

**BASIC DESIGN STUDY REPORT  
ON  
THE PROJECT  
FOR  
SUPPLYING MEDICAL EQUIPMENT  
FOR  
GOLAN HOSPITAL  
IN  
SYRIAN ARAB REPUBLIC**

**OCTORBER, 2003**

**JAPAN INTERNATIONAL COOPORATION AGENCY  
INTERNATIONAL TECHNO CENTER CO., LTD.  
INTERNATIONAL TOTAL ENGINEERING CORPORATION**

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## **PREFACE**

In response to a request from the Government of Syrian Arab Republic, the Government of Japan decided to conduct a basic design study on the Project for Supplying Medical Equipment for Golan Hospital and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent to Syria a study team from May 22 to June 6, 2003.

The team held discussions with the officials concerned of the Government of Syria, and conducted a field survey at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Syria in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Syrian Arab Republic for their close cooperation extended to the teams.

October, 2003

Kunimitsu Yoshinaga  
Vice President  
Japan International Cooperation Agency

October, 2003

### **Letter of Transmittal**

We are pleased to submit to you the basic design report on the Project for Supplying Medical Equipment for Golan Hospital in Syrian Arab Republic.

International Techno Center Co., Ltd., and ITEC Co., Ltd. under a contract to JICA, conducted a study during the period from May 22, 2003 to October 30, 2003.

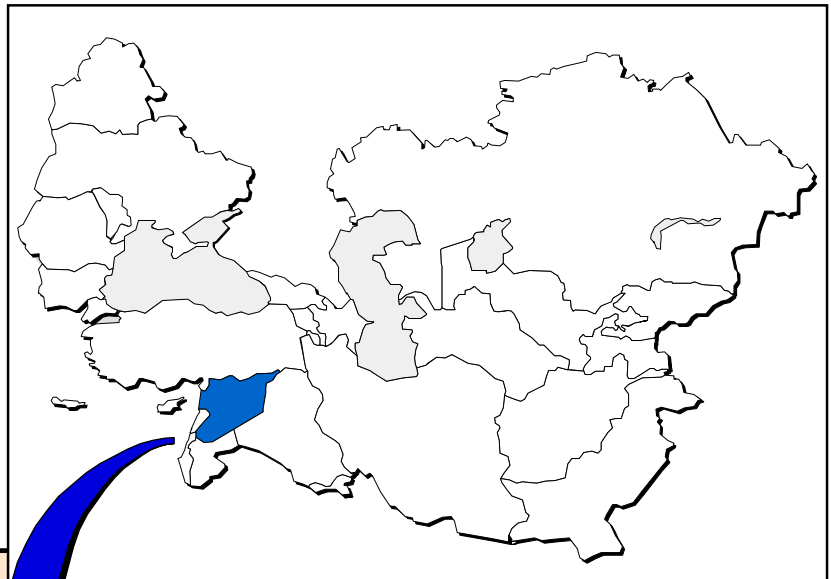
In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Syria and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

Finally, we hope that this report will contribute to further promotion of the project.

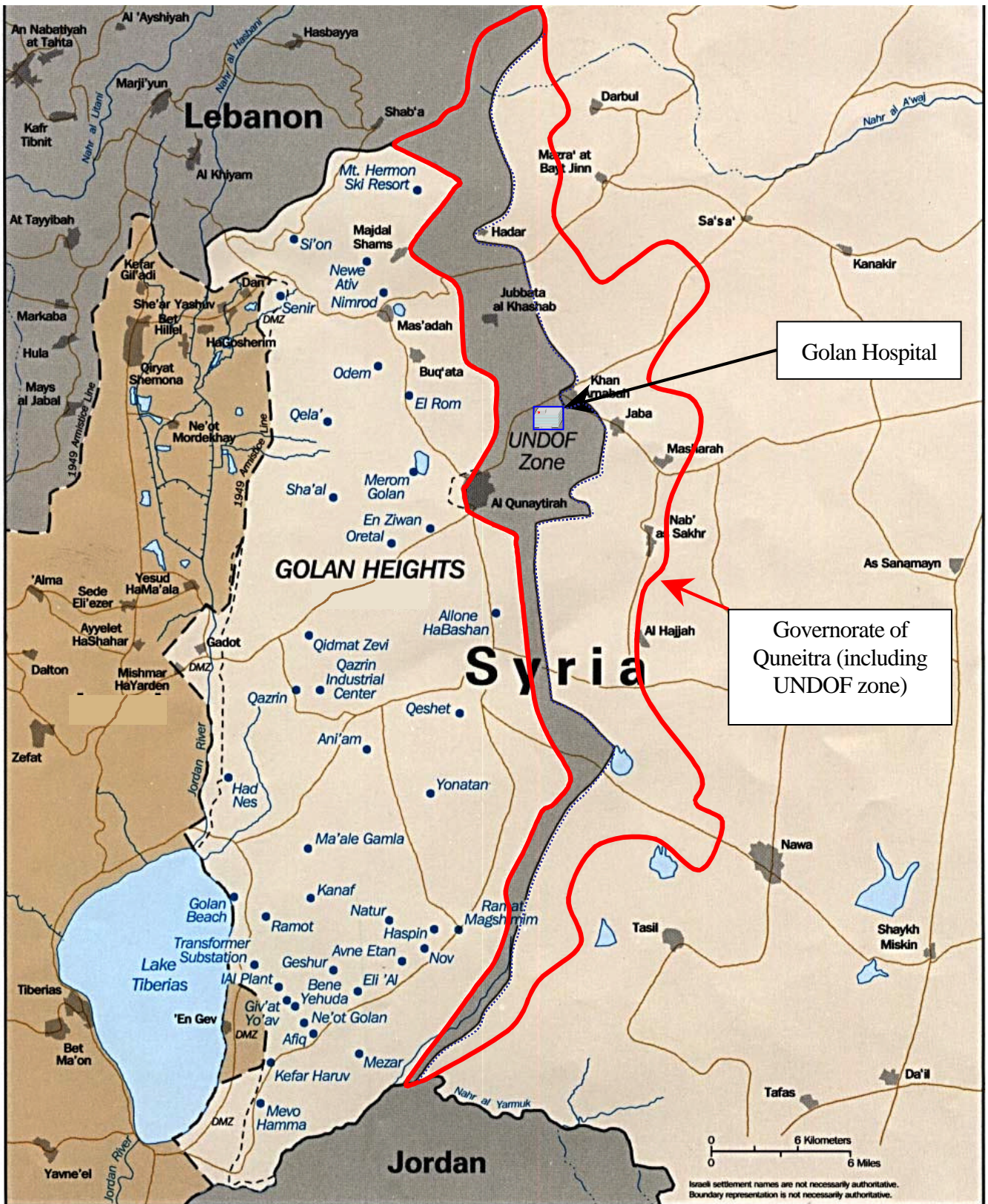
Very truly yours,

Shigetaka Tojo  
Project Manager,  
Basic design study team on the Project for  
Supplying Medical Equipment for Golan Hospital  
in Syrian Arab Republic  
International Techno Center Co., Ltd.

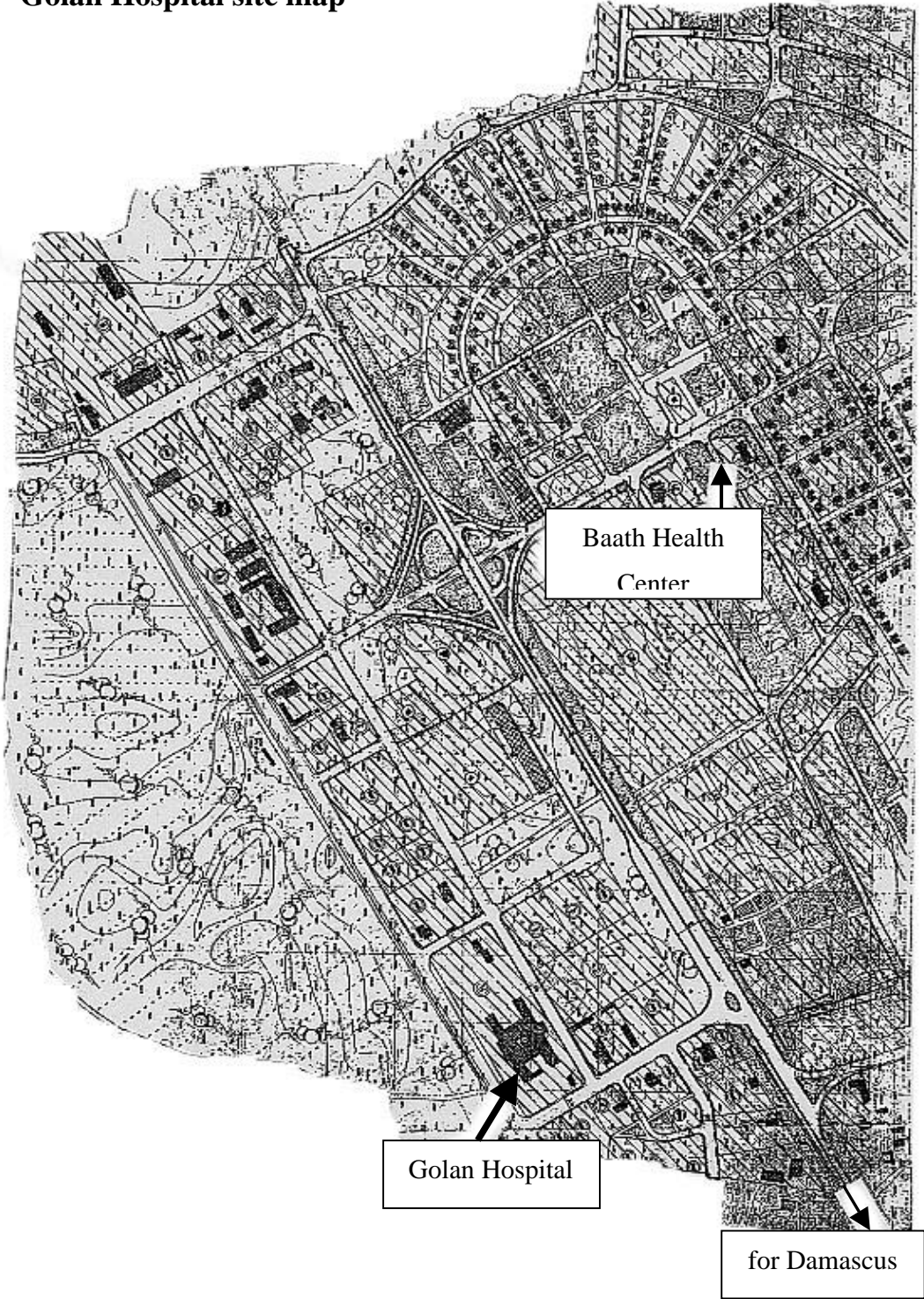
# Project Site Map



# Governorate of Quneitra



**Golan Hospital site map**



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## Abbreviations

BS	British Standard
CCD	Charge Coupled Device
CCU	Coronary Care Unit
DIN	Deutsches Institute fur Normung
E/N	Exchange of Note
EIB	European Investment Bank
EU	European Union
FDA	Food and Drug Administration
GDP	Gross Domestic Product
GTZ	Deutsches Gesellschaft fur Technische Zusammenarbeit
ICU	Intensive Care Unit
JIS	Japan Industrial Standards
LCD	liquid Crystal Display
MRI	Magnetic Resonance Imaging
SYP	Syrian Pound
UNDOF	United Nations Disengagement Observer Force
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children Emergency Fund
WHO	World Health Organization

Summary

## Summary

The Ninth Five-Year Plan for National Economic and Social Development (from 2001 to 2005) by the Syrian Arab Republic focuses on rectification of regional inequality between the people in urban and local areas in having social services. In the health sector, to accomplish improvement and enhancement of the quality of health services for general hospitals (secondary institution) and special hospitals (tertiary institution), the Plan concentrates on opening of 120-bed and 30/60-bed hospitals by the year 2005, procurement of medical equipment for already constructed health centers, reinforcement of medical equipment in existing hospitals and early completion / equipment procurement for the hospitals that are being under construction.

Statistics of the Ministry of Health of Syria indicate that the Quneitra province, which has no hospital (0 bed), is the worst of all the provinces in terms of the size of population per bed, then Edlib province (1,719 people), Daraa province (1,483), Hassake province (1,391), and so on, while Damascus is the most privileged of all provinces with 344 people. The statistics also says that the national average of size of population per bed is 845, which is 3 times larger than that of Turkey (285 people) and 12 times that of Japan (71), posing one of the most important and urgent challenges facing Syria, that is, shortage of bed.

Considering seriousness of shortage of bed and importance of rehabilitation and strengthening of medical facilities, the Government of Syria started hospital construction in 28 areas some 20 years ago including the Golan Hospital, site for this Project. Despite their effort, however, they could open only 6 hospitals by the year 1993. As the remaining construction work for the 22 areas has nearly reached completion just recently, the Ministry of Health selected 18 hospitals and drafted an Eighteen 120-bed hospital Project for procurement of medical equipment, of which the Golan Hospital is a part, in accordance with the Ninth Five-Year Plan for National Economic and Social Development.

The Eighteen 120-bed hospital Project is 297 million dollar worth project. Syrian side has almost finished acquisition of building sites and construction work while facility and equipment preparation (72 million dollar) remains unfinished. On the other hand, procurement of medical equipment (144 million dollar), which can not be covered by their budget, are to be financed by Spain, Italy, the European Investment Bank (EIB) and Japan. The request to Japan focuses on procurement of medical equipment for the Golan hospital.

Responding to this request, the Government of Japan decided to conduct a basic design study and entrusted the study to the Japan International Cooperation Agency (JICA) for the

period of May 22 to June 6, 2003. After examination of the study back in Japan, JICA dispatched a mission for the period of August 23 to September 2, 2003 to explain the draft of basic design of the Requested Japanese Assistance.

The 420-bed Golan Hospital at that time, located in the Quneitra province where two thirds of its area had been occupied by the Israeli Army, had been completely destroyed when the army withdrew from the province. Construction of the new Golan hospital started some 20 years ago in a site different from the destroyed hospital but the construction work is making little progress largely due to financial reason. At present, Quneitra is the only province in the country that has no hospital. Thus it is an earnest wish for the people of the Quneitra province to provide themselves with a hospital with inpatient ward. The study team was informed of change in the name of the new hospital from the Quneitra Hospital to the Golan Hospital during the mission.

The Project targets at opening of the Golan Hospital and improvement of health services rendered to the people of the Quneitra province, in which even a simple surgical operation can not be performed in any medical institution, through procurement of medical equipment funded by the Japan's Grant Aid intended for the Golan Hospital.

The study team, all the information available being considered including Syria's health sector conditions, priority in health policy, etc. examined Quneitra's health conditions, target facilities, position of other donor countries or organizations, etc. Finally the study team, based on the examination, shaped a procurement plan of equipment necessary for activities of the Golan Hospital.

The Requested Japanese Assistance shall fund for procurement of medical equipment necessary for the Golan Hospital as a secondary medical institution and only the hospital in the Quneitra province, and a kind of technical transfer called “Soft component” by consultant targeting at establishment of a maintenance system of medical equipment.

Outline of medical equipment to be procured is as follows.

Group	Main equipment
X-ray equipment group	X-ray unit (mobile), X-ray unit (C-arm), X-ray unit (fluoroscopy), CT scanner, X-ray unit (general), X-ray unit (mammography)
General image equipment	Ultrasonic scanner (color doppler), Ultrasonic scanner (general), Ultrasonic scanner (Obstetric/Gynecology)
Cardiac equipment group	Defibrillator/monitor, Central monitoring system for 8 beds, Fetal heart detector (ultrasonic), Pulse oximeter, Patient monitor
Vital function equipment group	Infant incubator (transport), Infant incubator Phototherapy unit

Group	Main equipment
Diagnostic laboratory equipment group	Hematology analyzer automated, Blood gas/Electrolyte analyzer, Spectrophotometer, Microtome (freeing)
General laboratory equipment group	Microscope (binocular), Drying oven, Refrigerator (blood bank), ELISA reader
Ophthalmology equipment group	Examination/treatment chair (ophthalmic), Perimeter (manual,) Refractor (ophthalmologic)
ENT equipment group	Chair examination/treatment ENT, Microscope ear
General surgical equipment group	Operation table (gynecology), Operation table (general), Operation table with traction unit orthopedic
Special surgical equipment group	Kidney machine (hemodialysis unit)
Endoscope equipment group	Colonoscope, Laparoscope, Cysto-Urethroscope, Gastrointestinal fiberscope, Duodeno fiberscope, Endoscope trolley with monitor, Rectoscope with light source
Anesthesiology group	Anesthesia unit, Ventilator, Ventilator for Neonatal
Sterilizing equipment group	High pressure steam sterilizer, High pressure steam sterilizer table top
Transport group	Ambulance with equipment
Surgical tools group	Operating instrument sets for various applications
Physiotherapy equipment group	Electric traction unit, Hydro bubbler for whole body
General service equipment group	Laundry equipment

CT Scanner, Ultrasonic Scanner and Blood gas/Electrolyte Analyzer shall be accompanied with an Uninterruptible Power System (UPS) while High Pressure Steam Sterilizer and Hemodialysis Unit with water treatment apparatus.

Implementation of the Requested Japanese Assistance will require a period of 13 months and an estimated project cost of 452 million Japanese Yen.

Implementation of the Requested Japanese Assistance will cause increase in equipment maintenance cost by as much as 10% of the hospital budget of fiscal 2003. The entire operation cost of the hospital including the costs of personnel, lighting and fuel, drugs, etc. will be 1.4 times as large as the hospital's present budget of fiscal 2003. The operation cost borne by the Golan Hospital will be as much as 0.02% of the total expenditure of the Ministry of Health of fiscal 2003, which can reasonably be shared by the recipient side.

Implementation of the Requested Japanese Assistance shall bring about the following outcomes.

[Direct Effects]

Provision of health services will be made possible by the Golan Hospital as a secondary medical institution with inpatient ward intended to the 112 thousand people of the Quneitra province.

[Indirect Effects]

- Referral system of the Quneitra province to be improved

Presently the patients sent from the primary medical institutions such as health center or emergency center are referred to tertiary medical institutions in Damascus City or other urban areas, without being cared by any secondary medical institution. When the Golan Hospital starts their operation, secondary medical care will be given for those patients and the referral system of the Quneitra province will be improved properly.

- Workload of other medical institutions to be reduced

The Golan Hospital being in service, the workload of other medical institutions in Damascus City or other areas which used to accept patients from primary medical institutions of the Quneitra province will be reduced as a result of expected acceptance of patients by the Golan Hospital.

For implementation of the Project will be expected to produce the positive effects mentioned above, and for no major difficulties in operation and maintenance will be foreseen, assistance by the Japan's Grant Aid for the Project will be acceptable and appropriate.

To secure proper and smooth implementation of the project and assure opening of the Golan Hospital by 2005, the following conditions must be arranged by the Syrian side.

[Human Resource]

341 persons approved by the Ministry of Health must be secured by August of 2004 and allocated properly to each section of the hospital by the end of 2004. And 28 well-experienced doctors that are supposed to be employed in the Golan Hospital must participate in preparatory work for the hospital opening at the early stage of 2004.

[Preparatory Work for the Hospital Opening]

Mutual understanding and cooperation among the hospital staff are very important. For a new hospital, preparation work toward opening of the hospital can not be too enough to avoid confusion on the opening day. The work should be intended to smooth acceptance of patients and staff should rehearse the procedure of acceptance at each section prior to the opening.

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## Chapter 1 Background of the Project