

2. The Government of Romania 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 members of the Team.

3. Ministry of Public Works and Regional Planning (hereinafter referred to as MLPAT) and Bucharest Municipality shall act as the counterpart agencies to the Team and also as coordinating bodies in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

4. MLPAT and Bucharest Municipality, shall, at its own expense, provide the Team with the following, in cooperation with other organizations concerned:

- (1) available data and information related to the Study;
- (2) counterpart personnel;
- (3) suitable office space with necessary equipment in Bucharest Municipality;
- (4) credentials or identification cards.

VIII. UNDERTAKINGS OF JICA

For the implementation of the Study, JICA shall take the following measures:

1. to dispatch, at its own expense, study teams to Romania,
2. to pursue technology transfer to the Romanian counterpart personnel in the course of the Study.

IX. CONSULTATION

JICA, MPLAT and Bucharest Municipality shall consult with each other in respect of any matter that may arise from or in connection with the Study.



TENTATIVE STUDY SCHEDULE

ANNEX I

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DESCRIPTION	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>← Phase I: Master plan →</p> </div> <div style="text-align: center;"> <p>← Phase II: Feasibility study →</p> </div> </div>															
WORK IN ROMANIA	<div style="display: flex; justify-content: space-between;"> <div style="width: 15%; text-align: center;">First work</div> <div style="width: 15%; text-align: center;">Second work</div> <div style="width: 15%; text-align: center;">Third work</div> <div style="width: 15%; text-align: center;">Fourth work</div> </div>															
WORK IN JAPAN	<div style="display: flex; justify-content: space-between;"> <div style="width: 15%; text-align: center;">First work</div> <div style="width: 15%; text-align: center;">Second work</div> <div style="width: 15%; text-align: center;">Third work</div> <div style="width: 15%; text-align: center;">Fourth work</div> </div>															
REPORT	▲			▲	▲	▲	▲	▲			▲	▲	▲	▲		▲
PRESENTATION	IC/R			P/R(1)			IT/R			P/R(2)		DF/R				F/R

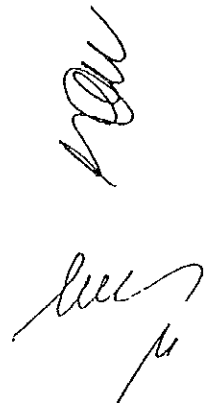
IC/R: Inception Report

P/R: Progress Report

IT/R: Interim Report

DF/R: Draft Final Report

F/R: Final Report



添付資料 3. Minutes of Meeting

MINUTES OF MEETING

FOR
THE STUDY
ON
THE SOLID WASTE MANAGEMENT SYSTEM
FOR
BUCHAREST MUNICIPALITY
IN
ROMANIA


January 13, 1994
Bucharest, Romania



Mr. RADU DUMITRESCU
Director of Department for
Municipal Services
Bucharest Municipality



Dr. SACHIHO NAITO
Leader, Preparatory Study Team
Japan International Cooperation
Agency



Mr. VASILE CIOMOS
Director of General Directorate
for Municipal Services
Ministry of Public Works and
Regional Planning

Based on the formal request of the Government of Romania, the Government of Japan, through the Japan International Cooperation Agency (JICA), has agreed to conduct the Study on the Solid Waste Management System for Bucharest Municipality in Romania (hereinafter referred to as "the Study").

The JICA Preparatory Study Team (hereinafter referred to as "the Team"), headed by Dr. Sachiho Naito, arrived in Romania on January 6, 1994, where they held a series of meetings with the Ministry of Public Works and Regional Planning (MLPAT), the Bucharest Municipality and other authorities concerned of the Government of Romania. The list of participants is shown in the appendix.

During the visit, both sides agreed to the Scope of Work to be undertaken by MLPAT, Bucharest Municipality and JICA for the successful execution of the Study. In addition to the Scope of Work, the Team and the Romanian representatives confirmed the following

- 1) The title of the Study will be "The Study on the Solid Waste Management System for Bucharest Municipality in Romania".
- 2) The target year of the Study will be 2010.
- 3) The type of solid waste to be studied will be limited to municipal solid waste. Municipal solid waste includes household waste, market waste, office and commercial waste and street sweeping waste. Non-hazardous industrial waste will be assessed and evaluated in the Study.
- 4) The Romanian side will provide suitable office space, furniture, telephone and access to facsimile machine to the full scale study team. (International telecommunication fees will be paid by JICA.) The Romanian side requested that JICA supply a photocopy machine. The Team will convey the request to the JICA headquarters.
- 5) The Romanian side requested that JICA supply a truck scale for the conduct of the Study and provide it to the Romanian side after the completion of the Study. The Team will convey the request to the JICA headquarters. The Romanian side will be responsible for installing and operating the truck scale.



- 6) The Romanian side requested that the cost for land survey, topographic survey and solid waste quantity/quality survey be borne by JICA. The Team will convey the request to the JICA headquarters.
- 7) The Romanian side requested that JICA prepare the summary of each report in Romanian. The Team will convey the request to the JICA headquarters.
- 8) The Romanian side will organize a "Steering Committee" for the Study, comprising of representatives from MLPAT, Bucharest Municipality and other relevant organizations.
- 9) MLPAT and Bucharest Municipality will organize a "Counterpart Team" which will cooperate with the JICA full scale study team.
- 10) The Romanian side requested that preferably two counterparts be sent to Japan for short-term training. The Team will convey the request to the JICA headquarters.
- 11) The Romanian side requested that JICA hold a seminar in Romania, which will include the presentation of the results of the Study and other relevant subjects. The Team will convey the request to the JICA headquarters.



Appendix

List of Participants

Ministry of Public Works and Regional Planning

Mr. Crisan Victor POPESCU, Secretary of State
Mr. Vasile CIOMOS, Director, General Directorate for Municipal Services
Mr. Viorel IACOVOIU, Director, Economic Division
Ms. Dana CRACIUNESCU, Project Manager, Directorate for Municipal Services
Mr. Joan-Radu STRATULAT, Inspector, Division for External Cooperation

Bucharest Municipality

Mr. Lucian RADU, Vice Mayor
Mr. Radu DUMITRESCU, Director, Department for Municipal Services
Mr. Laurentin DRAGALAN, Director, Division of Sanitary Engineering
Mr. Constantin COJOCARU, Director of Economic Department

JICA Preparatory Study Team

Dr. Sachiho NAITO, Leader
Mr. Tadahiko OGAWA
Ms. Masumi TATEISHI
Mr. Norihiko NODA
Mr. Masashi HATTORI



添付資料 4. 質 問 書

"The Study on the Solid Waste Management System for Bucharest Municipality in Romania"

Questions on Collection and Disposal

The Preliminary Study Team of JICA is scheduled to visit Bucharest municipality for 2 to 3 weeks in January '93 in order to collect relevant information of the above study and to discuss with officials concerned.

We would like to ask your kind cooperation for a smooth and effective conduct of the study by asking the following questions.

1. Present status of solid waste management of Bucharest Municipality
 - 1) National policy and development plan for solid waste management
 - 2) Organization and staffing at national level for solid waste management
 - 3) Financial situations at national level for solid waste management (expenditures in 1993 and budget for 1994)
 - 4) Organization and staffing of Bucharest Municipality for solid waste management
 - 5) Financial situations of Bucharest Municipality (expenditures in 1993 and budget for 1994)
 - 6) Laws and regulations at national level for solid waste management
 - 7) Regulations and other rules of Bucharest Municipality for solid waste management
2. Generation, storage and collection of solid wastes in Bucharest Municipality
 - 1) Service Population :
 - 2) Service area (ha) :
 - 3) Collection method
 - (a) Combined collection
 - (b) Separate collection
 - 4) Generation of solid wastes
 - kg/capita/day
 - ton/day (total)
 - 5) Composition of solid wastes

- 6) Characteristics of solid wastes
- 7) Collection containers
 - (a) Bags
 - (b) Bins
- 8) Collection frequency and timing
 - days per week
 - times per day
- 9) Collection charges
 - yes → how much ?
- 10) Collection and disposal of industrial wastes
- 11) Road sweeping
 - Waste amount
 - Sweeping area or length
- 12) Staffing for road sweeping
- 13) Collection and disposal of medical wastes
- 14) Collection system
 - By own staff or contracts ?
- 15) Transfer stations
 - yes → how many and where ?
- 16) Travel frequency of collection vehicles
 - times per day (collection area to final disposal site)
- 17) Collection vehicles
 - (a) how many vehicles ?
 - Collection vehicles :
 - Tractors :
 - Compactors :
 - Others :
 - Total :
 - (b) Work shop to maintain and repair vehicles
 - Size and capacity

- 18) Are there some wastes left from collection ?
 - yes → how much ?
- 19) Are there illegal dumpings of solid wastes out of the disposal site ?
 - yes → where are how much ?

3. Transport, treatment and disposal of solid wastes

- Final disposal site
 - (a) location
 - i) Length from the city center (km)
 - ii) Surrounding areas (topography and geology)
 - (b) Area (km²)
 - (c) Remaining life (year on m³)
 - (d) How many years has it been used ?
 - (e) Disposal method
 - i) Sanitary landfill
 - ii) Open dumping
 - (f) Soil coverage method
 - (g) Lining works
 - (h) Soil characteristics of final disposal site
 - (i) Leachate treatment
 - (j) Influences (soil and water) by leachate
 - (k) Management and costs of final disposal site
 - (e) Utilization plan of final disposal site

4. Others

- 1) Issues and measures for solid waste management of Bucharest Municipality
- 2) Previous studies regarding solid waste management in Bucharest Municipality
- 3) Recycling system
- 4) Scavengers at final disposal site
- 5) Transfer stations and future plan
- 6) Recycled materials like paper, iron and aluminum and their prices
- 7) Local consultants and analytical institutes for study of solid waste management

Solid waste management in Romania
Questionnaire on environmental issue

1. Legislation

- 1) Do you have the law/guidelines on environmental impact assessment ?
(responsible ministry, agency, procedure, etc.)
- 2) Do you have the environmental quality standards ?
(ambient air, water, emission, effluent, rank odor, noise, vibration, ground water, ground subsidence, soil contamination, etc.)
- 3) What is the penalty if you couldn't comply with the regulation ?
- 4) May I have an annual report regarding the environmental issues in your country/city ?

2. International conventions on environmental conservation

- 1) Have you affiliated to bilateral or multilateral conventions concerning environmental conservation, e. g. Ramsar Convention, Washington Convention ?

3. Present situation of the proposed project site

Please describe the following.

1) Socio-economic environment

- Number of people to be resettled and plan of resettlement or compensation
- Experience of resettlement in previous project, if any
- Distribution of schools, hospitals, religious facilities
- History of epidemic disease
- Coverage of water supply system and sewerage system

2) Natural environment

- Topographical, geological and meteorological data
- Vegetation map
- Natural disaster such as landslide and flood
- Wells for drinking water and industries
- Environmentally vulnerable areas such as bird sanctuary and wetland
- Species of valuable flora and fauna
- Location of particular areas officially protected such as national parks and natural parks
- Distribution of important landscape or scenery for tourism or religion

- 3) Environmental pollution
- Air and water quality
 - Soil contamination
 - Noise and vibration
 - Others

添付資料 5. 面会者リスト

Bucharest Municipality (ブカレスト市)

Mr. Lucian RADU	Vice Mayor
Mr. Radu DUMITRESCU	Director, Department for Public Services
Mr. Laurentin DRAGALAN	Director, Division of Sanitary Engineering
Mr. Constantin COJOCARU	Director, Economic Division
Mr. Calin CRISTESCU	Director, International Relations Department
Ms. Teodora SANDU	Engineer, International Relations Department
Mr. Nicolae PARSAN	General Manager, RASUB
Mr. Silviu JURAVLE	Production Manager, RASUB

Ministry of Public Works and Regional Planning (公共事業・地域計画省)

Mr. Crisan Victor POPESCU	Secretary of State
Mr. Vasile CIOMOS	Deputy Director, Directorate for Municipal Services
Mr. Viorel IACOVOIU	Director, Economic Division
Mr. Dragoi ION	Senior Officer, Directorate for Municipal Services
Ms. Dana CRACIUNESCU	Project Manager, Directorate for Municipal Services
Mr. Gheorghe IONASCU	Manager, Division of Environment and Protected Areas

Department for European Integration (総理府ヨーロッパ統合局)

Mr. Nicolae IDU	Director, G-24 Assistance Coordination
Mr. George Catalin GURAN	Deputy Director, G-24 Assistance Coordination
Mr. Cristian NITA	Project Manager

Ministry of Waters, Forests and Environmental Protection (水資源・森林・環境省)

Ms. Serena ADLER	Expert, Dept. of Environmental Protection
Ms. Ioana LUCA	International and Public Relations Division
Mr. Paul LIZAC	Director, Environmental Protection Agency, Bucharest

Ministry of Industries (産業省)

Mr. Alexandru GEORGESCU	Director, Dept. for Research, Development, Ecology
Ms. Mariana TIMOTIN	Counsellor, International Relations Division

RGR

Mr. Cristian Traian BARCA	Director General
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World Bank Bucharest Office (世界銀行ブカレスト事務所)

Mr. Richard FLORESCU	Project Officer
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EBRD Bucharest Office (欧州開発銀行ブカレスト事務所)

Mr. Serban GHINESCU Agricultural Sector Consultant

Aquaproject

Mr. Andrei CORNELIU Director General

Research and Engineering Institute for Environment (環境研究所)

Dr. Vladimir ROJANSCHI Director

Dr. Mihai LESNIC Scientific Director

National Institute of Meteorology and Hydrology (国立気象水文研究所)

Dr. Viorel Alexandru STANESCU Scientific Director

在ルーマニア日本大使官

藤田俊美
吉村勝昭
大林則明

公使
二等書記官

JICA オーストリア事務所

佐藤幹治
杉本充邦

所長

添付資料 6. ローカル・コンサルタント リスト

事前調査団は、ブカレスト市及び公共事業省の協力を得て、滞在中に、以下のローカル・コンサルタント及び現地研究機関を訪問して、彼らの調査に対する理解度や能力について聴取を行った。その結果、次のようなことが判明した。

これらの研究機関は、もともと社会主義体制にあっては国家機関であり、その運営や方法が資本主義体制のものと違っている。とはいえ、1989年の革命以降、急速に考え方も変化しているようなので、本格調査に対しては、これらの機関への委託は可能であろうと思われる。

事前調査団としては、これらの機関の機材について十分見ていないので、断定的なことは言えないが、基本的な投資を長期間行っていないので、この点に不安が残る。

さらに、試験方法や分析方法についても、日本のそれと、すこし違うことが考えられるので、この点に注意を要する。ただ、彼らの話では、現行のスタンダードについて、ECに近づけるようにしているので、やがて、すこしずつ、そちらの方向に向かって進んでいくものと考えられる。

Aquaproject

所長 Director General : CORNELIU, Andrei

住所 : Splaiul Independentei 294, Sector 6

電話 : 637.31.70

Fax : 637.79.65

この機関は、もともと水資源・森林・環境省に付属していたのであるが、現在は、独立しているとのことである。しかし、後述の Research and Engineering Institute for Environment と同じ敷地にあり、資金的には政府が70%、民間が30%の比率であるという。数箇月すると、完全に民営化するとのことである。

分野的には、水質分析、地質調査、環境影響評価のほか、水資源関係施設(ダム、上水道等)の設計を行い、350人の専門家、200人の技術士を抱え、ルーマニア内に三つの支社(Timisoara、Sibiu、Iasi)を有している。

現在進行中である世銀の水道案件のF/Sにも参加しているとのことであり、国内のダム建設など、かなり実績はあるように見受けられた。

Research and Engineering Institute for Environment

科学所長 Scientific Director : LESNIC, Mihai

局長 Director : ROJANSCHI, Vladimir

住所 : 77 748 Bucharest, Spl. Independentei 294

電話： 637. 30. 35

Fax： 312. 13. 93

ここは、水資源・森林・環境保全省に付属しており、水資源、水質分析、排水処理、廃棄物処理、水文解析などを行っているとのことである。専門家の数は約740名で、そのうち大卒が約400名、博士が約40名とのことである。研究所の敷地はかなり広く、風洞実験や水理実験の施設もあるとのことである。

世銀との仕事もやっていて、TORのことも、よく理解しているように思えた。

ただし、委託に当たっては、内容と価格について十分詰める必要がある。

Institute of Geology and Geophysics

調査部長 Head of Research Department：VELICIU, Serban

地質学者 Geologist：RADULESCU, Ioan

この研究所は、かなりアカデミックな感じで、地質の分野で高度な研究を行っている印象を受けた。ただ、施設はかなり古く、本格調査の要望に応えうるかどうかについては、すこし疑わしい。

Institute of Town Planning

建築家 Architect：BULZAN, Nicolae

この研究所は、ブカレスト市の傘下にある。実際行っていないので、内容的には不明。Bulzan氏が、事前調査団の現地踏査の一部に参加した。その印象では、都市計画の面での理解は高いように思えた。

National Institute for Meteorology and Hydrology

科学所長 Scientific Director：STANESCU, Viorel Alexandru

当研究所には、かなり優秀な研究者が1,000人近くも働いていて、ルーマニア全土の毎日の天気予報を行っている。水文的データも40年以上蓄積しているとのことであった。ただし、レーダーやコンピューターをはじめ、各種施設の老朽化は顕著で、手作業の部分も多い。

その他、一般的に言えることは、現地研究機関の知識のレベルはかなり高いようなので、本格調査においても十分活用できそうである。ただ、問題は、体制の違いによるギャップがかなりありそうな点と、彼らの分析設備が古い点で、この点については本格調査団は十分注意を払う必要がある。

添付資料 7. 収集資料リスト

- S-1 ルーマニア概観（1993.10.1） 在ルーマニア日本大使館
- S-2 ルーマニア国首都圏都市施設整備計画事前調査報告書（平成4年3月）国際建設技術協会
- S-3 ルーマニアプロジェクト形成調査（平成5年3月） 国際協力事業団
- S-4 TOR（ブカレスト市廃棄物処理計画調査）（1992.11.9） ルーマニア国公共事業省
- S-5 ブカレスト市の市政概要 1992-1993 ルーマニア国ブカレスト市
- S-6 The Governing Program Strategy for Economic and Social Reform (March 1993)
- S-7 地図 ルーマニア全土（1：1,000,000）
- S-8 地図 ルーマニア全土、教育省発行（1：800,000）
- S-9 地図 ブカレスト市
- S-10 地図 ”
- S-11 地図 ”
- S-12 地図 ” 、廃棄物関連
- S-13 地図 Tunari（コピー）
- S-14 地図 Giulesti 地区
- S-15 ルーマニア国地形図
- S-16 Carte Hydrogeologique（1969） Institute Geologique
- S-17 RGR の概要

環境

英文のレポート

- K-1 Structure of the Environmental Management System
- K-2 Environmental Permit System
- K-18 Draft Environmental Law
- K-19 The NGO's and public participation
- K-20 Questionnaire on environmental issue
- K-21 Answers to the questionnaire
- K-22 Action plans for reducing health hazards from hot-spots industries
- K-23 Environmental protection domain
- K-24 National report
- K-25 Draft guidelines for the environmentally sound management of wastes

一覧表

- K-3 Regulations in force concerning the environmental protection in Romania

ルーマニア語の原文及びその一部を英文に翻訳した法律等

- K-4 Law no. 9 / 1973 Environmental protection
- K-5 G. D. 792 / 1992 Organization of the Ministry of Waters, Forests and Environmental Protection
- K-6 Order 170 / 1990 Environmental approval
- K-7 Order 113 / 1990 Documents to submit for environmental approval
- K-8 Order 340 / 1992 Import of waste

ルーマニア語の原文及びその翻訳英文

- K-9 Order 619 / 1992 Environmental Impact Study
- K-10 Stas 12574 / 1987 Air quality
- K-11 Stas 1342 / 1991 Drinking water quality
- K-12 Stas 4706 / 1988 Surface water quality
- K-13 Stas 9450 / 1988 Irrigation water quality
- K-14 Stas 12585 / 1987 Swimming water quality
- K-15 Stas 1848 / 1990 Sewage water quantity
- K-16 Stas 10009 / 1988 Outdoor noise level
- K-26 News paper article

ルーマニア語の原文

- K-17 Stas 6156 / 1986 Indoor noise level

地図等

- K-27 Map of Romania
- K-28 Annual windrose

(注)G. D. : Governmental Decree

Order : Ministerial Order

Stas : Standard

JICA

