)	May 2002
25	Naga Hammadi Barrage Development FEASIBILITY STUDY FINAL REPORT VOLUME 7.1 ENVIRONMENTAL IMPACT ASSESSMENT MAIN REPORT	図書	コピー	Naga Hammadi Barrage Development Consultants	August 1997
26	Naga Hammadi Barrage Development FEASIBILITY STUDY FINAL REPORT VOLUME 7.2 ENVIRONMENTAL IMPACT ASSESSMENT ANNEXES	図書	コピー	Naga Hammadi Barrage Development Consultants	August 1997
27	MONTHLY NORMAL FOR SOME METEOROLOGICAL ELEMENT, STATION: EL MINIA	プリント	コピー	EGYPTIAN METEOROLOGICAL AUTHORITY	19 March, 2003
28	CLIMATOLOGICAL AVERAGES OF SOME ELEMENTS, OCCURRENCE OF SOME PHENOMENA, AND WIND ROSE FOR STATION MINIA 387 PERIOD: 1973 - 2001	プリント	コピー	EGYPTIAN METEOROLOGICAL AUTHORITY	