

(3) 下水道整備の現状

稼働中の下水処理場はない。ディエルゾール市の下水処理場は住宅建設省の予算で GCEC により調査設計済みである。ただし、建設の目処は立っていない。ディエルゾール県では、人口が多く生活排水量が多い 3 つの都市 (Dier-al-zor、Al Mayadeen、Abukamal) の下水道整備を優先したい考えである。

4-5-7 ハサケ県

(1) 地域概況

ユーフラテス川の支流域 (ハボール川流域) に位置し、トルコとイラクに国境を接している。ハサケ県には 5 つの市 (City)、14 の中都市 (Municipality)、120 の小都市 (Small-towns) と 4,000 ~ 5,000 の村落がある。5 つの市はハサケ市を除いてすべてトルコ国境沿いにある。県人口は 110 万人。主要産業は農業で、今のところ深刻な工場排水はない。トルコ国境沿いのカミシリ (Qamishli) 市付近には油田地帯がある。

(2) 下水道事業体

上水道公社内に下水道部 (Department of Sewerage : 20 ~ 25 名) があり、ラス・アライン (Ras Alain) 下水処理場の維持管理を行っている。新規の下水道整備事業は、住宅建設省と県の技術部が管轄しており、上下水道公社は関与していない。上下水道公社の総従業員数は 1,400 名。

(3) 下水道整備の現状

トルコ国境のラス・アライン (Ras Alain) 市の下水処理場が、現在稼働している。3 万 5,000 人を対象として建設されたが、人口増加により既に拡張が必要となっている。地下水を水道水源としており早期の拡張を要望している。

一方、ハサケ市 (20 万人) の下水処理場は住宅建設省の予算で、既に GCEC により調査設計済みである。ただし、建設の目処は立っていない。GCEC の設計に不安を感じており、JICA 本格調査でのチェックを要望している。

また、ハサケ県では地下水の汚染が懸念されている。トルコ国境沿いの地下水を水源とする 4 市 (Qamishli : 40 万人、Malkiyeh : 2 万 5,000 人、Aamuda : 2 万人、Dirbasiyeh : 1 万 5,000 人) の下水道整備を優先したい考えである。

4-6 他ドナーの援助動向

(1) ドイツ政府

GTZ (ドイツ技術協力公社) は 10 年前から水分野の支援を行っている。新たに経済技術省地質研究所 (BGR) と the German Development Service (DED) の協力により GTZ は、2006 年から始まる 5 年間の新規プログラムとして、水セクターの組織制度支援に関する包括的な技術協力プログラム「Institutional Support to the Syrian Water Sector」を実施する計画である。最終的には 10 年間継続するものとしている。本プログラムは、水セクターの関係機関が統合的に水資源を管理し、多様な需要者の水ニーズに持続可能で合理的かつ効率的な方法で対応することを目標として、国家企画庁をメイン C/P として、各関係省庁・機関が連携して

プロジェクトを実施することになっている。関係する省庁・機関は以下のとおり。

- ① 国家企画庁（State Planning Commission：SPC）
- ② 住宅建設省（Ministry of Housing and Construction：MHC）
- ③ 灌漑省（Ministry of Irrigation：MOI）
- ④ 地方行政・環境省（Ministry of Local Administration and Environment：MOLAE）
- ⑤ エンジニアリング建築家組合（Syrian Engineers and Architects）
- ⑥ アレポ上下水道公社
- ⑦ ダマスカスルーラル県上下水道公社

2005年7月時点の評価調査団（Appraisal Mission）での合意書では、技術協力プロジェクトとして、合計870M/M（GTZ/DED/BGR and Consultants: 412M/M、Local and regional experts and local assistance: 458M/M）のコンサルティングサービス、機材供与、運営費の負担を約束しており、大規模なプログラムとなっている。

特に、上下水道分野は多くの問題を抱えているとして、住宅建設省へは当面3年間で以下の支援を行うことになっている。

- ① 上下水道公社の管理フレームワークの確立：料金体系、コストリカバリー、財務運営、資産管理等、公社の経営・管理に関するフレームワークができておらず、実際のコストをだれも知らず健全な事業の実施ができない状況にあるため、当面3年かけてコストリカバリーの現状分析を行う。
- ② 国家レベルの上下水道事業の法制度・組織のリフォーム
- ③ 下水道5か年投資計画（2006～2010年）実施のための技術支援と住宅建設省職員へのトレーニング
- ④ アレポ上下水道公社とダマスカスルーラル県上下水道公社のキャパシティー・ビルディング

2006年1月から、ドイツのコンサルタントチームが現地でプロジェクトを開始する予定である。

(2) 地中海陸上起因汚染防止プログラム

地中海陸上起因汚染防止議定書に基づいて、EUの支援によりプログラムが実施されている。2006～2010年の投資計画は表4-7のようになっている。下水道関連プログラムとして、ラタキア市（A2）、バニアス市（A3、A4）、タルトゥース市（A7）、ジャブラ市（B1）の4か所の下水処理場と下水道システムの新設・リハビリが含まれている。全プロジェクトで内外貨合わせて総額約240億円の投資が必要であり、そのうち上記の5つの下水道関連プログラムで約100億円の投資が必要となっている。

表 4 - 7 2006 ~ 2010 年地中海陸上起因汚染防止プログラム投資計画

	Project	Million SP	Million \$
A.	First Priority Projects:		
1.	Re-qualification of Bassa landfill compound in Lattakia	130	2.45
2.	Sewerage system of Lattakia	1,367	25.79
3.	Sewerage system of Banias (Canalization + Pump stations)	567	10.70
4.	Sewage treatment plant of Banias (3 stages)	61	1.15
5.	Industrial water treatment plant (Oil refinery of Banias)	300	5.66
6.	The shift from oil to natural gas in Banias thermal station	2,650	50.00
7.	Sewage treatment plant in Tartous	300	5.66
8.	Landfill compound of Tartous in Hiddle valley	125	2.36
9.	Air filters of Tartous cement plant	62	1.17
B.	Second Priority Projects		
1.	Sewage treatment plant of Jable and rehabilitation of sewerage system	150	2.83
2.	Sewage water project of Fawwar spring	70	1.32
	Total	5,782 (121 億円)	109 (125 億円)

注：1.0 SP = 2.1 円、1.0 \$ = 115 円で換算

上記のプログラムの外貨分はプロジェクトごとのローンであり、その金利だけを EU が無償援助するものである。したがって、シリア側は借入金の全額について返済義務がある。ラタキア市及びタルトゥース市の下水処理場の建設は、既にフランスの企業 (OTV 社) と調印したにもかかわらず、着工に至っていないのは、返済余力、コストリカバリーの問題が関係しているものと推測される。

(3) UNRWA 難民キャンプ及び周辺集落上下水道整備プロジェクト

本プロジェクトは、ダマスカスルーラル南西部の 2 か所の難民キャンプ (Khan Dannoun、Khan Eshieh) 並びに周辺村落を含む、3 万 2,000ha の総合的な上下水道整備計画である。これは、難民キャンプの整備だけでは周辺村落住民の理解が得られないため、周辺村落を含む総合的な整備計画となった背景がある。

2005 年の人口は 27 万 5,000 人で、2025 年には 48 万人を予測している。図 4 - 7 にプロジェクト位置図を示す。

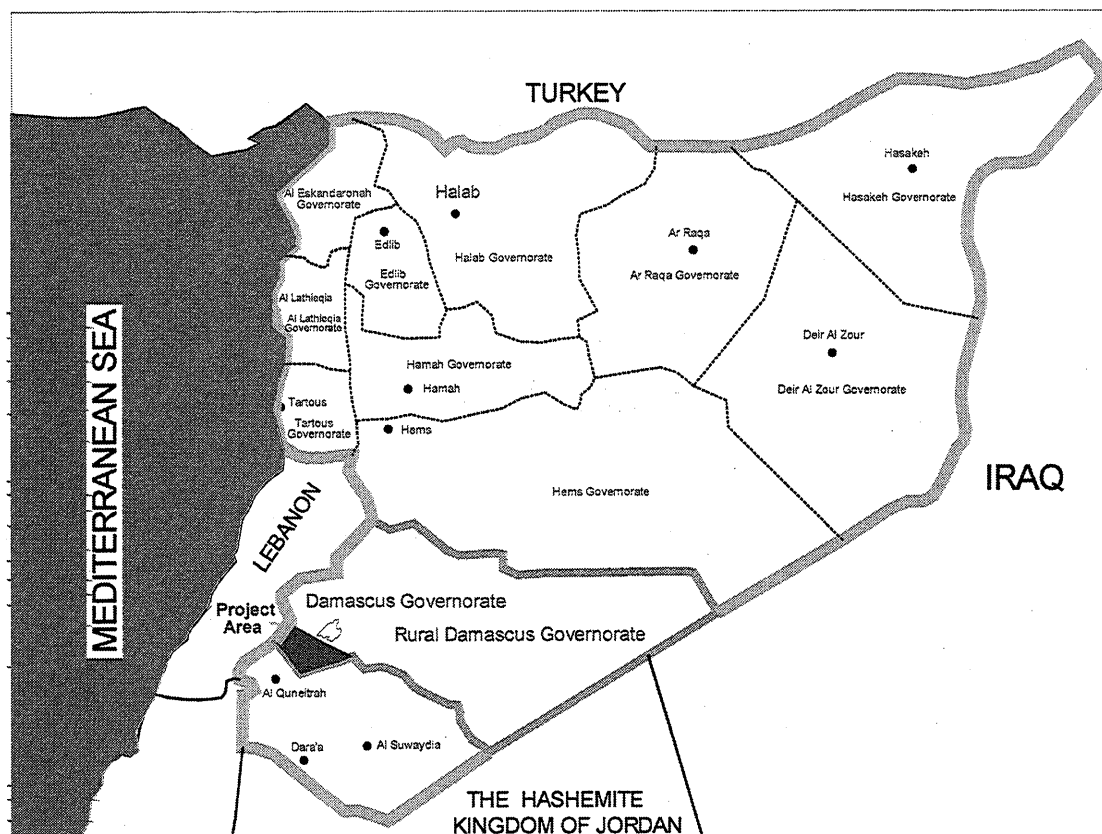


図 4-7 UNRWA 難民キャンプ及び周辺集落上下水道整備プロジェクト

全体の調査設計 F/S と難民キャンプのインフラ整備は、EU の無償援助で UNRWA が実施し、その他の上下水道整備は、EIB ローン (3,000 万ユーロ) とシリア側の負担 (3,000 万ユーロ) で実施することになっている。2008 年完成を目標に実施中であるが、シリア側負担分工事の遅れから完成の遅れが懸念されている。

下水処理場は 2 か所計画されている。処理方式は長時間曝気法で、処理容量は 1 万 5,000 m³ / 日と 1 万 3,000 m³ / 日。調査設計はヨルダンの英国系コンサルタント会社 (モンゴメリ・ワトソン社) が行っている。EIB は下水処理場の建設を、DBO (Design, Built and Operation) で実施することを融資条件として提示している。また、シリア側による上下水道管網のリハビリの実施 (2,500 万ユーロ) を融資の必須条件としている。本年末までに EIB と Loan Agreement を締結することになっているが、上記の融資条件がクリアできるかどうか不透明な状況であり、さらに政治的情勢から遅れる可能性もある。

(4) 世界銀行 (The World Bank : WB)

1980 年代後半から 1990 年代前半にかけて、ホムス、ハマ、アレッポの 3 つの下水処理場建設に融資を行っている。その後、返済不履行問題があり一時中断していた。

ダマスカスルーラルの Barada & Ghouta Gharbiyah 地区の下水道整備計画の F/S (「Wastewater Strategic Planning and Priority Investment Study in Barada & Ghouta Gharbiyah」) は、世界銀行の無償援助で行われ、2003 年 2 月に最終報告書が提出されている。計画の内容は、Barada 地区の下水はダマスカス下水処理場に接続し、Ghouta Gharbiyah 地区に 2 か所の下水処理場を建設するものである。図 4-8 にプロジェクト位置図を示す。

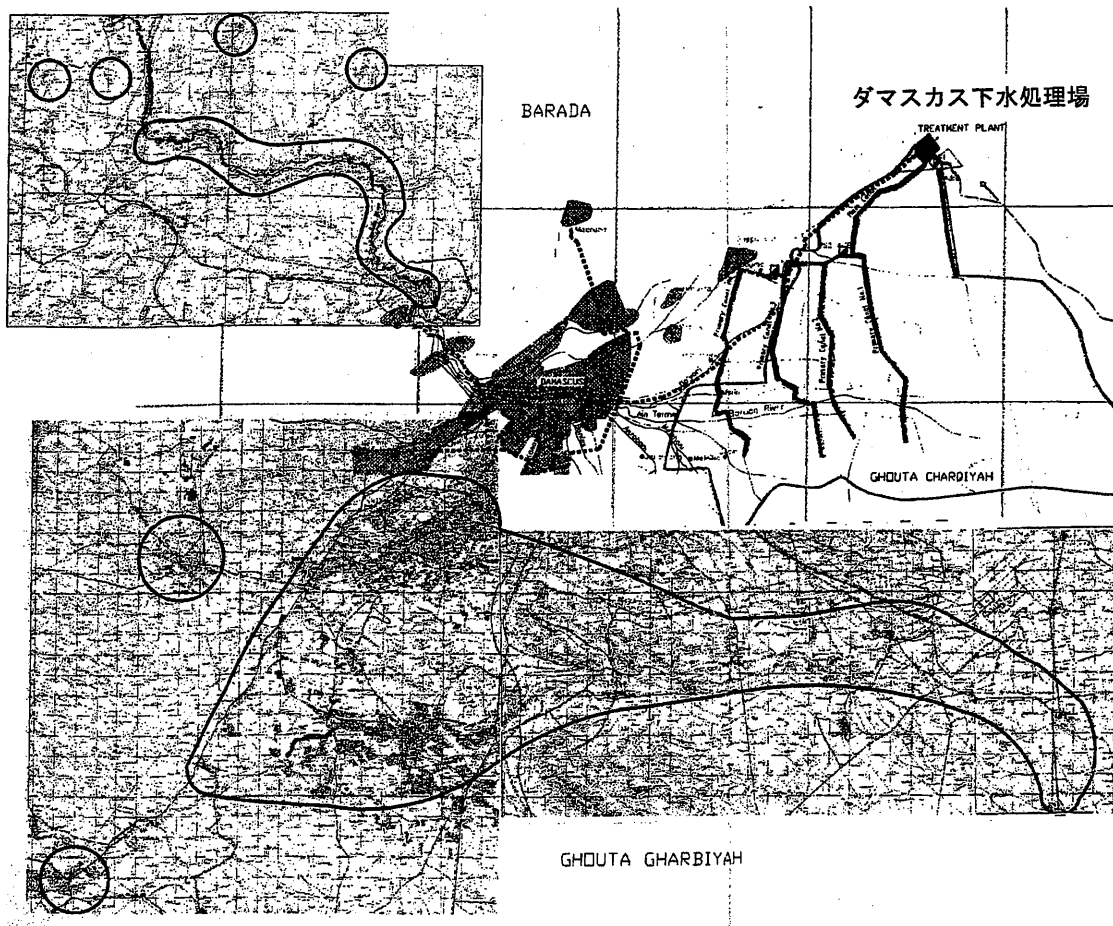


図 4 - 8 Barada & Ghouta Gharbiyah プロジェクト位置図

Barada 地区は 20 町村のうち、優先パッケージとして 15 町村が選定されている。2003 年時点の人口は 6 万 5,000 人で、2025 年には 12 万 5,000 人を予測している。Ghouta Gharbiyah 地区は 27 町村のうち、優先パッケージとして 9 町村が選定されている。2003 年時点の人口は 21 万人で、2025 年には 49 万 1,000 人を予測している。事業費は Barada 地区が 500 万ドル、Ghouta Gharbiyah 地区が 3,900 万ドルとしているが、その後世界銀行との融資の話は進展せず、実施の目処が立っていない。

GTZ でのヒアリングによれば、下水道料金の導入、コストリカバリーによる下水道事業体の持続可能な財務運営、維持管理の制度構築が融資条件となっているようである。

(5) 欧州投資銀行 (European Investment Bank : EIB)

上記 (3) の「UNRWA 難民キャンプ及び周辺集落上下水道整備プロジェクト」への融資 (本事前調査時点では Loan Agreement は未締結) に加え、ダマスカスルーラルの Al Zabadani 下水処理場建設計画の F/S を無償援助している。現在、フィンランドのコンサルタントが F/S を実施中である。F/S の結果がよければ融資の意向を示唆しているが、EIB は民活による DBO (Design, Built and Operation) を主張しており、融資が実施されるかどうかは不透明な状況である。

(6) 欧州連合 (European Union : EU)

上記 (2) の「地中海陸上起因汚染防止プログラム」で主導的な役割を果たしており、融資金利の無償援助を行っている。また、上記 (3) の「UNRWA 難民キャンプ及び周辺集落上下水道整備プロジェクト」においても無償援助を行っている。また、現在「Municipal Administration Modernization Project」(プロジェクト期間：2004年11月から5年間)を実施しており、その1つのコンポーネントとして、Stockholderと一緒にRegional Planの策定を行っている。

本格調査においてM/P策定対象となっている県・市がその中に含まれており、下水道関連の業務として以下のような内容があがっている。これらは、上記 (1) のドイツ政府の「Institutional Support to the Syrian Water Sector」と、上記 (2) の「地中海陸上起因汚染防止プログラム」と相互補完的な業務内容となっている。

- ① ダマスカスルーラル県：Technical and management training of staff of wastewater companies. Assisting in implementation of existing investment program of wastewater treatment and solid waste management, donor search etc
- ② ラタキア市：Securing the implementation of the wastewater treatment plants
- ③ ディエルゾール市：Creation of public institution to maintain the sewerage network and plant
- ④ タルトゥース市：Securing the implementation of the wastewater treatment plants

(7) マレーシア政府

ダマスカス近郊の井戸の水質が悪い地域で、3か所の下水処理場建設計画を開始したところである。全体の調査設計F/Sはマレーシア政府が無償援助で行い、その後1か所の下水処理施設(1,000人規模)の建設も無償援助で行う。残る2か所(5,000～2万5,000人規模)はシリア側が建設する計画である。マレーシア政府が建設する下水処理施設は集中型の下水処理場ではなく、オン・サイト型のセプティック・タンクのようなものを建設する計画となっている。

(8) スペイン

ラッカ市の下水処理場建設を支援することを決定している。スペイン企業に対する設計施工の入札が2005年11月に行われる予定である。入札の内容は、F/Sの見直し、詳細設計、建設までのTurn-key契約となっている。融資機関(政府系あるいは民間投資銀行)、融資条件についての情報を得られなかった。

4-7 下水道の課題

シリアでは、下水道全体について建設から維持管理まで一貫して統括する機関がなく、それぞれの機関が十分な連携をとらずに勝手に事業を実施しており、結果的に土木工事のみの先行、一貫性のない処理法の選定、不適切な運営などの問題が生じている。また、予算も国から与えられるため、その地域の特性、技術・財政レベルなどを考慮した、下水道処理施設を設計するという観点が抜け落ちている。

また、現在稼働している処理場は、小規模下水処理場を除いてすべて外国の援助により建設されたものである。したがって、今後、住宅建設省が設計した下水処理場が次々に稼働し始めると、いろいろな問題が顕在化することが予想されるが、その問題点を住宅建設省が取りまとめて、それを次の設計にフィードバックさせる仕組みづくりがなされていない。

さらに、管渠工事と下水道処理施設工事とが連携しているかどうかについても不明である。管渠の大きさが適正規模なのか、また、排除方式に見合った管径になっているかをチェックするシステムがない。施工方法についても、ディエルゾール市で見た下水管敷設現場では、対象地区の上流に位置する場所に、管径1,500mm程度のコンクリート管を十分な継ぎ手工事を施すことなく、並べて埋め戻しをするというずさんな工事が行われている。

現状では、下水道施設が無計画に、個別に連携もなく、しかも十分な品質管理もなく建設されているため、下水道事業に投資された資金が有効に使われていない。したがって、下水道がシステム全体として機能していないため、本来の目的である流域の水環境改善、水道水源水質の改善に寄与しておらず、投資効果が極めて希薄な状況にある。

これらの課題を解決するためには、①下水道行政の一元化、②下水道事業実施機関のキャパシティー・ビルディング、③統一した下水道整備方針・戦略の策定、④下水処理場設計技術のフィードバック体制の確立、等さまざまな施策を今後着実に実施していく必要がある。

人材面においても、下水道処理場が整備されたあとの維持管理は、上下水道公社あるいは分離して設立される下水道公社が担当することになっているが、これまで下水道事業の経験がないことや、主な事業が上水道であったことから、公社の下水道に関する関心も低く、また、技術者もほとんどいないのが実情である。

上下水道公社自身、主要事業である水道事業ですら歳入を上回る歳出となっているが、その赤字分は政府が補填してくれることから、コスト意識も欠如しており、下水道分野の経営者・技術者の育成・訓練が今後の大きな課題である。

付 属 資 料

1. 要請書
2. Minutes of Meeting
3. 主要面談者リスト
4. 打合せ議事メモ
5. 質問票
6. 収集資料リスト
7. ローカルコンサルタントリスト
8. 国営企業の廃水処理状況リスト
9. 事前評価表
10. 環境社会配慮レポート
11. Scope of Work

1. 要請書

APPLICATION FORM FOR JAPAN'S DEVELOPMENT STUDY PROGRAM

Date of entry: month August year 2004

Applicant: the Government of SYRIAN ARAB REPUBLIC

1. Project digest

(1) Project Title: Master Planning Of Sewage Water Management In Syria

*Enter the project title in English (Spanish or French).

(2) Location (province/county name): All over the Syria

(city/town/village name): _____

from the metropolis : about _____ hours' ride/flight

(3) Implementing Agency

Name of the Agency: Ministry of Housing and Construction, Department of Wastewater

*Enter the name of the implementing agency including such details as the name of the bureau or department.

Number of Staff of the Agency: About 60 pepole

(on a category basis)

Budget allocated to the Agency : 3,000,000,000 SP

*Attach an organizational chart, and mark the department responsible for the study.

(4) Justification of the Project

*Provide detailed information of the project regarding the items below.

-Present conditions of the sector:

Syria governments approach the problem of water environment. This matter relations between Ministry of Environments and Ministry of housing and construction. The Ministry of housing and construction has responsibility for sewage works. And sewage works have stared major cities to reuse the treated water for agriculture irrigation and remove pollution from the cities to improve social and health level.

-Sectoral development policy of the national/local government:

The Ministry is making the sewage investment plan about the future. Current networks of percentage of sewerred is about 20 %(new pipes) and about 50 %(old pipes),

and about 20% population served by treatment plants. Sewerage treatment plants are needed to be planning hereunder;

Over 50,000 individual	27 places
50,000 ~ 10,000 individual	189 places
10,000 ~ 5,000 individual	288 places
Less than 5,000 individual	3942 places

(According Ministry of Local and Environment)

In Syria, there are 14 companies of water supply and wastewater and 5 wastewater companies.(Damascus,Aleppo,Homs,Hama,Latakia) These companies take charge of the maintenance and management, but they don't have wastewater charge system, to make the standard of Syrian accounting management system for sewage works is desired

-Problems to be solved in the sector:

- Technical engineers of treatment plant are not avails enough
- There is no study for small treatment plant
- Persons who are working in treatment plants need to be more qualified

-Outline of the Project:

- To make the sewage works master plan

-Purpose (short-term objective) of the Project:

- To make the pretreatment facility planning for industrial wastewater
- To make efficient investment sewage plan
- To grasp the water pollution in rivers, lakes and Mediterranean Sea

-Goal (long-term objective) of the Project:

- To preserve water environment in Syria
- To reuse treated safety water for agriculture irrigation
- To protect source of waterworks from the pollution

-Prospective beneficiaries:

(Population for which positive change are intended directly and indirectly by implementing the project, and gender disaggregated data, if available)

- Population of the Syria ; About 19,396,000 (2003 year)
- Area of the Syria ; 185,180km²

-the Project's priority in the National Development Plan / Public Investment Program:

1) Constructing treatment plants

Hama T.P, Idlib T.P, Daraa T.P, Deir-atiyeh T.P, Dael T.P, Yabroud T,P

2) Public Investment Program

Al-Zabadani T.P Rural Damascus (Under announcement)

Sirgaya T.P Rural Damascus (Under checking up)

Beit-Jin T.P Rural Damascus (Under announcement)

Raqa T.P (Under announcement)

Hassake T.P (Under announcement)

Al-Seisnieh T.P Tarturs (Under checking)

Bamra T.P Tarturs (Under checking)

Safita T.P Tarturs (Under study)

Mzeirib T.P Daraa (Under study)

Al-sheik-Meskeen T.P (Under study)

Om-al-Myaden T.P (Under study)

(5) Desirable or Scheduled time of the commencement of the Project:

month _____ year 2005

(6) Expected funding source and/or assistance (including external origin) for the Project:

*Describe the concrete policies for the realization of the project, and enter the prospects for realization and funding sources.

To preserve water environment in Syria

To reuse treated safety water for agriculture irrigation

To protect source of waterworks from the pollution

(7) Other relevant Projects, if any.

(8) Any relevant information of the project from gender perspective.

2. Terms of Reference of the proposed Study

*Please fill in (1) and (2) below, paying particular attention to the following items.

-In the case that a study was conducted in the same field in the past, describe the grounds for requesting this study, the present status of the previous project, and the situation regarding the technology transfer.

-Whether there are existing studies regarding this requested study or not.

-Coordination with other economic and technical cooperation from Japan

(1) Necessity/Justification of the Study:

These are here under planning, however no implementation now

1) Wastewater strategic planning and priority investment study in Brada and Ghouta Gharbiyah(2002 year)

2) Cost area sewage planning(About 15years ago)

Syria Government undertaking sewage works planning in all over the country. Sewerage treatment plants are needed to be planning hereunder;

Over 50,000 individual	27 places
50,000 ~ 10,000 individual	189 places
10,000 ~ 5,000 individual	288 places
Less than 5,000 individual	3942 places

(According Ministry of Local and Environment)

Therefore, we need efficient master plan and small-scale sewage treatment plant study and construction.

(2) Necessity/Justification of the Japanese Technical Cooperation:

Syria Government does not have experience of sewage master plan. Therefore we need technical cooperation

(3) Objectives of the Study:

*Describe the objectives of the study in detail. Also, indicate who will benefit from the study in as much detail as possible, including gender disaggregated data and describe the beneficial effect in terms of quantity. Enter in a concise manner the goal expected to be achieved in the future by conducting the study.

*When the requested study is the only input scheme there is in the cooperation program, enter the same sentences given in the "Objective of the Cooperation Program" in the summary sheet. When more than one scheme is requested including this one, describe clearly the role of the requested study.

The objective of the study is to formulate Syrian sewage works master plan for efficient and economical. The aims are hereunder;

To preserve water environment in Syria

To reuse treated safety water for agriculture irrigation

To protect source of waterworks from the pollution

(4) Area to be covered by the Study:

*Enter the name of the target area for the study and attach a rough map to the documents submitted. The attached map should be at a scale that clearly shows the project site. Mark the site in red.

(5) Scope of the Study:

*Enter in a concise manner using an itemized statement.

- 1) Review of previous studies and existing data and material relevant to the study.
- 2) Undertaking of topographic and geological surveys needed for design of wastewater networks and treatment plant.
- 3) Investigation for catchment's area with priority number.(According topography)
- 4) Expect trend population and society.
- 5) Analysis of the water quality in rivers, lakes and sea.
- 6) Grasp water pollution, and making this map in Syria.
- 7) Comparison method of treatment plant.
- 8) Comparison construction cost between networks with pumping station and wastewater treatment.
- 9) Make basic treatment plants planning(for each scale about 500m³/day)
- 10) Analysis of the west water which is drained from the factories.
- 11) Estimate of project cost and preparation of construction schedule.
- 12) Assessment of economic feasibility and suggestion for sustainable management.
- 13) Study of present network condition.
- 14) Assessment of the impacts on the natural and social environment
- 15) Recommendation of action programs for succeeding stages.

(6) Study Schedule:

*Enter the time/period of the study.

The period of the Feasibility Study will be 13 months in total.

In the course of the Feasibility Study, the following report will be prepared.

- Inception Report : within 1 month from commencement of the study
- Interim Report : within 6 month from commencement of the study
- Draft Feasibility Study Report
: within 12 month from commencement of the study
- Feasibility Study Report
: within 13 month from commencement of the study

(7) Expected Major Outputs of the Study:

To proceed efficient sewage construction

To know project priority number
To transfer sewage planning technology
To run a review existent sewage planning

(8) Possibility to be implemented / Expected funding resources:

(9) Environmental and Social Considerations

*Please fill in the attached screening format.

To improve the water environment and health conditions to Syrian people

(10) Request of the Study to other donor agencies, if any:

*Please pay particular attention to the following items:

- Whether you have requested the same study to other donors or not.
- Whether any other donor has already started a similar study in the target area or not.
- Presence/absence of cooperation results or plans by third-countries or international agencies for similar projects.
- In the case that a study was conducted in the same field in the past, describe the grounds for requesting this study, the present status of the previous project, and the situation regarding the technology transfer.
- Whether there are existing studies regarding this requested study or not. (Enter the time/period, content and concerned agencies of the existing studies.)

Overseas development project

Grant Aid from Spain; Al sweida T.P and Raqqaa T.P
Grant Aid from France; Latakia T.P and Tartus T.P
European Union; Banyas city sewage works study
UWRWA; Khan al sheih and Khan Danoon water supply and waste water projects
World bank; Wastewater strategic planning and priority investment study in Brada
and Ghouta Gharbiyah(2002 year)

(11) Other relevant information

*Enter relevant information other than that described above, if any.

Current Operating treatment plants (Operation year)

- 1) Damascus Addra Treatment Plant (1997 year)
Conventional activated sludge Q=485,000m³/day
- 2) Aleppo Treatment Plant (2003 year)
Mechanical aeration pools (Lagoon) Q=345, 000m³/day
- 3) Homs Treatment Plant (1999 year)
Conventional activated sludge Q=133,900m³/day

- 4) Al salamiah Treatment Plant (1993 year)
Natural oxidation pools Q=7, 000m³/day
- 5) Harran Al awameed Treatment Plant (2000 year)
Constructed wet land Q=2, 000m³/day
- 6) Ras Alain Treatment Plant (1999 year)
Mechanical aeration pools (Lagoon) Q=2,130m³/day

3. Facilities and information for the Study

- (1) Assignment of counterpart personnel of the implementing agency for the Study:
(number, academic background, etc.)

- 1) Eng. Mhamad Ali Director of Wastewater department
- 2) Eng. Jamal Al Jarard A head of treatment plant section
- 3) Eng. Aida Booz A head of network study section

- (2) Available data, information, documents, maps, etc. related to the Study:
(Please attach the list.)

- (3) Information on the security conditions in the Study Area:
Iraq border is danger zone
Syria is battle condition to Israel.

4. Global Issues (Gender, Poverty, etc.)

- (1) Women as main beneficiaries or not.

Non

- (2) Project components which require special considerations for women (such as gender difference, women specific role, women's participation), if any.

Non

- (3) Anticipated impacts on women caused by the Project, if any.

Non

- (4) Poverty alleviation components of the Project, if any.

Non

- (5) Any constraints against the low-income people caused by the Project.

Non

5. Undertaking of (the recipient country)

(1) To facilitate the smooth conduct of the Study; the Government of (the recipient country) shall take necessary measures:

- 1) To permit the members of the Team to enter, leave and sojourn in (the recipient country) for the duration of their assignments therein and exempt them from foreign registration requirements and consular fees;
- 2) To exempt the members of the Team from taxes, duties and any other charges on equipment, machinery and other material brought into (the recipient country) for the implementation of the Study;
- 3) To exempt the members of the Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the team for their services in connection with the implementation of the Study;
- 4) To provide necessary facilities to the Team for the remittance as well as utilization of the funds introduced into (the recipient country) from Japan in connection with the implementation of the Study;

(2) The Government of (the recipient country) shall bear claims, if any arises, against the members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the team.

(3) (The implementing Agency) shall act as counterpart agency to the Japanese Study Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

(4) (The implementing agency) shall, at its own expense, provide the Team with the following, in cooperation with other organizations concerned:

- 1) Security-related information on as well as measures to ensure the safety of the Team;
- 2) Information on as well as support in obtaining medical service;
- 3) Available data and information related to the Study;
- 4) Counterpart personnel;
- 5) Suitable office space with necessary office equipment and furniture;
- 6) Credentials or identification cards; and
- 7) Vehicles with drivers.

(5) (The implementing Agency) will, as the executing agency of the project, take responsibilities that may arise from the products of the Study.

*In the case that Detail Design Study is requested.

The Government of (the recipient country) assures that the matters referred to in this form will be ensured for the smooth conduct of the Development Study by the Japanese Study Team.

Signed: _____

Title: _____

On behalf of the Government of _____

Date: _____

Yes No

If yes, please mark the corresponding stakeholders.

Administrative body

Local residents

NGO

Others ()

Question 2

Is the project a new one or an on-going one? In the case of an on-going one, have you received strong complaints etc. from local residents?

New On-going (there are complaints) On-going (there are no complaints)

Others ()

Question 3 Name of the law or guidelines:

Is Environmental Impact Assessment (EIA) including Initial Environmental Examination (IEE) required for the project according to a law or guidelines in the host country?

Yes No

If yes, please mark the corresponding items.

Required only IEE (Implemented, on going, planning)

Required both IEE and EIA (Implemented, on going, planning)

Required only EIA (Implemented, on going, planning)

Others: ()

Question 4

In case of that EIA was taken steps, was EIA approved by relevant laws in the host country?

If yes, please mark date of approval and the competent authority.

<input type="checkbox"/> Approved: without a supplementary condition	<input type="checkbox"/> Approved: with a supplementary condition	<input type="checkbox"/> Under appraisal
--	---	--

(Date of approval: Competent authority:)

Not yet started an appraisal process

Others: ()

Question 5

If a certificate regarding the environment and society other than EIA is required, please indicate the title of certificate.

- Already certified Required a certificate but not yet done

Title of the certificate :(_____)

- Not required

Others (_____)

Question 6

Are following areas located inside or around the project site?

- Yes No Not identified

If yes, please mark corresponding items.

- National parks, protected areas designated by the government (coast line, wetlands, reserved area for ethnic or indigenous people, cultural heritage) and areas being considered for national parks or protected areas
- Virgin forests, tropical forests
- Ecological important habitat areas (coral reef, mangrove wetland, tidal flats)
- Habitat of valuable species protected by domestic laws or international treaties
- Likely salts cumulus or soil erosion areas on a massive scale
- Remarkable desertification trend areas
- Archaeological, historical or cultural valuable areas
- Living areas of ethnic, indigenous people or nomads who have a traditional lifestyle, or special socially valuable area

Question 7

Does the project have adverse impacts on the environment and local communities?

- Yes No Not identified

Reason: (_____)

Question 8

Please mark related environmental and social impacts, and describe their outlines.

- | | |
|--|---|
| <input type="checkbox"/> Air pollution | <input type="checkbox"/> Social institutions such as social infrastructure and local decision-making institutions |
| <input checked="" type="checkbox"/> Water pollution | <input type="checkbox"/> Existing social infrastructures and services |
| <input checked="" type="checkbox"/> Soil pollution | <input checked="" type="checkbox"/> The poor, indigenous of ethnic people |
| <input checked="" type="checkbox"/> Waste | <input type="checkbox"/> Maldistribution of benefit and damage |
| <input type="checkbox"/> Noise and vibration | <input type="checkbox"/> Local conflict of interests |
| <input checked="" type="checkbox"/> Ground subsidence | <input type="checkbox"/> Gender |
| <input checked="" type="checkbox"/> Offensive odors | <input type="checkbox"/> Children's rights |
| <input checked="" type="checkbox"/> Geographical features | <input type="checkbox"/> Cultural heritage |
| <input type="checkbox"/> Bottom sediment | <input type="checkbox"/> Infectious diseases such as HIV/AIDS etc. |
| <input type="checkbox"/> Biota and ecosystem | <input type="checkbox"/> Others () |
| <input checked="" type="checkbox"/> Water usage | |
| <input type="checkbox"/> Accidents | |
| <input checked="" type="checkbox"/> Global warming | |
| <input type="checkbox"/> Involuntary resettlement | |
| <input checked="" type="checkbox"/> Local economy such as employment and livelihood etc. | |
| <input checked="" type="checkbox"/> Land use and utilization of local resources | |

Outline of related impacts:

This project will tell the main problems in Syria concerning with waste water pollution.
Waste water makes pollution for ground water, soil, air, land, plants and others.
This project will improve environment, land use and utilization of local resources.

Question 9

Information disclosure and meetings with stakeholders

9-1 If the environmental and social considerations are required, does the proponent agree on information disclosure and meetings with stakeholders in accordance with JICA Guidelines for Environmental and Social Considerations?

Yes No

9-2 If no, please describe reasons below.

[]

2 . Minutes of Meeting

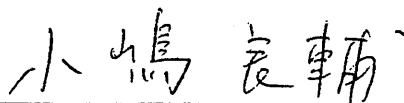
MINUTES OF MEETING
ON
THE PREPARATORY STUDY
FOR
THE STUDY
ON
SEWERAGE SYSTEM DEVELOPMENT
IN
THE SYRIAN ARAB REPUBLIC

AGREED UPON BETWEEN
MINISTRY OF HOUSING AND CONSTRUCTION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

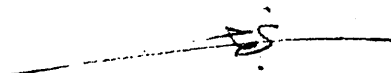
Damascus, October 19, 2005



Mr. Ahmad Al-Ashkar
Deputy Head
State Planning Commission
The Syrian Arab Republic



Mr. Ryosuke Kojima
Leader
The Preparatory Study Team
Japan International Cooperation Agency
Japan



Mr. Mohammed Nehad Mushantat
Minister of Housing and Construction
The Syrian Arab Republic

In response to the request from the Government of the Syrian Arab Republic, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Study Team, headed by Mr. Ryosuke Kojima (hereinafter referred to as "the Team"), to the Syrian Arab Republic from October 8 to October 21, 2005, for the purpose of clarifying the framework of "the Study on Sewerage System Development in the Syrian Arab Republic" (hereinafter referred to as "the Study").

During its stay in the Syrian Arab Republic, the Team carried out field surveys in the study area, and held a series of discussions with Ministry of Housing and Construction, and other authorities concerned.

As a result of the discussions, the Team and Syrian side have agreed to the following items.

1. TITLE OF THE STUDY

Both sides agreed that the title of the Study will be "the Study on Sewerage System Development in the Syrian Arab Republic".

2. TARGET YEAR

Both sides agreed that the target year for the Master Plan is 2025.

3. STUDY AREA

Both sides agreed that the Study areas for Phase II are as follows in order of priority;

- (1) Damascus rural area (Damascus rural area Governorate),
- (2) Coastal Zone (Tartous Governorate and Latakia Governorate),
- (3) Dar'a (Dar'a Governorate), and
- (4) Euphrates Basin (Al-Rakka Governorate, Deir-ez-zor Governorate and Al-Hasakeh Governorate).

Both sides also agreed that the Master Plan Study in Damascus rural area, Coastal zone and Dar'a focuses on rural sewerage networks and treatment plants much than those of cities and the Master Plan Study in Euphrates Basin focuses on high populated cities and towns, which should be decided later during the Study period between JICA Study Team and Ministry of Housing and Construction, and that Feasibility Study will be made for a project site in Damascus rural area as a pilot project for training purpose.

4. STUDY PERIOD

The Study period is approximately 16 months.

5. SCOPE OF WORK

The Team explained that the Scope of Work (S/W), which stipulates the framework of the Study, will be prepared and signed by the representatives of JICA Syria Office and Ministry of Housing and Construction after notification of approval of implementation of the Study by JICA Headquarters through JICA Syria Office to the Syrian side. Both sides agreed that it is desirable that the S/W be signed as soon as possible after the signing of this Minutes of Meeting. Both sides also agreed on the provisional draft S/W shown as Appendix II.

6. COUNTERPART PERSONNEL

Both sides recognized the importance of technology transfer to Syrian counterpart personnel through on-the-job training in the Study. Ministry of Housing and Construction

 1  

would assign necessary counterpart personnel, at least one of them who can communicate in English, to the JICA Study Team. The list of counterpart personnel in the Ministry of Housing and Construction, Directorate and Establishment in the above-mentioned Governorates will be given to JICA Syria Office by the Ministry within one month after the signed date of the Minutes of Meeting.

7. STEERING COMMITTEE

Both sides agreed that Ministry of Housing and Construction would set up a steering committee for the smooth implementation of the Study. It will consist of the representatives of competent organizations under the chairmanship of Ministry of Housing and Construction. Organizations as follows are assumed to join the committee. The JICA Study Team and JICA representative will also attend the committee.

- Ministry of Housing and Construction
- Ministry of Local Administration and Environment
- Ministry of Irrigation
- Ministry of Industry
- Ministry of Agriculture
- Ministry of Health
- Ministry of Tourism
- Governorate (in the priority areas)
- State Planning Commission
- Other Syrian organizations as necessary

8. ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

The Team explained JICA environmental and social consideration guidelines, and that it will be applied to the Study. Ministry of Housing and Construction understood the policy of JICA guidelines, and agreed in principle to the following responsibilities and requirements.

- (1) Based on the guidelines, Ministry of Housing and Construction shall be responsible for conducting Initial Environmental Examination (IEE) for the high priority project(s) in collaboration with the JICA Study Team. The JICA Study Team shall provide Ministry of Housing and Construction with technical support in order to conduct IEE.
- (2) The information disclosure such as study reports shall be made in order to ensure the participation of and dialogues with various stakeholders, and to achieve appropriate understanding on environmental and social considerations.
- (3) The above-mentioned responsibilities and requirements will also be applied when environmental impact assessment is necessary.
- (4) In the course of implementation of the Study, public consultation with communities and stakeholders shall be implemented.
- (5) In case resettlement is inevitable from the result of the Master Plan study, Ministry of Housing and Construction shall be responsible for making resettlement action plan.

9. COUNTERPART TRAINING IN JAPAN

The Syrian side requested that JICA conducts counterpart training in Japan for smooth transfer of technology during the Study. The Team promised to convey this request to JICA Headquarters for consideration.

10. SEMINARS AND/OR WORKSHOPS FOR TECHNOLOGY TRANSFER

The Syrian side requested that JICA would hold seminars and/or workshops at the time

of submission of Interim Report and Draft Final Report for better understanding of the Study. The Team recognized the necessity and promised to convey this request to JICA Headquarters.

11. UNDERTAKING OF THE GOVERNMENT OF THE SYRIAN ARAB REPUBLIC

Ministry of Housing and Construction agreed that office space with office furniture, air-conditioning, telephone lines, internet connections and electricity would be provided in the office of Ministry of Housing and Construction for the use by the JICA Study Team. The charge of telephone and internet should be paid by the JICA Study Team.

12. REPORT

- (1) The Syrian side requested that final report in Arabic also would be made in order to disseminate the result of the Study as much as possible. The Team understood this proposal.
- (2) Both sides agreed that all the reports would be disclosed to the public in order to ensure maximum use of the Study results.

Appendix I List of Participants
Appendix II Scope of Work (Provisional Draft)

Appendix I

List of Participants

Syrian Side

(Ministry of Housing and Construction)

Mr. Mohammed Nehad Mushantat	Minister
Dr. Kamal Al Sheikha	Vice Minister
Mr. Mazen Laham	Director of Planning and Statistics
Mr. Mohamed Ali	Director of Sewage Department
Ms. Ferial Refayeh	Head of International Cooperation Department
Mr. Maher Alkhatib	Head of Wastewater Department
Dr. Wassim Fallouh	Project Manager
Mr. Eyad Ali	Staff of Sewage Department

(State Planning Commission)

Mr. Ahmad Al-Ashkar	Deputy Head
Mr. Nader Sheikh Ali	Director General, International Cooperation
Mr. Nabil Razzaz	Director of Cooperation with Asia countries

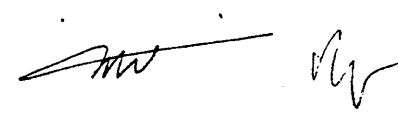
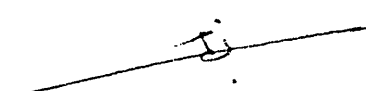
Japanese Side

(Preparatory Study Team)

Mr. Ryosuke Kojima	Leader
Mr. Atuso Furuyama	Water Reuse Management in Watershed
Ms. Hiroko Kamata	Sewerage / Wastewater Treatment Planning
Mr. Fumio Fukuda	Sewerage Facility Planning
Mr. Ryuzo Furukawazono	Water Pollution Measure / Environment and Social Considerations
Mr. Naoki Kakioka	Study Planning

(JICA Syria Office)

Ms. Yumiko Honda	Project Formulation Advisor
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Provisional Draft

SCOPE OF WORK
FOR
THE STUDY
ON
SEWERAGE SYSTEM DEVELOPMENT
IN
THE SYRIAN ARAB REPUBLIC

AGREED UPON BETWEEN
MINISTRY OF HOUSING AND CONSTRUCTION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Damascus, , 2005

Mr. Mohammed Nehad Mushantat
Minister of Housing and Construction
The Syrian Arab Republic

Mr. Kazuhide Nagasawa
Resident Representative
Syria Office
Japan International Cooperation Agency
Japan

I. INTRODUCTION

In response to the request from the Government of the Syrian Arab Republic, the Government of Japan has decided to conduct the "the Study on Sewerage System Development in the Syrian Arab Republic" (hereinafter referred to as "the Study") in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of the Syrian Arab Republic signed on July 18, 1985 (hereinafter referred to as "the Agreement").

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the relevant authorities concerned of the Government of the Syrian Arab Republic.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are:

1. to review existing planning of sewerage sector nationwide in the Syrian Arab Republic,
2. to formulate a Master Plan for sewerage system development in some priority governorates in order to prevent water pollution and improve health sanitation,
3. to conduct a Feasibility Study for a project site which will be selected in Damascus rural area as a pilot project for training purpose , and
4. to pursue technology transfer to the counterpart personnel in the course of the implementation of the Study.

III. STUDY AREA

The Study area is as shown in the attached sheet of Annex I.

IV. SCOPE OF THE STUDY

To achieve the above objectives, the Study will cover the following items:

Phase I: Review of the existing planning of sewerage sector nationwide

1. Review of previous studies and existing data and materials relevant to the Study:
 - (1) Sewerage planning and related sewerage development projects,
 - (2) Management of water environment in river basin and coast,
 - (3) Management of industrial wastewater effluent,
 - (4) Water reuse for irrigation, and
 - (5) Legal and institutional framework for water pollution control
2. Evaluation of the existing sewerage planning and recommendations of development strategy:
 - (1) Legal and institutional framework,
 - (2) Organization,
 - (3) Investment plan, and
 - (4) Management and financial system of sewerage utilities

Phase II: Formulation of a Master Plan for sewerage system development in some priority governorates

1. Collection and analysis of existing data and information
 - (1) Natural, socio-economic and environmental conditions,
 - (2) Land-use and infrastructure,
 - (3) Related development plans and projects,
 - (4) Water supply and irrigation,
 - (5) Inventory of water pollution sources
 - (6) Environmental laws and regulations, and organization;
 - (7) Other relevant data and information
2. Study of present sewerage network condition
3. Analysis of the highly polluted wastewater which is drained from the factories
4. Establishment of database of small-towns and rural sewerage
5. Comparison study on technical alternatives:
 - (1) Method of treatment, and
 - (2) Construction cost between networks with pumping station and on-site small scale treatment plant
6. Formulation of a development strategy and a Master Plan:
 - (1) Forecast of planning framework,
 - (2) Making of basic policy and development strategy,
 - (3) Planning of sewerage system,
 - (4) Recommendations on suitable treatment process for highly polluted industrial wastewater by kind of industry,
 - (5) Recommendations on strengthening management capacity of the concerned agency,
 - (6) Preliminary cost estimation, and
 - (7) Formulation of a development phasing plan
7. Carrying out environmental and social considerations study according to JICA guidelines for environmental and social considerations (See attached Annex II)
8. Evaluation of the Master Plan

Phase III: Feasibility Study for a project site which will be selected in Damascus rural area as a pilot project for training purpose

1. Supplemental surveys and data collection, if necessary
 - (1) Topographic and geological surveys,
 - (2) Social survey, and
 - (3) Water quality analysis
2. Preliminary design of sewerage facilities including treatment plant
3. Plan of construction and material purchasing
4. Plan of management, operation and maintenance
 - (1) Organizational structure,
 - (2) Staff and manpower training,
 - (3) Operation and maintenance guidelines, and
 - (4) Public dissemination
5. Cost estimation
6. Financial plan and assessment of economic feasibility:
 - (1) Target level of cost recovery, and
 - (2) Tariff policy
7. Carrying out environmental and social considerations study according to JICA guidelines for

- environmental and social considerations (See attached Annex II)
8. Formulation of implementation schedule
 9. Recommendations on succeeding stages

V. STUDY SCHEDULE

The Study will be carried out in accordance with attached tentative schedule shown in Annex III. The schedule is tentative and subject to be modified when both parties agree upon and any necessity that arises during the course of the Study.

VI. REPORTS

JICA shall prepare and submit the following writing reports and a digital data in English to the Government of the Syrian Arab Republic.

1. Inception Report
Twenty (20) copies at the commencement of the Study
2. Progress Report
Twenty (20) copies at the end of Phase I
3. Interim Report
Twenty (20) copies at the end of Phase II
4. Draft Final Report
Twenty (20) copies at the end of Phase III
The Government of the Syrian Arab Republic shall submit its comments within one (1) month after receipt of the Draft Final Report.
5. Final Report
Fifty (50) copies in English and fifty (50) copies in Arabic within one (1) month after receipt of the comments on the Draft Final Report from the Government of the Syrian Arab Republic

VII. UNDERTAKING OF THE GOVERNMENT OF THE SYRIAN ARAB REPUBLIC

In accordance with the Agreement, the Government of the Syrian Arab Republic shall accord privileges, exemptions and benefits to the JICA study team (hereinafter referred to as "the Team") as follows:

1. To facilitate smooth implementation of the Study, the Government of the Syrian Arab Republic shall take the following necessary measures:
 - (1) To provide necessary facilities to the Team for remittance as well as utilization of the funds introduced into the Syrian Arab Republic from Japan in connection with the implementation of the Study,
 - (2) To bear claims, if any arise, against the members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Team.
2. Ministry of Housing and Construction shall act as the counterpart agency to the Team and also

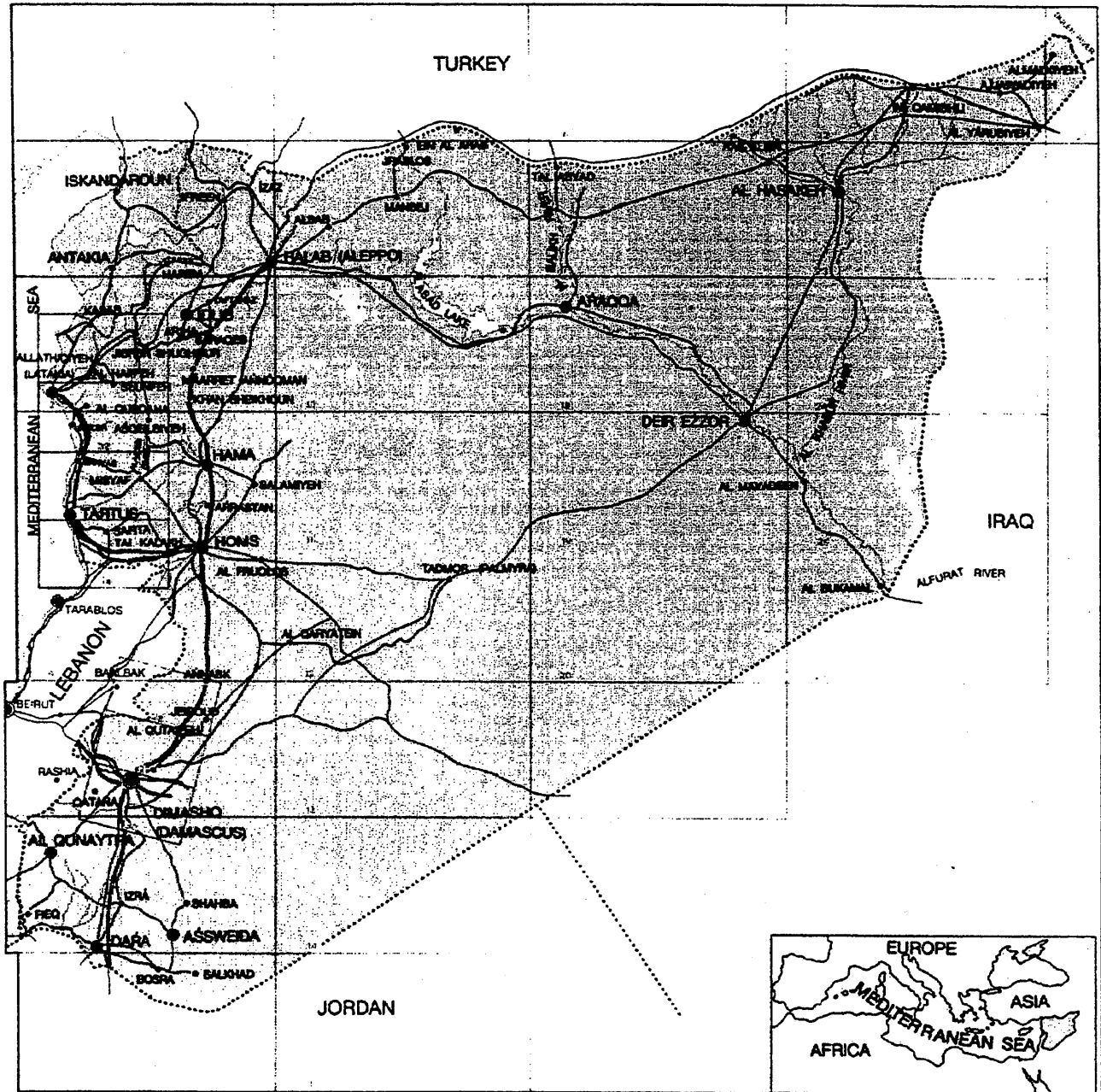
as a coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

3. Ministry of Housing and Construction shall, at its own expense, provide the Team with the following in cooperation with other organizations concerned:
 - (1) security-related information on as well as measures to ensure the safety of the Team,
 - (2) information on as well as support in obtaining medical service,
 - (3) available data and information related to the Study,
 - (4) counterpart personnel and supporting staff,
 - (5) suitable office space with necessary office equipment and facilities, and
 - (6) credentials or identification cards

VIII. CONSULTATION

JICA and Ministry of Housing and Construction shall consult with each other in respect of any matter that may arise from or in connection with the Study.

STUDY AREA



Priority Governorate in Master Plan

- Damascus rural area
- Tartous
- Lattakia
- Dar'a
- Al-Rakka
- Deir-ez-zor
- Al-Hasakeh

Handwritten signature

Annex II

Terms of Reference for the Environmental and Social Considerations Study

Environmental and Social Considerations Study (IEE Level)

1. Scoping
2. Consideration and analysis of environmental baseline data
 - (1) Social and economic conditions
population, economy, employment, transportation, infrastructure/public facilities (road, bridge, water supply, sewerage, etc.), land use, water use, land ownership, public health, local conflicts, religious groups, cultural heritage/historical site, hazards(risk), accident, protection/reserved area, etc.
 - (2) Natural conditions
Topography, geology, soil, ground water, meteorology, hydrology (water level, tidal current, wave, etc.), ecology (fauna & flora), vegetation/forests, water bodies (sea, river, canal, lake, reservoir, pond, etc), erosion, landscape, natural disaster, etc.
 - (3) Pollution
Air pollution/quality, water pollution/quality, soil contamination, noise and vibration, land subsidence, offensive odor, waste materials, etc.
3. Initial environmental examination and study on mitigation measures (including study on alternatives)
4. Consultation with stakeholders (stakeholders meeting)

Environmental and Social Considerations Study (EIA Level)

1. Scoping
2. Additional collection and analysis of environmental baseline data
3. Supplementary survey and analysis (for requirement of specific data/information)
4. Environmental impacts assessment and study on mitigation measures (including study of alternatives)
5. Preparation of environmental management plan including monitoring program
6. Consultation with stakeholders (stakeholders meeting)

Annex III

Tentative Schedule of the Study

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Work Schedule	[Empty Box]															
Reports	△ IC/R			△ PR/R						△ IT/R					△ DF/R	△ F/R

IC/R : Inception Report
 PR/R : Progress Report
 IT/R : Interim Report
 DF/R : Draft Final Report
 F/R : Final Report