

**APPENDIX 9, PART I (B/P)**

*Minutes of Meeting*



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## APPENDIX 9 MINUTES OF MEETENG


### 9.1 1st Steering Committee


MINUTES OF MEETINGS  
ON  
INCEPTION REPORT  
FOR  
THE STUDY ON WASTEWATER MANAGEMENT IN SKOPJE  
IN  
REPUBLIC OF MACEDONIA

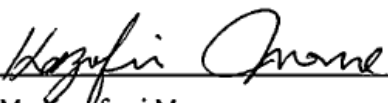
Skopje, September 28, 2007

  
\_\_\_\_\_  
Mr. Bozhidar Stojcev  
Head of Department  
Ministry of Transport and Communication

  
\_\_\_\_\_  
Ms. Kaja Sukova  
Head of Department  
Ministry of Environment and Physical  
Planning

  
\_\_\_\_\_  
Mr. Dimitrovski Slobodan  
Deputy Director  
PE "Water Supply and Sewerage" Skopje

  
\_\_\_\_\_  
Ms. Cvetanka Ikonomova Martinovska  
Head of Department  
City of Skopje

  
\_\_\_\_\_  
Mr. Kazufumi Momose  
Team Leader  
JICA Study Team

The Japan International Cooperation Agency (JICA) has dispatched the Study Team headed by Mr. Kazufumi Momose to conduct the Study on Wastewater Management in Skopje in the Republic of Macedonia.

The Study Team had a series of meeting with the Ministry of Transport and Communication (MTC), Ministry of Environment and Physical Planning, City of Skopje, PE “Water Supply and Sewerage” Skopje, and other authorities concerned of the Government of Macedonia. List of Participants is shown in Annex I. As a result, the Inception Report has been agreed in principle.

The Minutes of Meetings have been prepared for the better understanding of the Inception Report. The main items discussed and agreed by both sides are as follows:

1. Counterparts

Macedonian side agreed to provide counterparts staff listed in Annex II for the Study Team.

2. Counterpart Training

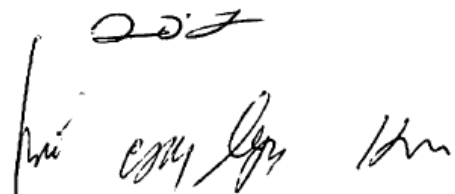
The Macedonian side will request JICA to conduct a counterpart training in Japan for the smooth technology transfer related to wastewater management. MTC will be responsible for application of the Counterpart training

3. Technical working group

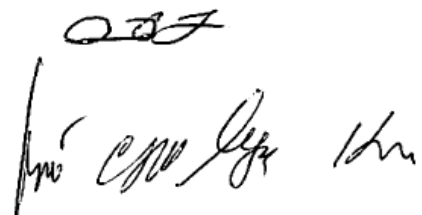
Macedonian side will organize a technical working group for the better understanding, exchange of opinions and technical matter during the study. The meeting by the technical working group with JICA Study Team will be held once in a month scheduled by Macedonian side and JICA Study Team. The JICA Study Team will prepare official request for nomination to MTC for distribution to the relevant organizations.

4. Steering Committee

Macedonian side will organize the Steering Committee from related ministries and authorities for the Study. The JICA Study Team will prepare official request for



- nomination to MTC for distribution to the relevant organizations.
5. Saraj, Kondovo and Novo Selo areas are included in the Study Area.
  6. Macedonian side agreed to provide the following data by the designated date.  
Confirmation of the exclusive use for the sewerage project of the proposed wastewater treatment plant and main collectors based on land ownership registration by 5<sup>th</sup> of October 2007.
  7. Target year was set at year 2020. However, the target year for main collectors was set at year 2030 considering difficulty in dual pipeline installation.
  8. The Study will include possibility for realization of the project through e.g. EU Pre-Accession Assistance and JBIC loan.
  9. Undertaking of Macedonian Side
    - (1) The Study Team requested Macedonian side to identify the responsible ministries and agencies for each item of the "Items of Information Required on Planning of Sewerage and Water Supply". Macedonian side answered the responsible ministries and agencies for each item, which is listed in Annex III.
    - (2) Macedonian side agreed to provide necessary office space for the Study Team in the laboratory building of PE "Water Supply and Sewerage" Skopje and other offices to accommodate at least 15 staffs..
  10. The requests by Macedonian side  
Macedonian side requested the Study Team to prepare official letters when official comments are requested for the Study Reports. The Study Team answered that the request was accepted.

Handwritten signature and initials in black ink, appearing to be 'Miro' followed by a large flourish and 'L. M.'.

Annex I

## List of Participants

### Macedonian side:

#### Ministry of Transport and Communication

Mr. Saso Srcev

State Secretary

Mr. Bozhidar Stojcev

Head of Department

#### Ministry of Environment and Physical Planning

Mr. Dejan Panovski

State Secretary

Ms. Kaja Sukova

Head of Department for Sustainable Development

Ms. Ilber Mirta

Head of Department (Water Department)

Mr. Vlatko Trpeski

Advisor

Mr. Kiril Kalkasliev

Advisor

Ms. Gordana Kozuharova

Head of Department for Cooperation and Project Coordination

Mr. Zoran Boshev

Head of Unit for EIA

#### City of Skopje

Ms. Cvetanka Ikonomova Martinovska

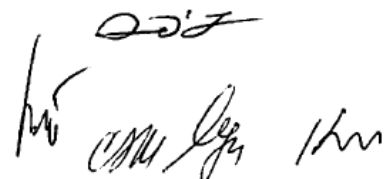
Head of the Sector for Environmental and Natural Protections

Mr. Toni Kostov

Head of Unit for Water Supply and Urban Waste Water

Ms. Jelena Perinska

Assistant Head of Department for Communal Issues





**Annex I**

Mrs Ljiljana Oncevska Nadzinska  
Head of Unit for Air Quality, Noise and Non ionizing radiation Protection

PE "Water Supply and Sewerage" Skopje

Mr. Igor Arnaudov  
General Manager

Mr. Dimitrovski Slobodan  
Deputy Director

Ms. Sanja Spirovska  
Engineer Analyst

Ministry of Foreign Affairs

Ms. Dragica Zafirovska

**Japanese side:**

JICA Study Team

Mr. Kazufumi Momose  
Team Leader

Mr. Nobuyuki Sato  
Member for Sewerage Pipe and Pumping Station

Mr. Shunichi Nakatake  
Member for Sewerage Treatment Plant

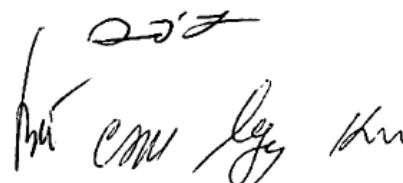
JICA Head Quaters

Ms. Hiroko Kamata  
Senior Advisor, Project Formulation Advisor, JICA Indian Office (Member of Advisory Committee)

Ms. Eriko Tamura  
Environmental Management Team II, Group II, Global Environment Department

JICA Skopje Contact Office

Mr. Ladislav Lesnikovski  
Technical Coordinator

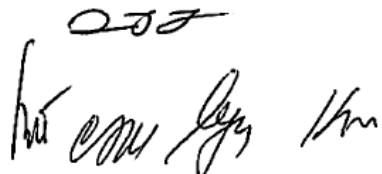


**Annex I**

**JICA Expert**

**Ms. Nahomi Nishio**

**Advisor for Japan ODA, Secretariat for European Affairs**

Handwritten signature in black ink, appearing to read "Nishio Nahomi".

Annex II

**List of Counterparts**

Ministry of Transport and Communication

Mr. Saso Srcev

State Secretary

**Mr. Bozhidar Stojcev**

**Head of Department**

Mr. Kosta Pantev

Assistant Head of Department for Communal Works and Infrastructure

Ms. Marica Tasevska

Head of Unit for Documentation and Construction Land Management

Ministry of Environment and Physical Planning

**Ms. Kaja Sukova**

**Head of Department for Sustainable Development**

Mr. Gordana Kozuharova

Head of Department for Cooperation and Project Coordination

Mr. Ilber Mirta

Head of Water Department

City of Skopje

**Ms. Cvetanka Ikonomova Martinovska**

**Head of the Department for Environmental and Natural Protection**

Ms. Ljiljana Onchevska Nadzhinska

Head of Unit for Air quality, Noise and Non-ionizing Radiation Protection

Mr. Toni Kostov

Head of Unit for Water Supply and Urban Waste Water

PE "Water Supply and Sewerage" Skopje

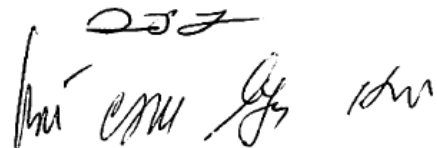
**Mr. Dimitrovski Slobodan**

**Deputy Director**

Ms. Sanja Spirovska

Engineer Analyst

Note: persons expressed in bolded characters are nodal person in each Ministry to the Study Team



Annex III

**Items of Information Required on Planning of Sewerage and Water Supply**

No.	Item	Description	Responsible Organization
<b>1</b>	<b>General</b>		
1-1	Population in the City area	Historical Data for Project Estimation	City of Skopje
1-2	Population in Municipality	Historical Data for Project Estimation	City of Skopje
1-3	Recent Population in District	For update of PHARE report	City of Skopje
1-4	Population Projection	Country and Skopje	City of Skopje
1-5	Water Consumption	Daily Maximum, Daily Average and Daily Minimum	PE "Water supply and sewerage" Skopje
1-6	Water Consumption	By Category (house, industry, commerce, institution etc.)	PE "Water supply and sewerage" Skopje
1-7	City Plan	Detailed data, particularly on population	City of Skopje
1-8	Financing entity of sewage collection and treatment	Community? Or the government?	community PE "Water supply and sewerage" Skopje
1-9	Financing entity of storm water collection and treatment	Community? Or the government?	community City of Skopje
<b>2</b>	<b>Drawing</b>		
2-1	Engineering Drawings of Existing Sewage Pipelines	Vertical and section profiles	PE "Water supply and sewerage" Skopje
2-2	Stormwater Pipe Laying	Map and Inventory	PE "Water supply and sewerage" Skopje
2-3	PHARE Report	Detailed drawing on proposed Pipe	PE "Water supply and sewerage" Skopje
2-4	Feasibility Study Report on Saraj WWTP	Detailed drawing on proposed WWTP	Municipality Saraj
2-5	Feasibility Study Report on Novo Selo WWTP	Detailed drawing on proposed WWTP	Municipality Gorce Petrov
2-6	Report on Sewage Networks and Collectors in Kondovo and Neighboring Towns	Detailed drawing on proposed Pipe	Municipality Saraj
2-7	Report on Sewage Networks and Collectors in Novo Selo and Neighboring Towns	Detailed drawing on proposed Pipe	Municipality Gorce Petrov
2-8	Cadastral Map	Proposed Waste water treatment plant	MTC
2-9	Cadastral Map	Proposed Road where main collectors are planned	MTC
2-10	Topographic Map	Scale 1:25,000 etc.	City of Skopje
2-11	Geological map		City of Skopje
2-12	Land Use Map		City of Skopje
2-13	Profile of the River Vardar	Skopje	City of Skopje
2-14	Cross Section of the Vardar River	Skopje	City of Skopje
2-15	Map of Bench mark	Skopje	MTC (City of Skopje)
<b>3</b>	<b>Social, Economical and Industrial Status</b>		

*Handwritten signatures and initials:*  
MTC, City of Skopje, etc.

Annex III

**Items of Information Required on Planning of Sewerage and Water Supply**

No.	Item	Description	Responsible Organization
3-1	Household Revenue	Average and Distribution	City of Skopje
3-2	Household Expenditure	Average and Distribution	City of Skopje
3-3	Water-born Diseases	Historical data	City of Skopje
3-5	General of Electricity Supply	Availability to the waste water treatment plant	City of Skopje
3-7	Guidelines of water and sewerage tariff by MTC		MTC, City of Skopje
<b>4</b>	<b>Water Flow and Quality</b>		
4-1	Water Flow Regime	Measuring point, its catchment area, Past Daily flow, Monthly flow for last 10 years	MEPP
4-2	Water Quality Monitoring stations	Location	MEPP
4-3	Water Quality Data -- River		MEPP
4-4	Water Quality Data -- Sewer Outfall		PE "Water supply and sewerage" Skopje
4-5	Water Quality Data -- Industrial Effluent		MEPP
<b>5</b>	<b>Water Supply and Sewerage</b>		
5-1	Served Population		PE "Water supply and sewerage" Skopje
5-2	Served Area	with maps	PE "Water supply and sewerage" Skopje
<b>6</b>	<b>Sewerage</b>	<b>(Current situation)</b>	
6-1	Drainage area with sewers, ha		PE "Water supply and sewerage" Skopje
6-2	Data on rainfall	past 20 - 30 years, hourly and daily	MEPP
6-3	Population in the drainage area		PE "Water supply and sewerage" Skopje
6-4	Number of houses with flush toilet		PE "Water supply and sewerage" Skopje
6-5	Total length of sewers and collectors, m		PE "Water supply and sewerage" Skopje
6-6	Length of aged sewers, m	Aged 40 years or more	PE "Water supply and sewerage" Skopje
6-7	Rate of sewers replacement, %	Each year in the past five years	PE "Water supply and sewerage" Skopje
6-8	Rate of new laying of sewers (expansion)	Each year in the past five years	PE "Water supply and sewerage" Skopje
6-9	Number of employees		PE "Water supply and sewerage" Skopje
6-10	Rate of technical personnel to total employees		PE "Water supply and sewerage" Skopje
6-11	Record on O&M of Existing WWTP	Water quality and quantity of inflow and outflow	City of Skopje
6-12	Record on O&M of Existing PS	Water quality and quantity of inflow and outflow	PE "Water supply and sewerage" Skopje

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СПИСОК НА ПРИСУТНИ  
28.09.2007

ИМЕ И ПРЕЗИМЕ / NAME AND SURNAME	ИНСТИТУЦИЈА / INSTITUTION	ЕМАИЛ / EMAIL
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SAJKA SPIROVSKA	P.E. "VODOVOD I KANALIZACIJA" - SKOPJE	saajka.spirovskaa@vodovod-skopje.com.mk
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Toni Vlastov	City of Skopje	tonje.vlastov@yuhoo.com
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GORDANA GOZHAROVA	MOEPP	g.gozharova@moepp.gov.mk
Kaja Šukova	MOEPP	k.sukova@moepp.gov.mk

## 9.2 2nd Steering Committee



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Phone: 81-3-3580-2418

### MINUTES of 2<sup>nd</sup> STEERING COMMITTEE MEETING

1. Date and Time : 9:00 ~ 11:30, October 18<sup>th</sup>, 2007

2. Place : MTC Conference Room

#### 3. Participants:

##### (Counterparts)

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| 1) Mr. Bozidar Stojcev (Host)         | : MTC                                |
| 2) Ms. Kaja Sukova                    | : MEPP                               |
| 3) Mr. Blagoja Stoilov                | : MAFWE                              |
| 4) Mr. Josif Milevski                 | : Hydrometeorological Service, MAFWE |
| 5) Ms. Liljana Oncevska Nadzinska     | : City of Skopje                     |
| 6) Mr. Toni Kostov                    | : City of Skopje                     |
| 7) Ms. Cvetanka Ikonomova Martinovska | : City of Skopje                     |
| 8) Mr. Slobodan Dimitriovski          | : PE "Vodovod i Kanalizacija"        |
| 9) Ms. Sanja Spirovska                | : PE "Vodovod i Kanalizacija"        |

##### (JICA Representatives)

- |                             |        |
|-----------------------------|--------|
| 1) Ms. Nahomi Nishio        | : JICA |
| 2) Mr. Ladislav Lesnikovski | : JICA |

##### (JICA Study Team)

- |                          |
|--------------------------|
| 1) Mr. Kazufumi Momose   |
| 2) Mr. Katsuyoshi Tomono |
| 3) Mr. Shunichi Nakatake |
| 4) Mr. Nobuyuki Sato     |
| 5) Mr. Kenichi Saito     |
| 6) Ms. Shoko Yamada      |
| Assistance:              |
| 1) Mr. Mihail Burzevski  |
| 2) Mr. Kiril Cupev       |
| 3) Mr. Saso Dimitrov     |



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### Notes of the 2<sup>nd</sup> Steering Committee Meeting

The meeting was opened by the host, Mr. Bozidar Stojcev from MTC, who introduced the Macedonian counterpart members.

The JICA Study Team Leader, Mr. Momose, introduced JICA Study Team members, including the newcomers, Mr. Tomono and Ms. Yamada and the JICA representatives. Also, Mr. Momose announced that two more members will arrive in two weeks. Mr. Momose also thanked the counterpart for supplying the Study Team with valuable data and mentioned the need of one or two more offices for the JICA Study Team members, thanking Ms. Sukova from MEPP for the already provided ones.

Mr. Nakatake and Mr. Sato, respectively asked about meeting and data from the department for urban planning in MEPP and the Agency for Urban Planning and also data from Hydro-Meteorological Institute (HMI). Mr. Milevski from HMI suggested requesting the data through MTC, for procedural and financial reasons.

Mr. Stojcev and Mr. Dimitriovski agreed that PE “Vodovod i Kanalizacija” will supply the revised route of the collector and MTC will forward it to the State Authority for Geodetic Works (SAGW), with a request for ownership details, as well as topographic maps of the route.

Mr. Momose also confirmed about the data which was requested from the City of Skopje, and Ms Cvetanka Ikonomova Martinovska informed that they already acquired the requested geological (1:100,000 scale) and land use map of Trubarevo area. The topographic maps have already been obtained from SAGW, both in digital and printed format. Mr. Stojcev also suggested contacting the Geological Institute and the Mining Institute if some more geological maps are needed.

Ms. Yamada made a presentation on the objectives and procedures of environmental and social considerations based on Macedonian and JICA’s requirements. During the presentation, some discussions were held. In the Macedonian EIA process, the investor should send notification about the project to MEPP. The discussion of who will be the investor was held but not concluded. This matter should be discussed with MEPP as they have the experience in EIA. The organizer of stakeholder meetings will be also discussed with MEPP. JICA Study Team requested to participants to provide land information of proposed treatment plant and sewer route, and to hold the meeting with Skopje City and PE of Drisla Disposal Site for the disposal of sludge from treatment plant.

Mr. Tomono made a presentation Financial, Institutional and Legislative aspects.

Mr. Tomono presented the direction of study on financial, legal and institutional aspects, and received the following comments:

(Institutional Aspects)

- Mr. Tomono stated that the PE (Vodovod) may have been overstaffed. Mr. Dimitriovski said that the staff size of an organization will depend on what it is undertaking, and that





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the Vodovod's staff size, as he thinks, is appropriate. Mr. Tomono suggested for further discussion of this matter in the course of the Study.

- Mr. Tomono stated that operations of water supply and sewerage can be divided with certain advantage at the early stage of water supply and sewerage development, and that they can be emerged again when the operation of sewerage has become almost self-reliant.
- Mr. Tomono said that there appear to be some areas for which the duties of the two or three Sectors of Vodovod are redundant. Mr. Stojcev suggested Mr. Tomono to reconfirm the matter with respective Sectors. Mr. Tomono agreed.

(Financial Aspects)

- Mr. Tomono mentioned that water metering is crucially important, and that the one reason for the low rate of collection is likely the insufficient metering. The representatives of Skopje City stated that it is difficult to install water meters at every apartment houses due to the particular design of the piping in the building. Mr. Tomono suggested to further consider this problem in that an alternative charging method can be examined.
- Mr. Tomono made a question to attendee of the Committee if it is possible for Vodovod to automatically receive water and sewerage charges from consumer's bank account (if yes, Vodovod can expect to substantially increase the rate of collection.). Mr. Stojcev and other Committee members answered that it is not practicable in Macedonia.

During the presentations there were several questions and answers.

At the end Mr. Momose pointed out the importance of further discussions with the counterparts, in order to successfully develop the scheme of the Study.

It was arranged that the next Steering Committee Meeting will be held on 31<sup>st</sup> of October, in MTC. MTC will inform the participants about the exact time. Mr. Stojcev also explained that the Steering Committee is still not formally established. He said that the official members of SC will be probably confirmed until the next meeting and the official list will be submitted to the JICA Study Team.

Minutes of Meeting will be provided by the JICA Study Team to all the attendants of the 2<sup>nd</sup> S/C Meeting.

Steering Committee

18<sup>th</sup> October, 2005

Name	Position	Sign
Kenichi Saito	Tokyo Engineering Consultants	斎藤 賢一
Shunichi Nakatoku	"	中郷 俊一
Nobuyuki SATO	CTI	sato
LILJANA ONČEVSKA NADŽINSKA	City of Skopje Dept. of envir. protect.	
Toni Kostov	City of Skopje Dep. for communal affairs	
CVETANKA IKONONOVA MARTINOVSKA	City of Skopje DEPARTMENT FOR ENVIRONM. PROTECTION	
KAJA ŠAUOVA	MoEPP	
Josif Milevska	UHAMR	
Blagaja Stoilov	MAFWE	
Sanja SPIROVSKA	PE. Vodovod i kanalizacija - Skopje	
SLUBODAN DIMITROVSKI	— 11 — 71 —	
LADISLAV LEŠNIKOVSKI	JICA	
Nahomi NISHIO	"	121
Kazufumi MOMOSE	JICA Study Team	K. Momose
Katsuyoshi TOMONO	"	
MIHAILO BURZEVSKI	"	
SHOKO YAMADA	"	山田 紹子

### 9.3 3rd Steering Committee



Japan International Cooperation Agency  
Project Team of the Study on Wastewater Management in Skopje

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## MINUTES of 3<sup>rd</sup> STEERING COMMITTEE MEETING

- 
1. **Date and Time** : 9:00 ~ 11:00, October 31<sup>st</sup>, 2007
  2. **Place** : MTC Conference Room
  3. **Participants:**
    - (Counterparts)
      - 1) Mr. Bozidar Stojcev (Host) : MTC
      - 2) Ms. Kaja Sukova : MEPP
      - 3) Ms. Liljana Oncevska Nadzinska : City of Skopje
      - 4) Mr. Toni Kostov : City of Skopje
      - 5) Ms. Cvetanka Ikonomova Martinovska : City of Skopje
      - 6) Mr. Slobodan Dimitrovski : PE "Vodovod i Kanalizacija"
      - 7) Ms. Sanja Spirovska : PE "Vodovod i Kanalizacija"
    - (JICA Representatives)
      - 1) Ms. Nahomi Nishio : JICA
      - 2) Mr. Ladislav Lesnikovski : JICA
    - (JICA Study Team)
      - 1) Mr. Kazufumi Momose
      - 2) Mr. Katsuyoshi Tomono
      - 3) Mr. Shunichi Nakatake
      - 4) Mr. Nobuyuki Sato
      - 5) Mr. Kenichi Saito
      - 6) Ms. Shoko Yamada
      - 7) Mr. Tetsuo Izawa
      - 8) Ms. Tomomi Inoue
    - Assistance:
      - 1) Mr. Mihail Burzevski
      - 2) Mr. Kiril Cupev
      - 3) Mr. Saso Dimitrov



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**Project Team of the Study on Wastewater Management in Skopje**

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### Notes of the 3<sup>rd</sup> Steering Committee Meeting

The meeting was opened by the host, Mr. Bozidar Stojcev from MTC, who again stressed that this 3<sup>rd</sup> meeting is also considered informal, until the Minister approves the list of Steering Committee members. Mr. Stojcev also excused Mr. Josif Milevski from the Hydro-meteorological Institute, who was absent due to health reasons. Although MAFWE confirmed their presence on the meeting, they did not attend. Mr. Stojcev asked if the agenda of the 3<sup>rd</sup> S/C meeting is as previously agreed. Also, he mentioned that the State Authority of Geodetic Works is working on the land property list for the collectors route.

Mr. Momose introduced the two newcomers of the Study Team, Mr. Izawa Tetsuo and Ms. Inoue Tomomi. After that he presented the agenda of the 3<sup>rd</sup> SC meeting. As a first point of the agenda was the information on the Stakeholder meeting that will be held on Friday, 9<sup>th</sup> of November in the City Hall in the period from 9:30 to 12:30. The agenda of the meeting was submitted to the participants. The second point of the meeting was the planned road and main collector construction. Mr. Momose referred to the topics discussed with the City road authorities on Tuesday. The representative of the City of Skopje, Ms. Liljana Oncevska Nadzinska added that the construction of the road and the sewerage are not mentioned in the city budget for the year 2008, but after the meeting there was an agreement to include the preparation of a project plan for construction of road and sewerage and a study for land acquisition. Also she mentioned that the city will need help from the government, because the rough estimation of the construction cost is over the half of the annual budget of the city. Therefore they have arranged a meeting with the MTC, MEPP and PE Vodovod regarding this issue. She also mentioned that the earliest possible time for completion of the construction will be in three years time, but only if the city has the finance. Ms. Kaja Sukova from MEPP pointed out that the government must make a decision on whether they will support the construction, or/and the land acquisition. She mentioned the example of Dojran Project land acquisition, when the government allocated around 1 million Euros for that purpose. Mr. Slobodan Dimitrovski from the PE Vodovod i Kanalizacija said that the land acquisition and collector construction should be the priority and that the road should wait for some better times. Mr. Momose agreed, stressing that the land acquisition is most important.

After that Mr. Izawa made a presentation about the Industrial Wastewater Treatment Plan and Water Quality Analysis. First of all he briefly explained the procedures of the Study, after which he pointed out the necessary information for capacity assessment. He also explained the Basic and First Draft Action plan of Industrial Wastewater Management and the First Draft of Action Plan of Water Quality Monitoring System. At the end of the presentation, Mr. Izawa explained the importance of having Candidates of Capacity Development Programs during the Study.

Before Ms. Inoue made her presentation Mr. Bozidar asked that the presentations are sent to the participants of the SC meetings prior to the meetings, as well as preparation and sending of Meeting Minutes from the SC meetings. Also he showed a sample of Monthly Report from another JICA project and asked about possibility for preparation of such a report for this Study also.

Mr. Momose agreed about the sending of the presentations and the Minutes of Meeting, stressing that the Minutes of Meeting from the previous meeting has been already prepared, but due to internal miscommunication it has not been sent to the participants.



Japan International Cooperation Agency

**Project Team of the Study on Wastewater Management in Skopje**

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Regarding the monthly reporting, Mr. Momose pointed out that the Study is in the phase of collecting data and that at the end of this phase (late November) Study Team will submit a report. Also he pointed out that the Study Team will have general basic concept plan on the next Steering Committee meeting on 19<sup>th</sup> of November, when a JICA Balkan Office representative will be present.

After this Ms Inoue made a presentation on the Purpose of Work in Hydrology for The Study on Waste Water Management in Skopje. At first she explained the evaluation of the flow rate of Vardar river and its tributaries, the importance of collecting of meteorological and other data such as flow rate, water level, structure of river, etc., as well the calculation of the low-water flow. The second part of the presentation of Ms. Inoue was about the hydrology of the stormwater pipe, i.e. the collection of data regarding stormwater, evaluation of the flow capacity and the piping system.

At the end it was mentioned again that the next S/C meeting will be held on 19<sup>th</sup> of November.

СПИСОК НА ПРИСУТНИ

од состанок одржан на 31.10.2007 година во 09,00 часот во просториите на  
Министерството за транспорт и врски  
за развојната студија за третман на отпадни води во Скопје

б	Име и презиме	Функција	Министерство/Институција	Потпис
1				
2				
3				
4				
5	Toni Kostov	Head of unit for combined effect	City of Skopje	
6	Stojan Kuznar	LTC	LTC	
7	СУСТАНА КРОСЧОВА МАТИНОВСКА	City of Skopje Director of the water supply and sewerage department	City of Skopje	
8	Климентина Спасова ПАСИЧЕНСКА	Dir. на СОН за 603. БУЈАВА 4 и 3P11	ТРАД. Стомат.	
9	Rajna Šucurova	Head of Department	MOEP	
10	Katsurashi Tomono	Financial manager and pump station	JICA Study Team	
11	Sato Nobuyuki	Water supply and sewerage department	JICA Study Team	
12	Kenichi Saito	Treatment Works	JICA Study Team	
13	Kenichi SAITO	Civil Engineer	JICA Study Team	
14	Shoko Yamada	Env. Social coord.	"	
15	Lab. for Sewerage	Technical support	JICA Study Team	
16	Nahomi Nishio	Env. Social coord.	JICA Study Team	
17	Shoko Yamada	Env. Social coord.	JICA Study Team	
18	Sange SPILKOVKA	Chief Engineer	Water Supply	
19				
20				
21				

## 9.4 4th Steering Committee



Japan International Cooperation Agency

Project Team of the Study on Wastewater Management in Skopje

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Phone: 81-3-3580-2418

# MINUTES of 4<sup>th</sup> STEERING COMMITTEE MEETING

1. **Date and Time** : 11:30 ~ 13:30, November 20<sup>th</sup>, 2007

2. **Place** : MTC Conference Room

### 3. **Participants:**

#### (Counterparts)

- |                                       |                                  |
|---------------------------------------|----------------------------------|
| 1) Mr. Bozidar Stojcev (Host)         | : MTC                            |
| 2) Ms. Stojanka Taskovska             | : PE Vodovod i Kanalizacija      |
| 3) Ms. Sanja Spirovska                | : PE Vodovod i Kanalizacija      |
| 4) Mr. Vasko Nacevski                 | : MAFWE                          |
| 5) Mr. Vlatko Trpeski                 | : MEPP                           |
| 6) Ms. Liljana Oncevska Nadzinska     | : City of Skopje                 |
| 7) Mr. Toni Kostov                    | : City of Skopje                 |
| 8) Ms. Cvetanka Ikonomova Martinovska | : City of Skopje                 |
| 9) Ms. Radmila Bojkovska              | : Hydro-Meteorological Institute |
| 10) Mr. Vasko Stojkov                 | : Hydro-Meteorological Institute |

#### (JICA Representatives)

- |                             |        |
|-----------------------------|--------|
| 1) Ms. Nahomi Nishio        | : JICA |
| 2) Mr. Ladislav Lesnikovski | : JICA |

#### (JICA Study Team)

- 1) Mr. Kazufumi Momose
- 2) Mr. Shunichi Nakatake
- 3) Mr. Nobuyuki Sato
- 4) Mr. Tetsuo Izawa
- 5) Ms. Tomomi Inoue
- 6) Mr. Kenichi Saito

#### Assistance:

- 1) Mr. Mihail Burzevski
- 2) Mr. Saso Dimitrov



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### Notes of the 4<sup>th</sup> Steering Committee Meeting

The host, Mr. Bozidar Stojcev from MTC opened the meeting, apologizing for not having the meeting on the 19<sup>th</sup>, due to technical issues. He announced that all the counterpart institutions officially appointed Steering Committee members and that the Minister will sign the decision for establishment of Steering Committee (S/C). The S/C has two new members: Ms. Radmila Bojkovska, as official representative from the Hydro-meteorological Institute, instead of Mr. Josif Milevski, and Mr. Vasko Mancevski, civil engineer, officially representing MAFWE, the Water Economy Management.

After that the Leader of the Study Team introduced the present members of the Study Team and also the ones that have already returned to Japan. Then he explained the points of the agenda of the 4<sup>th</sup> S/C meeting, the preliminary planning results and the capacity assessment of the PE and the areas for action plan. For the first part of the agenda, at the beginning Mr. Momose again gave brief overview of the Objectives of the Study, Phase 1 of the Study (Formulation of the Basic Plan) and more detailed explanation and current status of the Basic Policies for the Study. During the presentation of the Basic Policy 6: Treatment Plant Site and Main Collectors Route, Mr. Momose explained that some survey work will be needed in the next phases of the Study, which will be done by the subcontractors. He had a question about the access to private property and safety of the surveyors. Mr. Stojcev answered that MTC will take care and be responsible for these matters. The second part of the presentation was done by Mr. Nakatake, who explained the data which the Study team have collected, compiled and analyzed until now: Definition and Basic Plan maps of the Study area, general information of the existing facilities of the PE, population data and sources for that data, as well as overall an detailed (breakdown by municipality) population projections. Also, Mr. Nakatake gave an overview of the water supply record, classification of the water consumption (household, business, economy and industry), per capita consumption and at the end he explained the plans regarding the treatment area with four independent sewerage areas, i.e., Central, Saraj, George Petrov and Dracevo. Mr. Momose finished the first point of the agenda with the conclusion that the initial general sewage plan is finished and that in February the Study team will start defining the size, make the cost estimation etc.

For the second part of the agenda, the Capacity Assessment of the PE and Areas for Action Plan, Mr. Momose said that the explanation will not be into details since most of these issues are related only to the PE. The presentation in general was on external factors which pose heavy impact on the PE, such as the policies and the institutions of Macedonia related to the sewerage sector, the capacity of the PE, special emphasis on the financial operation of the PE, as well as some part of the procurement, human resources (personnel) management and the information and communication management. Mr. Momose ended the presentation with the initial actions which are needed in the area required for capacity development.





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**Project Team of the Study on Wastewater Management in Skopje**

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Mr. Momose then had a question regarding the MTC's role related to the finance and construction of the sewerage facilities and the transfer of budget on grant basis, as well as the implementing agency. Before answering the question Mr. Stojcev pointed out that during the presentation for the capacity assessment of PE, in the part of the Legislative provisions for sewerage there should be a third Law mentioned: The Law on Local Self-Government. Answering the question he stressed that the municipalities are responsible for construction of water supply and sewerage facilities and the Government is appointing (establishing if non-existent) implementing agency which will acquire, accept and service the loan. Ms. Cvetanka Ikononova Martinovska from City of Skopje again reminded that the Mayor has already stated that the investor will be the City, but it must be backed from the Government.

Mr. Momose also had a question to the representatives of the PE, regarding the financial independence. Ms. Stojanka Taskovska answered that the PE is financially independent, that the PE is budgeted from the billed water, but the tariffs for the water and sewerage are set by the City.

Mr. Vlatko Trepeski from MEPP asked whether second proposal site for the Treatment Plant exists if the geological and other surveys prove that the initial choice is inadequate.

Mr. Momose explained that the initial choice has been made, but there will be soil investigations and other surveys. He commented that the Study Team is aware of the characteristics of the chosen site (very flat, weak soil, former river bed, etc.), but he said that according to the experiences in Japan and other countries the choice for these sites is always an area which is not suitable for residential and other purposes. In the worst case scenario the Study Team will propose finding new site, for which the obligation is on the Macedonian side.

Mr. Momose asked whether the SC members have received the previous Minutes of Meetings and if they had any comment. Mr. Stojcev said that they received them and that if they had comments they would have commented prior to this meeting, or at the beginning of the meeting.


At the end Mr. Momose explained that the team members will leave one by one until the end of next week and that officially they will meet in January next year.

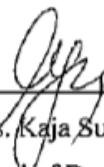
Mr. Bozidar Stojcev closed the meeting with hopes that the dear Japanese guests had a pleasant stay and good impressions about Macedonia in the past two months.

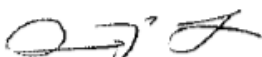
9.5 5th Steering Committee

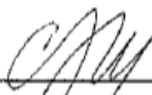
MINUTES OF MEETINGS  
ON  
DRAFT PROGRESS REPORT  
FOR  
THE STUDY ON WASTEWATER MANAGEMENT IN SKOPJE  
IN  
REPUBLIC OF MACEDONIA

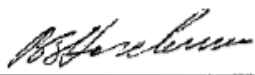
Skopje, February 25, 2008


  
\_\_\_\_\_  
Mr. Bozhidar Stojcev  
State Councillor  
Ministry of Transport and Communication

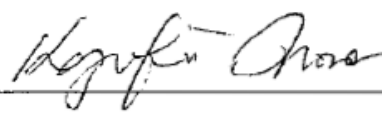
  
\_\_\_\_\_  
Ms. Kaja Sukova  
Head of Department  
Ministry of Environment and Physical  
Planning

  
\_\_\_\_\_  
Mr. Dimitrovski Slobodan  
Deputy Director  
PE "Water Supply and Sewerage" Skopje

  
\_\_\_\_\_  
Ms. Cvetanka Ikonomova Martinovska  
Head of Department  
City of Skopje

  
\_\_\_\_\_  
Mr. Vasco Nacevski  
Head of Department  
MAFWE

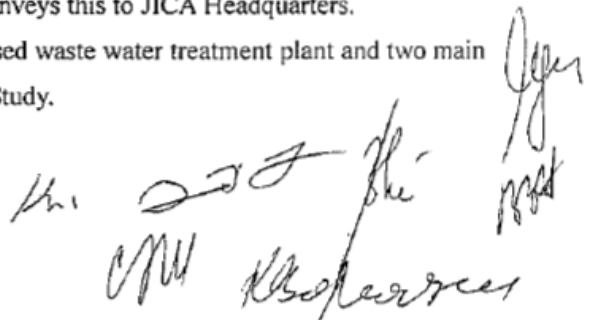
  
\_\_\_\_\_  
Ms. Radmila Bojkovska  
Head of Department  
Hydrometeorological Institute

  
\_\_\_\_\_  
Mr. Kazufumi Momose  
Team Leader  
JICA Study Team

The Japan International Cooperation Agency (JICA) has dispatched the Study Team headed by Mr. Kazufumi Momose to conduct the Study on Wastewater Management in Skopje in the Republic of Macedonia.

The Study Team had meeting on 21<sup>st</sup> and 25<sup>th</sup> of February 2008 with the Steering Committee members which are appointed by the Ministry of Transport and Communication (MTC), Ministry of Environment and Physical Planning, City of Skopje, PE "Water Supply and Sewerage" Skopje, Ministry of Agriculture, Forest and Water Economy and other authorities concerned of the Government of Macedonia. List of Participants is shown in Annex I. As a result, the followings have been agreed;

1. The presentation of the Draft Basic Plan Report was agreed including the followings;
  - i. Priority projects are the central waste water treatment plant in Truvarevo and two main collectors.
  - ii. Basic policy of action plans on institutional, financial aspects of P.E. "Vodovod i Kanalizacija".
  - iii. Basic policy of action plans on industrial waste water management and wastewater quality monitoring system.
2. F/S will be conducted for the above three items.
3. Comments on the Draft Progress Report, if any, will be given by 6<sup>th</sup> of March 2008 Macedonian time because the Macedonian side needs to read through thoroughly the Draft Progress Report, which was delivered on 19<sup>th</sup> of February 2008.
4. Investor issue were discussed and understood as follows;
  - i. City of Skopje expressed in the Steering Committee held in October 2007 that it wanted to be an investor.
  - ii. Assuming the above, as an investor, City of Skopje held environmental and social consideration stakeholder meetings.
  - iii. On the other hand, only the government (Cabinet Meeting) can decide an investor, which needs approval of the parliament for loan acquiring with Law on loaning to foreign financial institution.
  - iv. The SC does not have mandate to discuss the investor issue
5. In relation to the above, the Macedonia side expressed that, during the phase 2, comparative study including financial analysis shall be conducted with a conclusion who is the best investor. The Study Team took note on this comment and conveys this to JICA Headquarters.
6. Surveys on the priority projects, namely the proposed waste water treatment plant and two main collectors can start at the beginning of Feasibility Study.



## 7. List of Participants

### Macedonian side:

#### Ministry of Transport and Communication

Mr. Bozhidar Stojcev  
State Counselor for Housing/Communal Affairs and Infrastructure

Ms. Gunul Sali  
Civil Engineering

#### Ministry of Environment and Physical Planning

Ms. Kaja Sukova  
Head of Department for Sustainable Development and Investments

Mr. Vlatko Trpeski  
Advisor

#### Ministry of Agriculture, Forestry and Water Economy, Administration for Water Economy

Mr. Vasco Nacevski  
Head of Department for Maintenance and Use of Water Regime and Water Economic facilities

#### City of Skopje

Ms. Cvetanka Ikonomova Martinovska  
Head of Department for Environmental and Natural Protections

#### PE "Water Supply and Sewerage" Skopje

Mr. Dimitrovski Slobodan  
Deputy Director

Ms. Sanja Spirovska  
Engineer Analyst

#### Hydrometeorological Institute

Ms. Radmila Bojkovska  
Head of Department

### Japanese side:

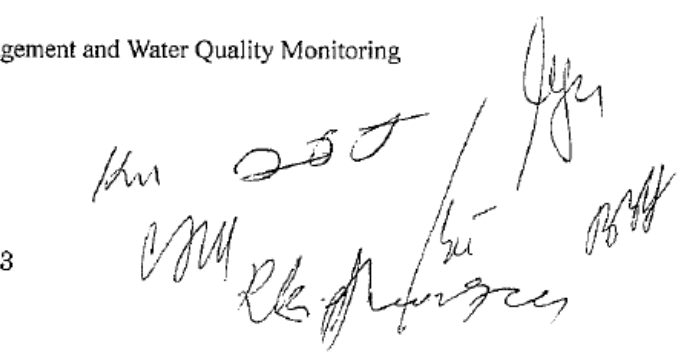
#### JICA Study Team

Mr. Kazufumi Momose  
Team Leader

Mr. Nobuyuki Sato  
Member, Planning of Conduit

Mr. Tetsuo Izawa  
Member, Planning of Industrial Wastewater Management and Water Quality Monitoring

Mr. Katsuyoshi Tomono  
Member, Finance and Institute



Mr. Norio Tanaka  
Member, Mechanical and Electrical Design and Cost Estimate

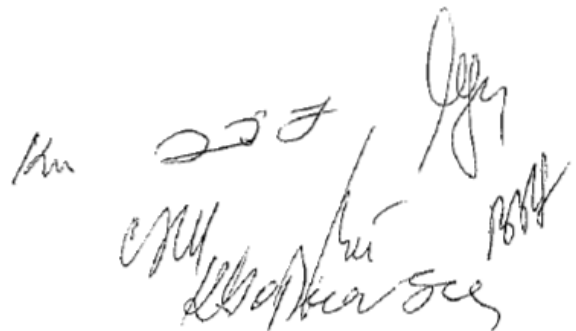
Ms. Shoko Yamada  
Member, Environmental and Social Considerations

Mr. Kenichi Saito  
Member, Business Assistant and Sewerage Planning 2

JICA Balkan Office  
Mr. Masao Shikano  
Resident Representative

JICA Skopje Contact Office  
Mr. Ladislav Lesnikovski  
Technical Coordinator

JICA Expert  
Ms. Nahomi Nishio  
Advisor for Japan ODA, Secretariat for European Affairs



9.6 6th Steering Committee

## MINUTES of 6<sup>th</sup> STEERING COMMITTEE MEETING

1. Date and Time : 09:00 ~ 12:00, June 12<sup>th</sup> 2008

2. Place : MTC Conference Room

3. Participants:

(Counterparts)

- |                                       |                             |
|---------------------------------------|-----------------------------|
| 1) Mr. Bozidar Stojcev (Host)         | : MTC                       |
| 2) Ms. Gjunil Salih                   | : MTC                       |
| 3) Mr. Slobodan Dimitrievski          | : PE Vodovod i Kanalizacija |
| 4) Ms. Sanja Spirovska                | : PE Vodovod i Kanalizacija |
| 5) Mr. Vasko Nacevski                 | : MAFWE                     |
| 6) Ms. Kaja Sukova                    | : MEPP                      |
| 7) Ms. Cvetanka Ikonomova Martinovska | : City of Skopje            |

(JICA Representatives)

- |                      |        |
|----------------------|--------|
| 1) Ms. Nahomi Nishio | : JICA |
| 2) Mr. Saso Dimitrov | : JICA |

(JICA Study Team)

- 1) Mr. Kazufumi Momose
- 2) Mr. Katsuyoshi Tomono
- 3) Mr. Tetsuo Izawa
- 4) Mr. Nobuyuki Sato
- 5) Ms. Shoko Yamada
- 6) Mr. Kunimasa Izumi

Assistance:

- 1) Mr. Mihail Burzevski
- 2) Ms. Natasa Burzevska
- 3) Ms. Norika Lesnikovska

## **Notes of the 6<sup>th</sup> Steering Committee Meeting**

The host, Mr. Bozidar Stojcev of MTC opened the meeting by welcoming the attendants. He apologized on behalf of Ms. Radmila Bojkovska of Hydro-Meteorological Institute for not having been able to attend the meeting. He introduced Mr. Saso Dimitirov, the new Technical Coordinator for JICA in Skopje. He announced that the power companies MEPSO and Gama have accepted a meeting with a Study Team as requested. He will be expecting calls from the power companies in the course of the day to set the time and date for the meeting.

The leader of the Study Team, Mr. Momose thanked the present parties for their attendance and introduced Mr. Izumi who would be replacing Mr. Saito and is also responsible for sewage facilities. Then Mr. Momose proceeded to explaining the points of the Agenda for the 6<sup>th</sup> S/C: comments on the Interim Report by the Macedonian side, comments on Environmental and Social Consideration by JICA committee, contract work progress, site area of WWTP, training on sewage treatment plan in Japan, Action Plan on Institutional and Financial Aspect of PE Vodovod and Action Plan on Industrial Wastewater Management and Water Quality Monitoring. He noted that the Macedonian side had agreed on these two Action Plans, so members of the Study Team would be presenting them.

Mr. Slobodan Dimitrievski of PE Vodovod noted that regarding the Action Plan on Institutional and Financial Aspect, specifically the need for reorganization and reducing staff size had been discussed many times before. He said that it hadn't been decided yet who will be managing the WWTP. The options were PE Vodovod or the City of Skopje that might establish a new PE for the purpose of managing the WWTP. He asked why PE Vodovod should make so many efforts in Human Resources (HR) and reorganization if that were the case.

Ms. Ikononova Martinovska from the City of Skopje added that there was a third open option for private-public partnership. She said the City wasn't obliged to place the WWTP under the management of PE Vodovod.

Mr. Stojcev of MTC commented that none of the parties present had the authority to give a definite answer to what would be the solution for managing the WWTP.

Mr. Momose replied that in his understanding it is up to the Macedonian Government to decide on that, but according to the Study Team PE Vodovod would be the appropriate organization and that was why HR and reorganization had been one of the study items.

Then he proceeded to explaining that the Action Plan and CD on Institutional, O&M and Financial Aspects had been formulated based on a scope of work given by JICA, that the Macedonian side had already accepted. He said that the Study Team understands there were several options, but other options would have meant a different scope of work from the very beginning, so this study had been based on PE Vodovod managing the WWTP. He explained that either PE Vodovod or a newly established PE managing the WWTP would be acceptable, but a private-public partnership would be an entirely different scenario and if that should be the choice, there should be a separate study made regarding that issue.

Next, Mr. Momose addressed the item of environmental and social consideration by JICA committee. He explained that the amount of load that can be reduced will affect the size and design of WWTP, then water quality in the Vardar River. He suggested that the Macedonian side should set up some targets that will affect the choice of either a primary, secondary or advanced treatment plant.

The second question was regarding industrial waste waters, which as he pointed out was very difficult to tackle. Mr. Momose asked whether imposing pre-treatment and IPPC implementation

would be possible in practice and added that the main issues would be how to control and monitor it.

He announced that Mr. Izawa will make a presentation with specific measures according to the comment from the Environmental and Social Consideration Committee of JICA committee.

Ms. Kaja Sukova of MEPP explained that processes regarding water management according to EU legislation were quite recent in Macedonia, although there was an existing Law on Waters. She pointed out the example of the newer member countries of the EU and the lengthy transition they had gone through regarding the issue of waste waters. She said that setting and implementing EU standards on waste waters was regarded as one of the most difficult fields to cover in the EU accession process but Macedonia understood that it must do it.

Mr. Momose pointed out that the cooperation of the industrial sector is crucial, so MEPP should increase cooperation and invite them to stakeholder meetings. He said that the first step should be requesting their cooperation and the next step would be some form of punishment.

Ms. Sukova of MEPP replied that there were clear legal regulations in case a company doesn't receive a license for IPPC.

The next issue addressed by Mr. Momose was the selection procedure of subcontractor by JICA guidelines. He said there had been a complaint regarding the choice of subcontractor. He explained the stages of the procedure: receiving a list of companies from PE Vodovod or MEPP, pre-qualification of companies according to their technical and financial capacity and choosing the lowest bidder from the short-list.

Ms. Cvetanka Ikonomova Martinovska from City of Skopje commented that she wasn't pleased with the choice of the lowest bidder and she wished the City had been consulted in the choice.

Ms. Kaja Sukova emphasized that the EIA study should be made according to EU guidelines in order for the Macedonian Government to be able to request funding from EU in the future, based on that study. She said that until now there had been only one EIA study conducted in Macedonia, according to EU guidelines, for a WWTP in Prilep. She said that local companies are still inexperienced in making such studies and there was only one company that worked on the EIA for the WWTP in Prilep. She said she understood that it would limit the Study Team's choice of companies but that this matter should be taken into consideration in order to avoid concerns of the study not being recognized by EU authorities in the future.

Mr. Slobodan Dimitrievski of PE Vodovod commented that according to his knowledge, the subcontractor Tehnolab had experience with air pollution but not with waters.

Mr. Bozidar Stojcev of MTC added that the choice had already been made. He confirmed that Ms. Ikonomova Martinovska was also displeased with the choice. He said that they must express that they weren't pleased with the choice of the subcontractor because they were concerned the EIA would not be recognized in the future.

Mr. Momose replied that the local consultant was only a subcontractor and that the EIA study is JICA Study Team's responsibility. He explained that the final product was going to be JICA Study Team's responsibility and handed over by JICA, and that they understood it should be according to EU standards.

He proceeded to announcing the subcontractors' work schedule: topographic and route survey would be conducted during be finished by the beginning of the July, geological survey would be finished in June and the EIA study would be finished by January 31<sup>st</sup>.

Mr. Momose asked what was going on with the EIA notification and when they could expect an answer from MEPP.

Ms. Ikonomova Martinovska of City of Skopje answered that she would submit the notification on Monday.



Ms. Kaja Sukova of MEPP answered that they would give a reply as soon as possible.

Mr. Momose asked to confirm whether there was a protected area within the WWTP site.

Ms. Kaja Sukova confirmed that the area was protected by law since 1974 as the only ornithological reservation in Skopje. She couldn't say how that area had gotten into the General Urban Plan.

Ms. Ikonomova Martinovska asked whether the remaining area was sufficient for constructing the WWTP.

Mr. Momose answered that the remaining area would have to be adapted. He explained that the WWTP could be constructed on the west side, but that there wasn't enough space for the sludge drying beds which were planned on the east side, so the Team might have to propose an incinerator instead, which would increase costs both for construction and operation.

Mr. Momose reminded the Macedonian side that they would have to nominate candidates for the training in Japan.

Ms. Kaja Sukova said they would need an official letter of request with details and deadline for nominating candidates.

Ms. Nishio of JICA explained that it wasn't a regular procedure, but a procedure for the purpose of this project so there was no deadline set. She requested that candidates be nominated at latest around one month before the training begins. She suggested a member of the S/C could be a designated person for training, so a separate meeting could be held to discuss details. Mr. Momose added that training was planned to be held in early December for two weeks period.

Mr. Tomono began his presentation of the Action Plan and CD on Institutional, O&M and Financial Aspects.

Mr. Dimitrievski of PE Vodovod commented regarding the issue of Improvement in Financial Operation, specifically the item stating that a long-term financial projection had not been drawn. He said that the PE isn't legally obliged to set a long-term budget, only annual budgets.

Mr. Tomono replied that he understood the situation, but that an estimate for future needs for expenses and revenue should be made, especially if PE Vodovod is going to take over a large new facility such as WWTP.

Mr. Dimitrievski commented that the measures were too broadly generated. He said he would appreciate more detailed improvement measures. For example should they include a special fee in the water rate for the WWTP, as it is the case with Ohrid. He noted that they already raised the water charge rate last year and that according to World Bank and EBRD they have limitations in raising the rate to 3-4% of the user's income.

Ms. Ikonomova Dimitrievska added that the Macedonian side is not familiar with the investment value of the project nor the maintenance costs, therefore JICA should propose specific measures.

Mr. Tomono stated that the PE would benefit from introducing various measures to raise "willingness-to-pay" including setting a "Water Supply Day" when citizens would be invited to the facilities of the PE to hear about their functions; and that children would be pleased if they are given colorful balloons with a "Водовод" logo in such an occasion.

Mr. Dimitrievski commented that he would present PR materials published by PE Vodovod that had been disseminated to the public.

Mr. Tomono noted that it was his finding that sewage sector had no division or personnel for general affairs of the sector and he believed that no general affairs division of other sectors could handle all the general affairs of every other sector.

Mr. Dimitrievski replied that in his opinion not all sectors should have a division for general affairs and that it would be contrary to the goal of decreasing the number of

staff members.

Mr. Tomono explained that the sewage sector may need general affairs activities in the future such as budget planning, execution of sewage, customer installation, charge handling, sewage service charge affairs.

Ms. Ikonomova Martinovska said that such obligations were centralized and the PE could not implement it in every sector separately.

Mr. Tomono noted that managing activities related to land registry were assigned to the cadastre division in O&M Sector when it should have been assigned to the Sewage Sector since planning and acquiring land for sewage activities could be handled more efficiently by this sector.

Mr. Tomono pointed out that, as seen in the English version of "Book of Regulations", Sector O&M had a Cadastre Division, one of which TORs was "land registry".

Mr. Dimitrievski commented that he disagrees with this point and all that the cadastre division was doing is registering new and existing facilities. He said that the City of Skopje was planning to centralize cadastre services for all underground utilities such as central heating, telecommunications, water supply and sewerage.

Mr. Dimitrievski commented on the part of the presentation on HR management. He said that the issue of optimal number of staff was directly related to the City of Skopje instructing the PE on what their scope of responsibilities would be. Depending on the scope of responsibilities the PE could increase or decrease the number of employees. For example they could cancel their laboratories and use the services of external laboratories or they could cancel their security guards or hire a security company.

Mr. Tomono presented the schedule, specifically reduction of NRW that was scheduled for 2011 to 2015 and said it would take much longer than that.

Mr. Dimitrievski commented that such efforts could not be scheduled, since it had been an activity of the PE since its operation would last as long as the PE existed, to which Mr. Tomono said he would revise this portion.

Then Mr. Izawa began his presentation of the Action Plan on Industrial Wastewater Management and Water Quality Monitoring. At the end he announced that he will be holding a seminar on June 18<sup>th</sup> on the basic concept of Cleaner Production, industrial effluent regulation and pre-treatment methods.

Ms. Ikonomova Martinovska commented that she believed the items in the study presented would be very useful for the Macedonian side. She asked whether the draft on analysis standards would be based on Japanese or European legislation.

Mr. Izawa answered that he already proposed Japanese standards but that they were basically according to ISO, the only difference was that the Japanese standards are more detailed and complicated. He explained that there were no discharge standards in Macedonia, so he would prepare the conceptual design for the standards.

Mr. Stojcevski closed the meeting; reminding the Study Team that the Macedonian side is available for any questions or needs they had regarding the Project.

9.7 7th Steering Committee

**MINUTES of  
7<sup>th</sup> STEERING COMMITTEE MEETING**

- 
1. **Date and Time** : 10:00 ~ 12:00, September 10<sup>th</sup> 2008
2. **Place** : MTC Conference Room
3. **Participants:**
- (Counterparts)**
- |                               |                                  |
|-------------------------------|----------------------------------|
| 1) Mr. Bozidar Stojcev (Host) | : MTC                            |
| 2) Ms. Gjunul Sali            | : MTC                            |
| 3) Mr. Slobodan Dimitrievski  | : PE Vodovod i Kanalizacija      |
| 4) Ms. Sanja Spirovska        | : PE Vodovod i Kanalizacija      |
| 5) Ms. Kaja Sukova            | : MEPP                           |
| 6) Mr. Nikola Jovanovski      | : City of Skopje                 |
| 7) Mr. Toni Kostov            | : City of Skopje                 |
| 8) Ms. Radmila Bojkovska      | : Hydro-Meteorological Institute |
- (JICA Representatives)**
- |                         |               |
|-------------------------|---------------|
| 1) Mr. Satoshi Murakami | : JICA Skopje |
| 2) Mr. Saso Dimitrov    | : JICA Balkan |
- (JICA Study Team)**
- |                          |  |
|--------------------------|--|
| 1) Mr. Kazufumi Momose   |  |
| 2) Mr. Katsuyoshi Tomono |  |
| 3) Mr. Haruki Takahashi  |  |
| 4) Mr. Tetsuo Izawa      |  |
| 5) Ms. Shoko Yamada      |  |
| 6) Mr. Masakazu Nakao    |  |
| 7) Mr. Shunichi Nakatake |  |
- Assistance:
- |                           |  |
|---------------------------|--|
| 1) Mr. Mihail Burzevski   |  |
| 2) Ms. Natasa Burzevska   |  |
| 3) Ms. Norika Lesnikovska |  |

## **Notes of the 7<sup>th</sup> Steering Committee Meeting**

The host, Mr. Bozidar Stojcev of MTC opened the meeting by welcoming the attendants. He introduced Mr. Murakami from JICA Balkan Office who was attending for the first time and gave the floor to Mr. Momose.

Mr. Momose, the leader of the JICA Study Team thanked the parties present for their attendance and reminded them that the interim report had been submitted and that it was open for discussion. He presented the agenda of the meeting and proceeded to the clarification issues.

### **(Basic Plan Modification)**

He explained that some figures had been revised and that the BOD was set to 60g per capita per day based on water analysis in Kumanovo and Struga, especially in the summer months. He also explained that it was related to the European standards.

### **(EIA Study)**

He said that the Notification on the Study was submitted by the City of Skopje on 30<sup>th</sup> July and scoping is expected to be done by the 15<sup>th</sup> September. He announced that the baseline study had been finished and that the team was currently working on the evaluation report which was planned to be completed in September this year. The public discussion was planned for October.

### **(Ostrovo Protection Area)**

Then he moved on to announce that the team had begun the revaluation of Ostrovo Protection Area. He explained that the study was not complete yet, but they were expecting that the biologists would recommend that the area remained under protection. He said the study would be sent to MOE where the final decision would be made.

### **(Land Issue)**

The next issue Mr. Momose discussed concerned price of land and ownership. He said that in his understanding most of the land was owned by the state and he wanted to know if certain parts were leased out for temporary use. He said he had been told by the City of Skopje that temporary users had the right to be compensated. He asked for a rough estimation of what the cost of compensation would be so they would be able to include it in the budget.

Mr. Stojcev answered that if a public interest had been identified, the land could be expropriated. He added that a new law on land had currently been in preparation that would regulate such issues. Then he suggested that he would arrange a meeting between the JICA study team and the MOF, where the Property and Legal Affairs Department was responsible for that field.

Mr. Momose accepted the suggestion and proceeded to the following issue of associated facilities.

### **(Associated Facilities)**

He explained that the access road would have to cross over the railway line from the western side and that an overhead power line and an underground gas pipeline would have to be relocated for the purposes of constructing the WWTP. He explained that he had already talked to EVN and they were willing to relocate the power line as long as the cost was covered by the party commissioning the relocation. He asked who would bear the relocation cost and should it be included in the project. He also suggested that for future provisions a piece of land on the right bank of Vardar could be bought, and that it would be useful for them to know buying it is planned for the future since it would mean regulation of the Vardar river.

Ms. Sukova said it would be good to include that in the study, so they would have reference in which direction the project would be expanded in the future.

Mr. Momose asked who would bear the cost for constructing an embankment to protect the WWTP from flooding and should it be included in the study.

Mr. Stojcev said that the cost for the embankment should be included in the study and further explained that the Ministry of Agriculture had information on what type of embankment would be appropriate.

Mr. Momose voiced concerns that the costs will continue to rise.

**(Treatment Process)**

Then he explained the following topic concerning the treatment process. He explained that the study team had suggested a biological treatment process that had a lower cost though required more skill for operating. He said that they weren't concerned about this since they believed the staff would be able to learn those additional skills. Then he proceeded to explaining that the Nitrogen and Phosphorus removal process is for sensitive areas, such as Ohrid and Prespa, but they were certain that it is not needed for Skopje. He explained that the water downstream Vardar isn't used for drinking nor irrigation. He added, however, that since Vardar is an international river, Greece might demand Nitrogen and Phosphorus removal, and in that case the process would be included in the second phase.

Mr. Dimitrievski added that they lacked information on the effects on the water wells system, since it wasn't managed by them.

Ms. Bojkovska also added that concerning this matter legal regulation is lacking, only some very general guidelines.

Mr. Momose replied that the effects on the water wells system would be included in the study. He also replied that they couldn't afford to wait for legal regulations to be established so they would propose certain sketches for upgrading of the WWTP.

**(Monitoring by Vodovodo)**

Mr. Momose proceeded with the presentation and said that they would suggest for PE Vodovod i Kanalizacija to be given some authority to monitor the (industrial) waste waters being received into their system, since some toxic matters can have adverse effects on the treatment process.

Ms. Sukova commented that PE Vodovod already has the facility for analysis of waters.

Mr. Momose explained that PE Vodovod has the laboratory, but not the authority to enter the factories and monitor their waste waters.

Ms. Sukova commented that MOE should be the one doing that.

Mr. Momose explained that the viewpoint would be different, since the objective for MOE would be to protect the environment, while the objective for vodovod would be to maintain their WWTP and treatment processes. He gave the example that in Japan that had been regulated by law.

Mr. Dimitrievski added that in the new Law on Waters and Law on Water supply that issue had remained unregulated and that they do analyses but remain without any authority. He also asked from the study team to include comments on discharge parameters.

Mr. Momose concluded that they would suggest giving some authority to PE Vodovod and also include comments regarding the discharge parameters.

**(Financial Aspect)**

He continued with the presentation moving on to the financial aspects. He announced that they would give suggestion for how much the price of water should rise taking into account the willingness to pay of the end users, according to all possible scenarios.

Ms. Sukova asked what the financial cost is at the moment.

Mr. Momose answered that there is no final figure, but it would roughly be around 90 million Euros with the possibility of exceeding this figure because of land cost etc.

Mr. Stojcev commented that there is the possibility of co-financing and loans.

Mr. Momose said that they would propose a few scenarios, but not they would like to keep the number of scenarios as low as possible since it would take too much time to analyze them all. He asked who would be returning the loan if PE Vodovod takes one for construction of WWTP.

Ms. Sukova answered that it would be a decision of the government since it was concerning a large amount of money. She said that in the case of Prilep Treatment Plant the government had decided and it was a matter of politics.

Mr. Stojcev added that the government had mechanisms to relocate the municipalities' funds through the central budget for the purpose of returning the loan.

Mr. Dimitrievski commented that if they included the cost of managing the WWTP in the price of water, it would exceed the price designated by international financial institutions, that the price of water should be 3-4% of the personal income. He said that the cost of maintaining the

WWTP might be covered by water charge, but certainly not the cost of construction.

Mr. Tomono said that he would examine various scenarios and possibilities for paying back the loan capital. He also announced that workshops would be held for improvements in O&M system and in financial operations.

**(Capacity Development)**

Mr. Momose explained the Capacity Development issues on both institutional/financial aspects and industrial wastewater management according to the presented materials. He further explained topics and dates on Capacity Development issues.

**(Next Steering Committee)**

Participants agreed to have the following Steering Committee on 2<sup>nd</sup> October tentatively..

**(Counterpart Training in Japan)**

He also asked if there would be a language issue if a Japanese-Serbian interpreter would be hired for the training in Japan.

Mr. Dimitrievski answered that it wouldn't be a problem to communicate in Serbian language.

Mr. Stojcev asked if there were any questions from the Macedonian side and closed the meeting by thanking the present parties for attending.

9.8 8th Steering Committee

**MINUTES of  
8<sup>th</sup> STEERING COMMITTEE MEETING**

- 
1. **Date and Time** : 10:00 ~ 12:00, October 3<sup>rd</sup> 2008
2. **Place** : MTC Conference Room
3. **Participants:**
- (Counterparts)**
- |                               |                                  |
|-------------------------------|----------------------------------|
| 1) Mr. Bozidar Stojcev (Host) | : MTC                            |
| 2) Mr. Slobodan Dimitrievski  | : PE Vodovod i Kanalizacija      |
| 3) Mr. Vasko Nacevski         | : MAFWE                          |
| 4) Ms. Kaja Sukova            | : MEPP                           |
| 7) Ms. Radmila Bojkovska      | : Hydro-Meteorological Institute |
- (JICA Representatives)**
- |                      |        |
|----------------------|--------|
| 1) Mr. Saso Dimitrov | : JICA |
|----------------------|--------|
- (JICA Study Team)**
- 1) Mr. Kazufumi Momose
  - 2) Mr. Katsuyoshi Tomono
  - 3) Mr. Tetsuo Izawa
  - 4) Mr. Haruki Takahashi
  - 5) Ms. Shoko Yamada
  - 6) Mr. Norio Tanaka
  - 7) Masakazu Nakao
  - 8) Koichiro Azui
- Assistance:
- 1) Mr. Mihail Burzevski
  - 2) Ms. Natasa Burzevska
  - 3) Ms. Norika Lesnikovska

## Notes of the 8<sup>th</sup> Steering Committee Meeting

### (Introduction)

The host, Mr. Bozidar Stojcev of MTC opened the meeting by welcoming the attendants. He apologized on behalf of Ms. Kaja Sukova who would be late for the meeting because of some previous engagement and would join around 11h.

Mr. Momose thanked Mr. Stojcev for opening the meeting and announced that there were 6 topics on the agenda to be discussed: 1) Progress of EIA; 2) Progress of Feasibility Study; 3) Seminar on Industrial Waste Water Management; 4) Seminar on Institutional and Financial Aspects; 5) Next S/C; 6) Seminar in Japan.

Mr. Stojcev suggested that the first topic on the progress of the EIA would be left for the end of the meeting, so that Ms. Sukova would be present for that part of the presentation.

Mr. Momose agreed and gave the word to Mr. Dimitrov from JICA to begin with the explanation of the Seminar in Japan (agenda No. 6).

### (Seminar in Japan)

Mr. Dimitrov reminded the attendants of the letter from Ms. Nishio from JICA that had been sent in July with an explanation of the procedure and the designation of MTC as coordinator of the seminar to be held in Japan. He added that JICA encouraged members of the S/C to apply for the seminar. He said that he had sent application forms and short explanations to all the relevant institutions and had already spoken to the person in charge of this matter from the JICA Balkan Office in Belgrade and he had been told that they still have a couple of weeks to send the applications until the deadline. He explained that all the applications should be sent to MTC, as the coordinator, and then they would be sent to the Ministry of Education and Sciences for approval. He showed the application and explained where the seal from the Ministry of Education and Sciences should stand and where the seal from the institution sending a representative to Japan should stand. He suggested that he would scan the applications before they are sent to the Ministry of Education, so they could be sent to JICA without any delays that might be caused by the procedure of the Ministry of Education. He also explained that after JICA approves the applications, travel arrangements shall be sent to him and he would organize a pre-departure briefing with all the persons that would be attending the seminar in Japan.

Mr. Stojcev said that not all institutions had responded yet, concerning the seminar in Japan, and that he would send official letters notifying them that the dead line for applications is the end of next week.

Mr. Momose asked whether all the institutions had nominated a candidate for the seminar in Japan.

Mr. Dimitrov answered that some had and others hadn't, but he would call all of them to remind them that they should have it done until the end of next week.

### (Progress of Feasibility Study)

Mr. Momose proceeded with the presentation of the remaining items on the agenda. He explained the target water quality in case the site is designated as a sensitive area, which was stated as optional in the presentation.

Mr. Momose explained that it should be a decision of the proposed National Water Council to designate the area as sensitive to discharge of waste waters. He said that in the case the area is designated as sensitive, the recommended water quality for N and P would not be an option, but would have to be followed. He explained that presently a sensitive area should be considered an option, so as to follow existing regulations, but that the treatment plant would have the possibility to



upgrade its capacity for further reduction of N and P, which if considered at that time would be quite costly and would mean a further tariff hike.

Ms. Bojkovska commented on Mr. Momose's explanation of the sludge disposal process that a landfill fit to dispose toxic sludge is non-existent in Macedonia.

Mr. Momose asked whether such a landfill would be constructed by the year 2014.

Ms. Sukova explained that alternatives to constructing a toxic sludge disposal landfill should be taken into consideration. She gave the example of Croatia, where private companies had been hired to store the sludge appropriately and then transport it outside of Croatia for incineration. She explained that Macedonia might opt for such solutions so they wouldn't want the study to state that a landfill would be constructed by the year 2014.

(Seminar on Industrial Waste Water Management and on Institutional and Financial Aspects)

Mr. Momose presented the schedules on both seminars and thanked for the cooperation.

(Next S/C Meeting)

Mr. Momose confirmed the date for the following S/C for Thursday, October 23<sup>rd</sup>.

Mrs. Bojkovska commented that the specified date is a National Holiday so she would suggest rescheduling for Monday, October 27<sup>th</sup>.

Mr. Momose accepted the rescheduled date.

(Government Budget for the Related Sewerage Projects)

Mr. Stojcev informed that the Government had officially requested from MOF to include the funding of the main collectors in the budget for the fiscal year 2009. He explained that the Parliament should approve the budget, so only after that they would be in position to officially state that the main collectors were going to be constructed by Government funding. He also added that the Government officially designated MEPP and MTC to coordinate the realization of the plan for constructing main collectors.

Ms. Sukova commented that JICA's study had been identified as one of the priority projects on environment, but specific measures could be taken only after the study had been completed.

(Progress on EIA)

Mr. Momose announced that before the team leaves for Japan they would like to hold a stakeholder meeting. He explained that the public hearing would be held according to the law, but apart from that they would like to hold an unofficial meeting with all the stakeholders.

Ms. Sukova requested that the materials for the stakeholder meeting are in Macedonian language.

Mr. Momose asked whether Ostrovo should be left as a Protected Area.

Ms. Sukova answered that if there is a recommendation it should be left like that.

(Conclusion)


Mr. Momose announced that he had finished presenting all the items on the agenda.


Mr. Stojcev asked if anyone had any questions and closed the meeting by thanking everyone for their attendance.


9.9 9th Steering Committee


MINUTES OF MEETINGS  
ON  
9<sup>th</sup> Steering Committee  
FOR  
THE STUDY ON WASTEWATER MANAGEMENT IN SKOPJE


Skopje, October 28, 2008

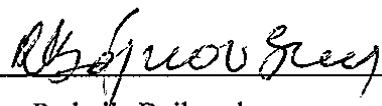
  
\_\_\_\_\_  
Mr. Bozhidar Stoicov  
State Counselor  
Ministry of Transport and Communication

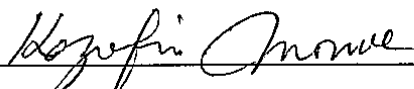
  
\_\_\_\_\_  
Ms. Xaja Sukova  
Head of Department  
Ministry of Environment and Physical  
Planning

  
\_\_\_\_\_  
Mr. Dimitrovski Slobodan  
Deputy Director  
PE "Water Supply and Sewerage" Skopje

  
\_\_\_\_\_  
Ms. Liljana Ončevska  
Deputy Head of Department  
City of Skopje

  
\_\_\_\_\_  
Mr. Vasco Nacevski  
Head of Department  
MAFWE

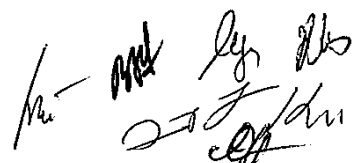
  
\_\_\_\_\_  
Ms. Radmila Bojkovska  
Head of Department  
Hydrometeorological Institute

  
\_\_\_\_\_  
Mr. Kazufumi Momose  
Team Leader  
JICA Study Team

The Japan International Cooperation Agency (JICA) has dispatched the Study Team headed by Mr. Kazufumi Momose to conduct the Study on Wastewater Management in Skopje. During the Study period starting from August and ending in October 2008, various consultations and meeting were held between the steering committee members and the Study Team on the study. Also five seminars/workshops were held concerning the institutional and financial capacity as well as concerning industrial wastewater management and water quality monitoring.

On occasion of finishing the study period and for preparing the draft final report which is scheduled to be submitted in the middle of December 2008 and discussed in the middle of January 2009, 9th Steering Committee was held on 28<sup>th</sup> of October 2008 between the Study Team and the Steering Committee members which are appointed by the Ministry of Transport and Communication (MTC), Ministry of Environment and Physical Planning, City of Skopje, PE "Water Supply and Sewerage" Skopje, Ministry of Agriculture, Forest and Water Economy and Hydrometeorological Institute. List of Participants is shown in Annex I. As a result, the followings have been agreed;

1. The presentation of the discussion paper so-called Progress Report (2), which incorporates the previous Progress Report and Interim Report, was agreed including the followings;
  - i. Population, wastewater quantity and quality for Design/Planning with target year 2020 (Wastewater treatment plant) and 2030 (Main collectors).
  - ii. Comparison study on treatment methods of water and sludge with recommendation of Conventional activated sludge and Sludge drying Bed
  - iii. Not feasible CDM (Clean Development Mechanism)
  - iv. Organization for Wastewater Treatment Plant
  - v. Financial analysis (lending condition, tariff increase etc.)
2. Based on the EIA report, public hearings will be organized in around 20<sup>th</sup> of January 2009.
  - i. Opinion of incorporation of the three peripheral sewer districts which was raised in the stakeholder meetings held on 16<sup>th</sup> October 2008 is not taken into consideration.
  - ii. Opinion of employing dewatering equipment instead of the proposed sludge drying bed will be further considered, if it is raised again in the public hearings. However, the committee members understand the Study Team's recommendation.

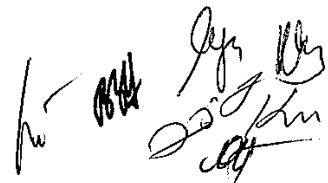


The followings are confirmed again herewith which were discussed in the previous meetings:

1. Vodovod is assumed responsible for management of the wastewater treatment plant in the Study (6<sup>th</sup> meeting, June 12)
2. Macedonian sides understand that, although setting and implementing EU standards on wastewater is regarded as one of the most difficult fields, it must be done to proceed EU accession process. (6<sup>th</sup> meeting)
3. Revalorization process on the "Ostrovo protection area" is being done and the area is not intended for the wastewater treatment plant. (7<sup>th</sup> meeting, September 10)
4. Main collectors as well as wastewater treatment plants in North Gorce Perov and some of Saraj settlements are planned to be budgeted by the Government in 2009. However, main collectors are assumed to be a part of the Project. (8<sup>th</sup> meeting, October 3)

After that, the Study Team proposes the followings:

1. Draft Final Report will be submitted in around December 20, 2008.
2. 10<sup>th</sup> Steering Committee will be held in around January 2009 when Draft Final Report will be discussed for the finalization.



## 5. List of Participants

### Macedonian side:

#### Ministry of Transport and Communication

Mr. Bozhidar Stojcev :State Counselor for Housing/Communal Affairs and Infrastructure

#### Ministry of Environment and Physical Planning

Ms. Kaja Sukova :Head of Department for Sustainable Development and Investments

#### Ministry of Agriculture, Forestry and Water Economy, Administration for Water Economy

Mr. Vasco Nacevski :Head of Department for Maintenance and Use of Water Regime and Water Economic facilities

#### City of Skopje

Ms. Liljana Oncevska :Deputy Head of Protection of the environment and nature Department

Mr. Toni Kostov :Head of Unit for communal works in the field of waste procurement and urban waste water management

#### PE "Water Supply and Sewerage" Skopje

Mr. Dimitrovski Slobodan :Deputy Director

#### Hydro-meteorological Institute

Ms. Radmila Bojkovska :Head of Department

### Japanese side:

#### JICA Study Team

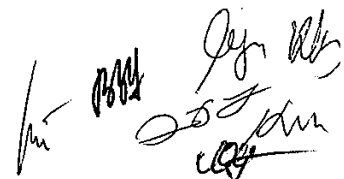
Mr. Kazufumi Momose :Team Leader

Mr. Katsuyoshi Tomono :Member, Finance and Institute

Mr. Norio Tanaka :Member, Mechanical and Electrical Design and Cost Estimate

#### JICA Skopje Contact Office


Mr. Sasho :Technical Coordinator

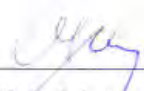



9.10 10<sup>th</sup> Steering Committee


MINUTES OF MEETINGS  
ON  
10<sup>th</sup> STEERING COMMITTEE  
FOR  
THE STUDY ON WASTEWATER MANAGEMENT IN SKOPJE


Skopje, January 27, 2009


  
Mr. Bozhidar Stojcev  
State Counselor for Housing/Communal  
Affairs and Infrastructure  
Ministry of Transport and Communication

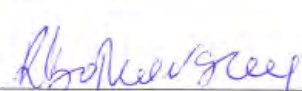
  
Ms. Kaja Sukova  
Head of Department for Sustainable  
Development and Investments  
Ministry of Environment and Physical  
Planning

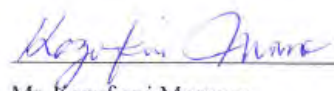
  
Mr. Slobodan Dimitrovski  
Deputy Director  
PE "Water Supply and Sewerage" Skopje

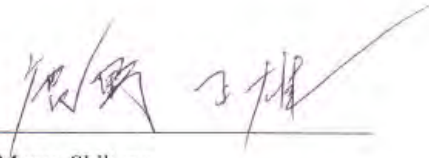
  
Ms. Liljana Oncevska  
Assistant Head of Protection of the  
Environment and Nature Department  
City of Skopje

  
Mr. Toni Kostov  
Head of Unit for Communal Works in the field  
of Waste Procurement and  
Urban Waste Water Management  
City of Skopje

  
Mr. Vasco Nacevski  
Head of Department for Maintenance and  
Use of Water Regime and Water Economic  
Facilities  
Ministry of Agriculture, Forestry and  
Water Economy

  
Ms. Radmila Bojkovska  
Assistant Head of Department for Analysis of  
the Quality of Water, Air and Soil  
Hydrometeorological Institute,  
Ministry of Agriculture, Forestry and  
Water Economy

  
Mr. Kazufumi Momose  
Team Leader  
JICA Study Team  
Japan International Cooperation Agency

  
Mr. Masao Shikano  
Team Leader  
Project Consultation Team  
As a witness

The Japan International Cooperation Agency (JICA) dispatched the Study Team to conduct the Study on Wastewater Management in Skopje. Twenty copies of the draft final report were submitted to the Steering Committee and they were explained and discussed on 21<sup>st</sup> and 27<sup>th</sup> of January 2009. List of Participants is shown in Annex I.

Concepts and ideas of the draft final report were agreed by the Steering Committee. The official institutions<sup>1</sup> through the Ministry of Transport and Communication will submit comments, if any, by 22<sup>nd</sup> of February 2009 to the JICA Study Team. Considering and evaluating their comments, JICA Study Team will prepare a final report.

The following are main notes in the draft final report:

(Subjects of F/S)

1. Feasibility Study (F/S) was conducted on wastewater treatment plant and two main collectors. Other pipes and pumping stations in the central sewerage district, Saraj, Gorce Petrov and Dracevo districts are not included in the F/S.
2. Main collectors in central sewerage district are planned to be budgeted by the Government of Macedonia in 2009-2011. However, main collectors are decided to remain part of the F/S in 8<sup>th</sup> Steering Committee meeting, 3<sup>rd</sup> of October 2008.

(Planning Factors)

3. Hourly industrial wastewater quantity is changed from "equal to daily average and maximum flow" to "1.5 times of daily average and maximum flow".
4. JICA Study Team recommends a sludge drying bed as sludge treatment process, considering economical, financial and environmental aspects.

(Measures for Sensitive Area)

5. Advanced treatment is presented in the draft final report in case the downstream of the proposed wastewater treatment plant is designated as a sensitive area.

(Public Relations)

6. Twenty percentage tariff increases is recommended in the Study for the project sustainability. In this regard, it is important to get beneficiaries' understanding of the necessity in the wastewater treatment plant and tariff increase.

(Industrial Wastewater)

7. According to the recommendations, the wastewater of six factories<sup>2</sup> should be treated by themselves, not discharged into the sewerage system.

<sup>1</sup> Official institutions mean the institutions that delegated the members of Steering Committee.

<sup>2</sup> ArceloMittal Steel, Makstil, Energetika – ELEM, Skopski Leguri, Pivara, OHIS

8. Industrial wastewater management is important because the proposed wastewater treatment plant cannot treat hazardous substances. Thus, adequate standards for pre-treatment for industrial wastewater discharged to the sewerage system should be set according to the Law on Waters.

(Water Quality Simulation)

9. Water quality simulations are conducted for low water flow (flows in 275-days throughout a year are larger than this low water flow), following the Japanese standards as Macedonia does not have any standards. In addition, they are conducted also for draught flow (flows in 355-days throughout a year are larger than this draught flow), which is more severe case. Therefore, the Macedonian standards should be set up according to the Law on Waters.

(Protected Areas)

10. Revalorization process on the "Ostrovo protection area" is underway and the area is not intended for the wastewater treatment plant.

Macedonian side requested to JICA for the translation of summary report into the Macedonian language. Further Macedonian side understands that the English is official version.





## ANNEX I List of Participants

### Macedonian side:

#### Ministry of Transport and Communication

- Mr. Bozhidar Stojcev : State Counselor for Housing/Communal Affairs and Infrastructure  
Mr. Ljubisha Jovanovski : Head of Department for Housing/Communal Affairs and Infrastructure

#### Ministry of Environment and Physical Planning

- Ms. Kaja Sukova : Head of Department for Sustainable Development and Investments

#### Ministry of Agriculture, Forestry and Water Economy, Administration for Water Economy

- Mr. Vasco Nacevski : Head of Department for Maintenance and Use of Water Regime and Water Economic Facilities

#### City of Skopje

- Ms. Liljana Oncevska : Assistant Head of Protection of the environment and nature Department  
Mr. Toni Kostov : Head of Unit for communal works in the field of waste procurement and urban waste water management

#### PE "Water Supply and Sewerage" Skopje

- Mr. Slobodan Dimitrovski : Deputy General Manager  
Ms. Sanja Spirovska : Sewerage Engineer

#### Hydro-meteorological Institute

- Ms. Radmila Bojkovska : Assistant Head of Department for Analysis of the Quality of Water, Air and Soil

### Japanese side:

#### Project Consultation Team

- Mr. Masao Shikano : Team Leader  
Ms. Hiroko Kamata : Sewerage Planning  
Mr. Masaru Kurimoto : Cooperation Planning

#### JICA Balkan Office

- Mr. Satoshi Murakami : Representative

#### JICA Skopje

- Mr. Sasho Dimitrov : Technical Coordinator

#### JICA Study Team

- Mr. Kazufumi Momose : Team Leader  
Mr. Shunichi Nakatake : Member  
Mr. Katsuyoshi Tomono : Member  
Ms. Shoko Yamada : Member

9.11 1st JICA Committee

《会議報告》

案 件：	マケドニア旧ユーゴスラビア共和国スコピエ下水道改善計画調査	
議 題：	インセプションレポート説明協議（第一回支援会議）	
日 時：	平成 19 年 9 月 21 日（金） 14：00～15：30	
場 所：	JICA 12C 会議室	
参加者	国土交通省総合政策局：林係長 JBIC：田端専門調査員 JICA インド事務所：鎌田専門員 JICA 企画調整部：竹田氏 JICA 地球環境部：須藤アドバイザー、升本グループ長、熊谷チーム長、田村氏	コンサルタント： 東京設計事務所：百瀬、友野、 中武、斉藤、 田中 建設技研インターナショナル：佐藤、井上
配布資料	① 議事次第 ② IC/R プレゼンテーション資料 ③ IC/R（和文・英文）	
討議内容	<p>JICA 田村氏による会議説明、会議参加メンバー相互の自己紹介、百瀬によるインセプションレポートの説明後、質疑応答を行った。</p> <p><u>1. 品質管理</u> 升本：過去他のプロジェクトでは、担当分野ごとの文章の書き振りが違う、書式が統一されていない、時間切れとの理由で十分推敲されないまま報告書が提出される等、品質管理・工程管理の不十分な調査が多くあった。本調査では、このようなことがないように ISO 等の社内規定に従い推敲した上で成果品・中間成果品を提出されたい。</p> <p>田村：確認事項については、相手側との合意の前に JICA に事前相談されたい。</p> <p>百瀬：業務指示書に示されていた項目は基本的には本調査で明確にしていくが、範囲が広範である上に、短期間で和文と英文を作成するのは開発調査にとって大きな負担となる。その点に関しご理解をお願いしたい。しかし、品質管理と工程管理を徹底し完成度の高い報告書を作成していく。</p> <p><u>2. レポート</u> 須藤：IC/R の P2-36 は字が小さくて読めないため、改善されたい。</p> <p>百瀬：差し替える。</p> <p>須藤：IC/R の P3-6 の「The following items are included in the Inception Report」の以下に示されている項目（C/A、A/P、CD、JIBC Loan Procedure）については IC/R 内に明確に記載されているのか。</p> <p>百瀬：2 章のプロジェクトの「説明」部分に記載している。この 3 章の頭の部分は、説明後の「協議」事項の項目ということで提示した。</p> <p><u>3. C/P</u> 須藤：本プロジェクトには C/P が複数存在するが、各機関が果たす役割は重要である。よって、IC/R で各機関の役割をまとめて、協議を行うことを提言する。</p> <p><u>4. 調査の性格（M/P と施設の基本計画）</u> 田村：下水道に関する開発調査は M/P→F/S が一般的であるが、今回の開発調査は F/S と 2 分野におけるソフト面に重点をおいている。よって、A/P の作成及</p>	

<p>び CD の実施における十分な理解をされたい。</p> <p>升本：従来 M/P で選定した優先プロジェクトを対象として F/S を行なってきた。しかし、F/S 実施地域以外の M/P がほとんど活用されなかったり、F/S 策定後 F/S 内容に合わせるべく M/P の手直しを行なうケースもあった。これを是正するため、本調査では従来型の M/P でなく、99 年策定の M/P の更新を主とする基本計画の策定にとどめた。</p> <p>百瀬：下水道普及率の高い調査対象地域の優先プロジェクトは、下水処理場と遮集管と想定される。従い、この部分の業務内容は軽減できる。一方で、M/P で最も時間がかかり、今回の基本計画で更新する内容である人口、汚水量の推定及びその地域分布等の業務内容は従来と変わらない。</p> <p>須藤：一般論ではなく効率的な手法を提案されたい。つまり、M/P で本調査と関係ない範囲まで検討する必要はない。そのような視点から、必要ない部分は省略して構わない。</p> <p>竹田：IC/R の P2-1、フェーズ I の中で優先プロジェクトは何を指しているか</p> <p>百瀬：優先プロジェクトは処理場と遮集管となる公算が大きい。</p> <p><u>5. 用地</u></p> <p>田村：下水処理場用地は確保されているが、所有権が確定していないため、処理場用地として適切か不明である。今回の調査の最重要課題として、この土地の所有権を明確にされたい。</p> <p><u>6. 工場廃水に係る A/P 及び CD</u></p> <p>鎌田：A/P の項目が多く書かれているが、すべて実施する予定か。</p> <p>百瀬：マケドニア側の A/P に関する理解は少ないと思われるため、理解を助けるため多くを例示した。調査中に項目を抽出して実施する。</p> <p>田村：事前調査で述べられている C/A も本調査リストに盛り込まれたい。</p> <p>鎌田：A/P について短・中・長期に分けて、まとめていく予定か。</p> <p>百瀬：そのようにまとめ、中長期の一部については技プロの実施を念頭におく。</p> <p>升本：実現性の不確かな中長期の対策手法をリストアップするだけでなく、実現可能な対策を明示されたい。</p> <p>須藤：現実的に何ができるか検討の上 A/P を策定されたい。</p> <p>田村：IC/R で確認するリストの中で A/P の内容も明記されたい。具体的にいつ、誰が、何をするといったイメージで。</p> <p>友野：理解するが、短期間でまとめる事は困難である。</p> <p>田村：代わりに、C/P の意見を事前に聞いておき、来週確認する事項に盛り込まれたい。</p> <p>林：スコピエに長期計画があるのであれば、それを元に F/S や A/P に重点を置いて作成されたい。CD も重要なため、どこで、何を、いつ、導入していくか明確にされたい。</p> <p>百瀬：了解した。そのようにまとめる。</p> <p><u>7. 組織制度、財務に係る A/P 及び CD</u></p> <p>鎌田：JBIC の話では、実施中のズレトビツァダム事業のパフォーマンスが非</p>
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	<p>常に悪く、役人のやる気が問題になった。本調査ではワーキンググループを立ち上げて、役人の意欲を引き出しつつ、本当に使われる A/P 等を策定されたい。</p> <p>百瀬：役人の意欲については、独立して間もない国のため、相手側の事情を理解する必要がある。その上で適切な対応をとっていく。</p> <p>鎌田：上下水道料金の家計における負担率は廃棄物処理料金を含めて既に 7~8% と高い。本調査においても上下水道事業だけの支払い意思額ではなく、廃棄物処理を含めた額で料金設定されたい。</p> <p>百瀬：処理場建設により料金は上がる。住民にとって下水道普及に伴う料金値上げは理解しやすいが、河川環境改善の料金値上げは抵抗もあることが想定される。従い、C/P と共同でワークショップ等を通じて理解を得ていく必要がある。</p> <p>友野：独立による困難により、サービスの質は低下しているため、料金の値上げだけを求めることは困難である。しかし、現実問題としては工夫をしながら住民意識の向上を図り、支払い意欲を向上させる必要があると考えている。</p> <p><u>8. 事業化資金</u> 田村：F/S 実施後にどのように事業化へ結びつけていくのか、JBIC や IPA を含めて検討されたい。また、複数存在する S/C の内、どの機関を対象とすべきか検討されたい。</p> <p><u>9. EU 規定との整合</u> 升本：EU 規定と整合を図り、調査を行っていただきたい。</p> <p><u>10. 環境社会配慮審査会</u> 竹田：4 回審査会を開くと提案されているが、3 回とする。</p> <p>田村：調査団帰国後の 12 月中旬に第 2 回支援会議開催する。</p> <p style="text-align: right;">以上</p>
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9.12 2nd JICA Committee

《会議報告》

案件：	マケドニア旧ユーゴスラビア共和国スコピエ下水道改善計画調査	
議題：	第一回帰国報告会（第二回国内支援委員会）	
日時：	平成 19 年 12 月 18 日（火） 16：00～18：00	
場所：	JICA 6A 会議室	
参加者	<p>【国内支援委員】</p> <p>国土交通省国土技術政策総合研究所：深谷氏 JICA インド事務所：鎌田専門員</p> <p>【省庁】</p> <p>外務省国際協力局：平島氏 国土交通省総合政策局：林係長 国土交通省都市・地域整備局：鈴木係長</p> <p>【JBIC】</p> <p>国際協力銀行：伊藤氏</p> <p>【JICA 本部】</p> <p>企画調整部：竹田氏 中東・欧州部：田後氏 地球環境部：須藤アドバイザー 地球環境部：升本グループ長 地球環境部：熊谷チーム長 地球環境部：田村氏</p>	<p>【調査団】</p> <p>東京設計事務所：百瀬（総括） 東京設計事務所：友野 東京設計事務所：田中 東京設計事務所：斉藤 建設技研インターナショナル：佐藤 建設技研インターナショナル：井上 エヌジェーエスコンサルタンツ：伊澤</p>
配布資料	<p>④ 議事次第 ⑤ 第一回帰国報告会資料</p>	
討議内容	<p>JICA 田村氏による会議説明および百瀬による第一回調査期間(9月25日～11月30日)の帰国報告(スケジュール、基本方針と調査進捗状況及び下水道・工場廃水管理、水文水理、環境社会配慮、組織法制財務に関する課題の中間報告)後に質疑応答を行った。</p> <p>1. C/P</p> <p>須藤：スコピエ市の上下水道に関する運営・維持管理はスコピエ上下水道公社と理解しているが、他の行政区との関係は明確になっているか。</p> <p>百瀬：「スコピエ市の上下水道に関する運営・維持管理はスコピエ上下水道公社」と調査団も理解している。 建設される処理場の維持管理をスコピエ上下水道公社に委託するのか新たに公社を設立してそこに委託するのかは未決定である。しかし、調査はスコピエ上下水道公社に委託するという見込みで進めている。 2005年地方自治法の改定により、スコピエ市を構成する10のMunicipality(区)が下水道を含む諸事業の実施主体となるのが可能となっている。例えば、スコピエ廃棄物公社が設立される一方、Saraj Municipalityは同区を管轄する廃棄物公社を設立した。また、Sarajを対象としたF/Sでは同区の下水の維持管理はSaraj廃棄物公社を拡充してそこに委託管理することを提案している。</p>	

次回調査で、地方自治法とスコピエ市法を分析し、スコピエ市と同市を構成する 10 区の権限を調査する。

須藤：ワーキンググループが未だに決定されていないとの事であるが、早期にワーキンググループが構成されるように働きかけて頂きたい。

百瀬：ステアリング・コミッティーでは処理できない事項を扱うため、ワーキンググループを提案した経緯がある。同コミッティーを構成する 4 機関のうち運輸通信省、スコピエ市、スコピエ上下水道公社（専任 C/P1 名を配置済み）に関する情報収集・意見交換はスムーズにできており、ワーキンググループ設立の必要性は薄れた。しかし、環境都市計画省関連の情報収集は遅れがちである。これは、同省職員数が少なく、EU 支援で数多くのプロジェクトが進行している等により本調査に専任 C/P を割けないことにあるものの、次回調査では専任 C/P の配置を申し入れ調査をスムーズに進めたい。

田村：来年度末までに事業主体を決定しない場合、F/S 段階で調査に支障が発生する可能性がある。その点についてどう考えているか。

百瀬：ステアリング・コミッティーの都度、関係機関に説明および度重なる催促を行っているが、事業主体は未だに選定されていない。各省庁の利害関係・責任問題も含んでおり、事業主体は大臣あるいは事務次官レベルでしか決定できないと判断している。調査団としても今後とも決定するよう催促は続けるが、JICA からの督促がもっとも有効と判断するので JICA からの支援もお願いしたい。

## 2. 用地

須藤：処理場建設用地に 7ha 分の私有地が含まれているが、移転の対象となる住民は住んでいるか。

百瀬：住んでいない。

竹田：処理場建設用地の 7ha は私有地であるが、住民移転に関する手続きを進めているか。

百瀬：処理場建設用地は空き地であり、移転対象となる住民は住んでいない。住民移転が必要な箇所は下水道本管を埋設する計画道路上の住民である。

竹田：ステークホルダー・ミーティングに用地関係者は含まれているか。

百瀬：第一回ステークホルダー・ミーティングの開催時点では住民移転対象者が明確でなかったため、会議への参加を促していない。また、実際に用地関係者が参加していたか確認していない。

竹田：いずれかの段階で用地関係者には説明を行っていただきたい。

百瀬：了解した。

## 3. 目標年次

深谷：下水道 M/P の目標年次が 2020 年であり、管きよのみ 2030 年となっている。管きよは耐用年数が長く、布設替えが難しいため目標年次が 2030 年となっているのは理解できるが、処理場の目標年次は何年に設定しているのか。

百瀬：2020 年である。

深谷：処理場にも、全体水量相当分を最初につくってしまうような施設や設備がある。このような施設・設備を、後で継ぎ足してゆくと維持管理が非常にやりにくい。2020 年を目標年次とせず、管渠の目標年次と整合を図り 2030 年とし、処理場の段階施工で対応していく手法が現実的ではないか。

百瀬：人口の伸びが小さく、使用水量の伸びも無いため、目標年次が 2020 年と 2030 年で大きく施設規模は変わらないと思われる。処理場の目標年次については今後の再検討課題とする。

<p><u>4. 下水道処理区</u> 鎌田：下水道の維持管理を考慮すると4処理区を1処理区に統合した処理方式が経済的であると思われるが、調査団が4処理区を選定した理由について説明していただきたい。 百瀬：中央処理区に接続しないDracevo処理区については自然流下で中央処理区に接続することができず、長距離を3カ所のポンプ場で圧送する必要がある。処理人口から考えて独立した処理区にすることが経済的であった。Novo Selo 処理区および Sarai 処理区は集落が点在しており中央処理区に取り込むことが不利な地形である。よって、経済性から判断して4処理区を設定した。</p> <p>鎌田：4処理区以外の下水道整備はどのような方針を考えているか。 佐藤：4処理区以外は都市計画区域外であり、下水道整備の対象区域とはならない。また、本調査でも当初から計画対象区域外であるため、検討を行っていない。</p> <p><u>5. 人口</u> 深谷：人口増加の要因は自然増加か、それとも他の要因によるものか。 百瀬：詳しく検討していない。</p> <p><u>6. 管きよ</u> 深谷：8割の下水道管きよが整備されているが、運営維持管理状況はどのようになっているか。 百瀬：管きよについては適正に維持管理されていないため、老朽化・破損が激しいと思われる。上下水道公社の責任で管きよの修復を行う必要がある。</p> <p><u>7. 水道料金</u> 鎌田：給水量及び有収水量が算定されているが、各家庭に水道メーターは設置されているか。また、用途別使用水量も家庭・営業・公共施設・工場などが設定されているが、料金体系は異なるのか。 佐藤：水道メーターは各家庭に設置されている。また、用途別に水道料金は設定されておらず、従量制で課金されている（使用量による加算はない）。</p> <p>鎌田：下水道料金は水道料金と一体で徴収されているか。 百瀬：水道料金、廃棄物収集料金と一体で下水道料金が徴収されている。</p> <p><u>8. 事業化資金</u> 田村：事業主体が明確に決まっていない印象だが、仮にEUのグラントであるIPA FUND を組む場合にスコピエ市が対象機関となっても問題ないか。また、法的には区でも借款を受けることが可能か。 友野：運輸通信省の話では市町村が単独で借款を受けることは困難であり、従来通りに環境都市計画省が受け入れ機関となるべきである。</p> <p>平島：借款はJBIC単独で行うか、他の借款と共同で行うか検討しているか。 百瀬：IPA FUND の供与額が小さく、本処理場に適用するのは困難と判断した。有力な資金ソースとしてEBRDがあるが、EBRDの金利は市中銀行並みであるため先方側はJBIC単独を望んでいる。</p> <p>平島：本事業は借款で借用可能な金額の範囲内におさまるか。 百瀬：住民負担も含め、返済可能な金額になっているかはF/S段階で検討を行う予定。</p>
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田村：3月頃に次回の支援委員会を開催する。その頃までにプログレス・レポートを作成して頂きたい。

以上



9.13 3rd JICA Committee

《会議報告》

案 件：	マケドニア旧ユーゴスラビア共和国スコピエ下水道改善計画調査	
議 題：	第三回国内支援委員会	
日 時：	平成 20 年 3 月 13 日（木） 14：00～15：30	
場 所：	JICA 本部 11 階 11GH 会議室	
参加者	<p>【国内支援委員】</p> <p>国土交通省国土技術政策総合研究所：深谷氏</p> <p>【省庁】</p> <p>国土交通省都市・地域整備局：鈴木係長</p> <p>【JBIC】</p> <p>国際協力銀行：伊藤氏</p> <p>【JICA 本部】</p> <p>企画調整部：竹田氏</p> <p>地球環境部：升本グループ長</p> <p>地球環境部：田村氏</p>	<p>【調査団】</p> <p>東京設計事務所：百瀬（総括）</p> <p>東京設計事務所：友野</p> <p>建設技研インターナショナル：佐藤</p> <p>東京設計事務所：田中</p> <p>日本上下水道：伊澤</p> <p>東京設計事務所：山田</p> <p>東京設計事務所：斉藤</p>
配布資料	<p>⑥ 議事次第</p> <p>⑦ 第三回帰国報告会資料</p> <p>⑧ プロGRESSレポート</p>	
討議内容	<p>JICA 田村氏による会議説明および百瀬（調査団総括）によるプロGRESSレポートの内容の説明を行い、その後質疑応答を行った。</p> <p><u>1. F/S</u></p> <p>田村： 次回、実施される優先プロジェクトのフィージビリティ調査での実施内容および留意点について教えて頂きたい。</p> <p>友野： 実施後、下水処理場の維持管理費が増加するため使用料金を上げる必要があるが、料金値上げは昨年実施したばかりであり難しく、コストをどのように吸収できるかについて懸念がある。需要者の支払能力等を考慮して財務的持続性を評価する。建設費の資金調達方法およびスコピエ市（料金徴収）と中央政府間での負担割合等について検討し、提言ができればと考えている。</p> <p>佐藤： 遮集管の路線測量および下水処理場の平面測量・土質調査を実施し、施設計画・設計の再検討と F/S レベルまで精度を高める。</p> <p><u>2. 環境配慮</u></p> <p>鈴木： F/S 対象優先プロジェクトの選定で中央処理区が環境社会への影響が「大」とあるがこれについて説明いただきたい。</p> <p>山田： 中央処理区は事業規模が大きいため、他地区と比較して環境・社会への影響が「大」という意味である。具体的な影響項目は、下水処理場と遮集管路線の土地収用等である。</p> <p>鈴木： マケドニアでの土地収用の法律はどうなっているか。また、プロジェクト実施にあたり、いつまでに土地を収用しなくてはならないという法律はあるか。</p> <p>山田： 公共事業に対しては、所有者は拒否することは法律上できない。所有者は</p>	

	<p>同等の土地又は土地の対価によって保障される。例えば事業着手の前に土地収用が完了していないといけない等、事業の進捗と土地収用の進捗に関する規定は法律上ない。</p> <p>竹田：環境社会配慮審査委員からのコメントであるが、IPPC 制度により汚泥に有害物質が含まれないとあるが、含まれる可能性があるのであれば記述を変えるべきではないか。</p> <p>百瀬：現在進めている IPPC 制度の実施により、有害物資は含まれなくなるという意味で記述した。確かに運用初期には監視体制・技術の未熟により含まれる可能性は否定できないので、記述に注意する。また環境インスペクターの技術向上に関する支援等を CD の 1 つとして考慮している。</p> <p><b>3. 汚濁解析</b></p> <p>升本：降雨の季節変動がないようだが、山からの雪解け水の影響はないのか。</p> <p>百瀬：春先にかけて降雨量および雪解け水等の影響より流量が多い。ただし、支流である Treska 川上流にはダムがあるため、バルダル川と Treska 川合流以降はある程度の流量調整は行なわれている。</p> <p>升本：水質基準は低水流量時（75%超過）における遵守でいいのか。また、EU 指令の規定はないのか。</p> <p>百瀬：EU 指令での規定はない。日本は濁水流量時では厳し過ぎるので低水流量時で水質基準の遵守を規定している。マケドニアの関係機関も低水流量時での水質基準の遵守に対して異論はないようなので、低水流量時で検討する調査団の提案を受け入れたと考えている。</p> <p>深谷：汚濁解析についてだが、2020 年の Without Project のシナリオで水質がかなり悪化しているのは、汚濁負荷量原単位が増加したことによるのだろうが、2020 年の計画値が妥当か再検討しておいていただきたい。</p> <p>斉藤：バルダル川の低水量時汚濁負荷量原単位を 20g/人・日としているが、Dracevo 処理場の過去 5 年間の実績値の年平均は 30~35g/人・日である。この実績値にもとづき将来値を予測すると家庭で 45g/人・日となる。営業を含めた生活系の汚濁負荷量に換算すると 52 g/人・日となる。よって、計画値を EU 基準の原単位 60g/人・日に設定することはおおむね妥当と考えている。</p> <p>佐藤：マケドニアは EU に加入を目指していることから、EU 基準（60g/人・日）に従う必要がある。ただし、技術的にもレポートに記載しているように Dracevo の汚水水質の経年変化を精査した結果、60g を採用しても問題ないと判断した。</p> <p><b>4. CDM</b></p> <p>升本：汚泥処理プロセスに嫌気性消化プロセスがあるようだが、CDM の検討を早期段階で検討して頂きたい。</p> <p>百瀬：現在、発生する消化ガスの利用は消化槽の加温用のみを考えている。当地はそれほど気温が高くはなく、濃縮汚泥も混合濃縮であるため 3%程度ですので、夏は余剰分の消化ガスはあると思うが、冬は加温用を賄った後の余剰分は殆どないと思われる。</p> <p>佐藤：上記の理由より経済性の観点から、消化ガスを消化槽の加温用に使用するが、余剰分の消化ガスは消化ガスに含まれるメタンは二酸化炭素より温暖化効果が大きいいため燃焼させる計画である。また CDM 検討にあたり、ベースラインをどこに置くかが重要である。既存処理場でメタンを大気中に放出している状況からメタンを回収して使用するというシナリオならば既存処理場がベースとなり削減効果は大きくなる。現在スコピエには下水処</p>
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	<p>理場がなく、普通処理場での処理をベースとするのであれば削減効果は低い。</p> <p>田中：カイロの例だと、現在メタンをそのまま放出しているが消化槽を設けることでメタンを回収・使用するため効果が高く、CDM 事業として成立するが、スコピエでは処理場がなく、ベースラインをどこにするかが問題となる。</p> <p>百瀬：詳細については F/S で検討する。</p> <p><u>5. スコピエ上下水道公社</u></p> <p>升本：スコピエ上下水道公社の協力はどうか。具体的には技術的に自信があるようなので、調査団の提案を受け入れないのではなか。</p> <p>百瀬：確かにスコピエ上下水道公社は今まで施設を運営してきた経験から、技術には自信を持っている。しかし、調査団の提案を全く聞かないと言うわけではなく問題はないと判断する。</p> <p>田村：C/P の研修受入を 2 週間、10 名程度で決まった。スコピエ上下水道公社を中心に下水処理場の維持管理を習得してもらうために、施設見学や運営・経営について研修を実施したい。</p> <p>百瀬：スコピエ上下水道公社を中心に運輸通信省、環境都市計画省等の関係省庁から各 1 名を含めて人選する予定である。研修期間として調査団国内滞在中である 7 月の 1 ヶ月と 11 月以降があるが、人選する期間を考慮すると、11 月の実施が想定される。スコピエ上下水道公社に下水処理場の維持管理を研修する他に水質モニタリングの研修等を考えている。</p> <p><u>7. 下水処理計画</u></p> <p>深谷：工場 4 社について自己処理による河川への直接放流を提案しているが、河川水質への影響、料金収入等を考慮すると下水道に受け入れた方が良いのではないかと。</p> <p>百瀬：鉄鋼関連 2 社については、非常に大口であることから料金収入についてかなり有利ではある。しかし、有機物濃度が非常に薄く、生物処理に与える影響が大きいこと、処理水量が汚水量に匹敵するほど増大することと、既に一次処理施設を有しかつ IPPC 制度に則り除害設備も自社で建設する意向でもあるため、自己処理とした。その他の 2 社についても既に処理施設を有しているか、又は近い将来持つ予定から自己処理とした。</p> <p>深谷：規模が大きい上、気候の面からも天日乾燥床を採用するのに問題ないか。</p> <p>百瀬：規模については十分な土地があるため問題ない。現地の気候についても降雨量も年間 500mm 程度と比較的に少なく、夏季は暑い。冬季については氷点下まで下がることがあるが、乾燥日数に余裕をとり問題がないように計画している。</p> <p>鈴木：汚泥処分はどうするのか。また、汚泥の含有成分は分析するのか。</p> <p>百瀬：スコピエ市周辺では農業が盛んなので緑農地利用が考えられる。もし、需要がない場合は Drisla 埋立地での処分となる。調査の中で分析を行なうことは考えていない。鉄鋼関連業者と化学工場の Ohis については EU 支援の「ホットスポットプロジェクト」となっておりデータはある。</p> <p>伊澤：補足であるが、無害かどうか判定する基準はない上、溶出試験の方法も決まっていない。含有成分の検査については、現地で検査方法が統一されておらず、検査員の知識も未熟である。水質モニタリングはキャパシティ・ディベロップメントの有力候補である。</p> <p><u>8. その他</u></p> <p>田村：次回の調査で、事業実施主体の調整・確認、ならびに土地所有の確認は早</p>
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	<p>期に行なわれたい。</p> <p>百瀬： 了解した。</p> <p>升本： 今のところ調査は順調に進んでいるようである。最終的には施設ができて水が綺麗になるということで、できればJBICさんに融資をお願いしたいと思っている。今後ともよろしくお願いしたい。</p> <p style="text-align: right;">以上</p>
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9.14 4th JICA Committee

《会議報告》

案件：	マケドニア旧ユーゴスラビア共和国スコピエ下水道改善計画調査	
議題：	第4回国内支援委員会	
日時：	平成20年4月21日（月） 11:00～12:30	
場所：	JICA本部 6階 6Aテレビ会議室	
参加者	<p><b>【国内支援委員】</b> 国土交通省国土技術政策総合研究所：深谷氏 JICA インド事務所 国際協力専門家：鎌田氏 <b>【省庁】</b> 国土交通省総合政策局：福島係長 <b>【JBIC】</b> 国際協力銀行：伊藤氏 <b>【JICA 本部】</b> 審査室準備室：鈴木氏 地球環境部：須藤アドバイザー 地球環境部：升本グループ長 地球環境部：熊谷課長 地球環境部：田村氏</p>	<p><b>【調査団】</b> 東京設計事務所：百瀬（総括） 東京設計事務所：友野 建設技研インターナショナル：佐藤 エヌジューエスコンサルティング：伊澤 東京設計事務所：山田 東京設計事務所：泉</p>
配布資料	<p>① 議事次第 ② 第4回支援委員会パワーポイント資料 ③ 業務計画書</p>	
討議内容	<p>JICA 田村氏による会議説明および百瀬（調査団総括）による2年次調査内容の説明を行い、その後質疑応答を行った。</p> <p><b>1. 下水道施設計画</b> 田村： 処理場予定地近くのバルダル川に堤防を造るとあったが、誰が造るのか、そのような計画があるのか。 百瀬： マケドニア側が造る方法もあるが、処理場を囲う形を考えており事業費に入れるのが現実的と考えている。 須藤： 河川の洪水があるとのことだが、処理場予定地周辺はどのような状況か。 百瀬： 処理場予定地はあまり使用されておらず、狩猟場と砂利の採石が行われている状況である。予定地の西側を通る鉄道・北側の道路は地面より高く実質堤防の役割を果たしている。予定地のみが河川と同じ高さである。 深谷： 管渠に雨水を取り入れる計画のようだが、全量取り込むのか、途中に吐き口を設けるのか。 佐藤： マケドニア側のマスタープランでは、右岸では汚水量の50%、左岸では汚水量の100%分を雨水量として取り込むと計画であり、それに従い設計する。ファーストフラッシュは処理場内に一時貯留し処理する。貯留量を超える雨水は吐き口から河川に排出する。雨水貯留量は20ha、5時間分相当の計画である。 鎌田： 調査内容に流入汚水の水質とあるが、これは前回数値が高いのではないかとコメントした汚濁負荷量60gを変更するということか。 佐藤： 負荷量の変更はしない。</p> <p><b>2. 土地所有権</b></p>	

田村：	処理場の土地所有権はどうなっているのか。
百瀬：	リストは入手し、ローカルスタッフに翻訳を依頼している。国有地と私有地に加え一部係争中の土地があるようだ。72haのうち必要なのは35haくらいであり、なるべく国有地を選定するようにしたいと考えている。
鎌田：	遮集管は計画道路下に敷設する計画のようだが、道路の用地買収はどのような状況か。
百瀬：	前年度調査中に調査団から依頼し道路の計画が動き出した状況であり、用地買収はまだされていない。S/Cでスコピエ市は土地収用・道路建設には補助金が必要であるとの見解を述べており、運輸通信省の補助を要請すると思われる。調査団としては本調査が実施された場合の予想されるスケジュールを作成、いつまでに土地収用がされていないといけないかをマケドニア側に示すことにする。
田村：	土地収用に関しては複数の機関が関与することになり時間がかかると考えられる。責任者を明確にし、マケドニア側の行動を推進してほしい。
<b>3. CD 関連活動</b>	
須藤：	想定されるCD項目のレビューをしてはどうか。環境コンサルタントの能力評価とあるが、CDとの関係がよく分からない。
伊澤：	EUが支援している分野では環境コンサルタントが関与している。分野同士の繋がりが薄く、情報共有がされていないように思われる。またMEPPのキャパシティ・ビルディングをEUが支援しているが、訓練を受けた人材はMEPPに残らずコンサルタントになってしまっていて状況がある。どういう人がどのような能力があるのか、情報共有をどのように行っているのかを調べ、実践的なキャパシティ・ビルディングに結び付けたいと考えている。
須藤：	CDの基礎調査の結果と何をやるのかがわかり難いので、整理してもらいたい。
伊澤：	了解した。
鎌田：	スコピエ上下水道公社は市の傘下にあると思うが、A/P策定にあたって市はどのように関与するのか。
友野：	スコピエ上下水道公社は市からは独立した機関である。総裁決定や料金設定は市が関与するが、組織・人員配置については公社独自で行うことができる。
<b>4. 工場廃水</b>	
鎌田：	工場側に対する誘導策として、日本では減価償却年数を短くするなど税制面からの支援を行っている他、各工場での前処理設置やクリーナープロダクション導入のための設備投資のために低金利の融資制度を設けているが、この様な制度の導入は考えているか。また日本では水質に応じて料金を設定する水質料金制度を採っている例があるが、マケドニアではどうか。
伊澤：	工場への財政支援策については環境法でも明記しているが具体的な策はまだである。廃水処理機器の輸入免税の可能性はあるとのことだが、政府の決定事項であるとのことだ。支援策だけでなく、工場が前処理を実施するインセンティブを与えることが重要と考えている。CPの考え方、それによる最終利益がどの程度出るのかを含め、便益面について説明が必要である。水質料金制度や日本の例についてはセミナーで紹介していきたい。
鎌田：	環境インスペクターと中央分析所の関係はどのようなものか。
伊澤：	現在14名いるインスペクターは月1回工場を視察し、工場から依頼があればサンプルを取り、中央分析所が分析を行うが、分析費用は工場側の負担となる。本来は中央分析所が定期的サンプルを取り分析を行うべきであるが、財政の問題が大きいとのことである。今年から定期的なチェックを行っているとの情報もある。
<b>5. 事業化支援</b>	
田村：	他プロジェクトでは地方自治体が行った例があるようだが、この調査に関してはマケドニア側とどのように議論をする予定か。
百瀬：	既に説明したとおり、S/Cで決められることなく、ローンが決定してから作られる特別法で定められた関係閣僚会議が決定することである。F/S

	<p>調査の段階で実施主体者の決定は調査団では難しい。</p> <p>田村： 業務計画書には実施主体者となり得る機関の比較検討をすとあり、マケドニア側を後押ししてもらいたい。F/Sはスコピエ市が主体となると想定して実施するのか。</p> <p>百瀬： 地方自治法により地方自治体が主体と定めらおりこれに基づき F/S はスコピエ市を想定して行う。ただし財務省の担保が必要である。</p> <p>田村： 財務省が重要であることから、S/Cメンバーではないかと思うが、必ず協議を行うこと。</p> <p>百瀬： 了承した。運輸通信省・スコピエ市と共に財務省と協議を行う。</p> <p>伊藤： JBICとしては先方政府の意向と日本政府の意向に従う。本件のマケドニア政府における円借款候補としての優先順位は高くないと聞いており、また現在実施中のダム案件の進捗の遅れ等から、日本政府の意向もほぼ同様と考えられる。今後、本件の採択にはマケドニア財務省との意見交換が重要となることから引き続き先方との協議をお願いしたい。</p> <p>百瀬： 財務省は漏水対策が重要と考えており、場合によっては漏水と下水道がセットとなり要請することもあるかもしれない。</p> <p>升本： 今回の調査は開発調査であり、調査結果をうまく使っていきたい。JBICさんにもよろしくをお願いしたいと思っている。</p> <p style="text-align: right;">以上</p>
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9.15 5th JICA Committee

《会議報告》

案件：	マケドニア旧ユーゴスラビア共和国スコピエ下水道改善計画調査	
議題：	第5回国内支援委員会	
日時：	平成20年7月18日（金） 11：00～12：30	
場所：	JICA 本部 11階 11I テレビ会議室	
参加者	<p><b>【国内支援委員】</b> 国土交通省国土技術政策総合研究所：深谷氏 JICA インド事務所 国際協力専門家：鎌田氏 <b>【省庁】</b> 国土交通省総合政策局：福島係長 国土交通省都市・地域整備局：鈴木係長 <b>【JBIC】</b> 国際協力銀行：山本氏 国際協力銀行：伊藤氏 <b>【JICA 本部】</b> 審査室準備室：鈴木氏 中東・欧州部：田後氏 経済基盤開発部：前川課長 地球環境部：升本グループ長 地球環境部：栗元氏 地球環境部：田村氏</p>	<p><b>【調査団】</b> 東京設計事務所：百瀬（総括） 東京設計事務所：友野 建設技研インターナショナル：佐藤 エヌジェーエスコンサルティング：伊澤 東京設計事務所：山田 東京設計事務所：泉</p>
配布資料	<p>⑨ 議事次第 ⑩ 第5回支援委員会パワーポイント資料 ⑪ インテリム・レポート ⑫ JBIC 目次案への対応</p>	
討議内容	<p>JICA 栗元氏による会議説明および百瀬（調査団総括）、友野（財務/法制度/組織・事業経営）伊澤（工場廃水処理計画/水質分析）による2年次第1次現地調査（5月～7月）結果の説明を行い、その後質疑応答を行った。</p> <p><b>1. 工場廃水計画・水質モニタリング A/P</b> 山本： 下水道改善計画調査であることから、工場廃水管理・水質モニタリングについて報告されたような網羅的な調査・A/P 策定を行う必要はない。下水道計画にとって必要な工場廃水の排出基準及び各工場に必要な除害施設の提言だけで十分である。 田村： 工場廃水管理・水質モニタリングならびに組織制度・財政面の A/P 策定については JICA の指示でスコープに入れてある。必要項目を網羅する中で、優先順位をつける形で整理をしていただきたい。 伊澤： 放流基準については、水法が成立した後の話となる。放流基準を作るだけでなく、分析能力の向上やモニタリング体制の整備も必要と考える。 鎌田： マケドニアでは工場廃水の定義はどうなっているか、また規制対象となる最低排水量の規定はあるか。A/P が網羅的であるのはいいが、優先付けをし、確実に彼らの能力で実行できるものにする必要がある。下水汚泥に有害物質が含まれる可能性はあるものの、有害廃棄物処分場についてはそれだけで別のプロジェクトになるものであり、このプロジェクトで触れる必要はないの</p>	



	<p>ではないか。</p> <p>伊澤：現在の定義では、病院・研究所等は工場廃水に含まれていないが、今後入れる方向とのことである。最低排水量に関する規定はない。日本では 50m<sup>3</sup>/日以上となっているが、それ以上でも有機性の汚濁物質ならば受入可能としてもよいと考える。有害廃棄物処分場は、下水汚泥だけでなく各工場で排除された有害物質の処分に関わるものであり、マケドニア側でも処分場の必要性を認識している。</p> <p>鎌田：工場廃水を所管している機関はどこか。日本の経済産業省にあたる機関と連絡しているのか。</p> <p>伊澤：日本とは違い、工場廃水は環境都市計画省が所管している。日本の経済産業省にあたる機関とはやり取りしていない。</p> <p>山本：スコピエには大工場は多くないはずである。化学物質を使用している工場や製鉄工場など有害物質を使う工場は簡単に区分できるのではないか。各工場に必要な除害施設の提案はできないか。</p> <p>伊澤：プログレス・レポートにて工場から出てくる物質の推定をし、必要除害施設について提案をしている。</p> <p>田村：本調査は環境社会配慮カテゴリ A であり、審査会において工場廃水の水质・汚泥についての議論があった。A/P は網羅的になっているが、調査内容としては触れておくべき事項である。</p> <p><b>2. 財務・組織</b></p> <p>山本：下水道施設建設には財務が重要である。スコピエ上下水道公社の損益計算書を見ると総収入が年々減少しているが、なぜ減っているのか。減収ということは、接続数の減少という理由が考えられる。水道サービスの量・質は十分なのか、料金は適正かの分析の実施が必要である。また料金制度についても、料金が払えるか各世帯の支払可能性の分析が必要である。その上で補助金投入に関する制度の提案をしていただきたい。</p> <p>百瀬：上記分析は 8 月からの F/S で実施する。現在の料金は世帯収入の 5%ほどであり、これ以上の値上げは難しいように見えるが、持ち家率が 90%と高いこともあり、統計書の世帯の支出項目・額を分析した上で料金を提案する。</p> <p>深谷：スコピエ上下水道公社の職員数が日本と比較して過大とのことであるが、日本では一部業務を外部委託している。日本の 1.0~1.5 人/1000 軒という数字は外部委託を考慮しているのか。EU ではどのくらいの人数なのか。また漏水が 50%に達するというのに、財務は黒字となっている。これは住民から漏水 50%分も料金を取っているのだろうか。また、24 時間給水ができていくということは、50%の給水量で足りるということであり、浄水場の能力が過大となっていないか。給水量から汚水量原単位を計算したとなれば、かなり過大になっている可能性がある。</p> <p>百瀬：スコピエ上下水道公社においても漏水問題は重要と認識しており、対策を実施している。汚水量原単位は有収水量を基に一人当たり 200 リットルとしている。</p> <p>友野：日本の 1.0~1.5 人/1000 軒に外部委託の人数は考慮していない。ただ外部委託はメーター検針員であり、大きな数字ではないと考える。EU のデータは未だ取得できていない。</p> <p><b>3. 維持管理</b></p> <p>鎌田：能力開発で維持管理の改善活動として 4 点提案があるが、下水処理場の維持管理体制作りも必要ではないか。</p> <p>百瀬：処理場の維持管理については、F/S の施設計画の中で維持管理計画として提案する。現時点では処理場がなく、まず C/P 研修を通じて処理場施設への理解を深めることから始める。</p> <p><b>4. 環境社会配慮</b></p> <p>山本：処理場予定地に私有地が含まれているようだが、その土地所有者が収用に不満がある場合には、審査請求をできる制度となっているのか。</p>
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	<p>百瀬： 審査請求できる。</p> <p>升本： 施設ができあがらないと意義がない調査であり、今後実施に向けてどう調査を持っていくかが最重要課題である。本調査実施の上位目標はバルダル川の水質改善である。バルダル川では工場廃水は無視できない汚濁源であり、また下水処理場にも流れ込む見込みであり、工場廃水管理は重要であると考えている。今後ともよろしくお願ひしたい。</p> <p style="text-align: right;">以上</p>
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9.16 6th JICA Committee

《会議報告》

案件：	マケドニア旧ユーゴスラビア共和国スコピエ下水道改善計画調査	
議題：	第6回国内支援委員会	
日時：	平成20年11月21日（金） 17：30～19：00	
場所：	JICA本部 6階 6Aテレビ会議室	
参加者	<p><b>【国内支援委員】</b> 国土交通省国土技術政策総合研究所：深谷氏 JICA インド事務所 国際協力専門家：鎌田氏 <b>【省庁】</b> 国土交通省都市・地域整備局：鈴木係長 <b>【JICA 本部】</b> 中東・欧州部：斉藤課長 中東・欧州部：山田氏 地球環境部：森次長 地球環境部：熊谷課長 地球環境部：栗元氏 地球環境部：清水氏</p>	<p><b>【調査団】</b> 東京設計事務所：百瀬（総括） 東京設計事務所：泉 東京設計事務所：高橋 東京設計事務所：山田 東京設計事務所：安随 テラ・コーポレーション：友野</p>
配布資料	<p>⑬ 議事次第 ⑭ 第6回支援委員会パワーポイント資料 ⑮ ドラフトレポート（和文案）に対するコメント及び回答</p>	
討議内容	<p>JICA 栗元氏による会議・調査スケジュール説明、および百瀬（調査団総括）による F/S 調査結果の説明を行い、その後質疑応答を行った。</p> <p><u>1. 雨水の取扱いについて</u> 深 谷：雨の取り込みについて、最終的な目標としては完全に分流化するのか。また、完全に分流化を行う目標年はあるのか。雨を取り込んでいる期間は施設が大きくなるがこれをどう扱うのか。 百 瀬：最終的な目標は分流化とするが、経済状況から目標年は明確にできないところである。雨水量の増加分は、施設計画で用いた一日平均水量と、一日最大水量の差分と考えられるため、施設が過大とはいえないと判断した。</p> <p><u>2. 料金について</u> 深 谷：使用料はこの維持管理費でいくといくら増加するのか。 百 瀬：現在よりも2割の料金値上げで収支が合う計算である。 斉 藤：料金の集金はどのようにするのか。 友 野：水道公社によって、水道料金と共に下水道料金を回収する。回収方法は水道メータの検針により、水量に応じて使用者に請求書を送る。この回収率は80%程度である。 斉 藤：現在の維持管理組織をなぜ再編成する必要があるのか 友 野：旧体制のままであると、市場経済主義の観点からいうと非効率な面があるので、これを期に組織の提案を行った。編成内容についてはカウンターパートの了解を得た。</p>	

<u>3. 施設設計</u>	
鎌田	：遮集管の縦断について、1000mmの管が周りより低い遮集管に取り込めるのか、施設配置図の中に波線があるが、これは何を意味しているのか。
百瀬	：伏せ越し管であるため、この縦断計画で問題ない。なお、流入間の1000mmの場合は、管の末端にスコピエ市がポンプ場を計画しており、これを経て遮集管に流入する。
安随	：波線は遮集管を現している。本来あるべき西側の道路上に訂正する。
清水	：遮集管の維持管理が若干安いように思われるが、どのように算定したのか。
安随	：日本の実績では80円/m程度であるが、人件費が安価な分を考慮して計上している。
清水	：汚泥処理処分計画も無害・農業利用・有害と選択肢が多いが、汚泥の処分費として何を計上しているのか。また、工場廃水のモニタリングについても目標が無いと何を基準にしたらよいか不明確にならないか。
百瀬	：原則として無害にすることを目標とし、農業利用・一般廃棄物処理を行う。このため処分費は全量を一般廃棄処分した場合を計上している。
高橋	：工場廃水管理の目標は、放流水質を守ることを第一としている。汚泥としては間接的に影響を受けるかと考えられる。
深谷	：管渠の維持管理に関して、費用の計上と報告書の清掃点検回数との整合を図った方が良い。1,800mmの幹線についても高圧洗浄を考えているようだが、難しいのではないだろうか。また、処理場予定地は地盤が悪いと思われるが、用地造成費は計上しているのか。
百瀬	：整合は取るようにする。造成費についてはレキ質土であるので直接基礎としている。また、処理場整地高は現在地盤高と同じに設定している。
森	：近頃為替レートの変動が大きいですが、どう考えているか。
百瀬	：積算は9月に行い為替レートは8月までの直近6ヶ月の平均値で行った。日本円に対するレートは大きく異なっているが、ユーロとマケドニア・デナールとのレートは現在と当時で大きな変化はない。
鈴木	：CDMの便益はプロジェクト費用に反映しているのか。
百瀬	：CDM事業は、今回適用できないという結果なので、計上していない。
<u>4. 建設スケジュールについて</u>	
深谷	：建設スケジュールについて、遮集管の建設が処理場と同時期になっているが、もう少し遅らせて供用開始時期に合わせればよいのではないか
百瀬	：遮集管の建設については、実用的には遅らせてもよいと判断する。しかし、各年の事業規模の均等化を図るため、この時期にしている。
<u>5. 環境社会配慮</u>	
鎌田	：土地収用面積が報告書と発表資料で異なっている。
山田	：発表資料にある974,050haが正しい。
斉藤	：土地収用に関して問題になることが多い。完全な国有地が9.1%程度であり、残りの90%程度は非国有化の請求がでていとある。この状況を先方はどう考えているのか。
百瀬	：都市計画において水経済区域に位置づけられているため、所有者は国へ売

	<p>却しなければならない。所有者へは補償金を支払うことになる。用地買収のプロジェクト期間としては、1年間としているが、3年の猶予を見込んでいる。なお、用地取得費には補償費を含んでいる。</p> <p>山 田：非国有化の請求は、現在のところ9件出ている。</p> <p>森：天日乾燥床が保護区の側になるが、保護区での開発については慎重にする必要がある。環境アセスメントが必要なのか。</p> <p>百 瀬：保護区を避けて施設を配置した。保護区近くに配置した乾燥床については、視察したマケドニアの処理場でも臭気は無く、問題は無いと考えている。アセスメントはこれについて行っていない。</p> <p>鎌 田：汚泥天日乾燥は乾燥しているので鳥への影響は無いかと考えている。環境配慮については手続きに沿ってやれば問題無いのではないかと。</p> <p><u>6. 工場廃水について</u></p> <p>鈴 木：工場廃水のモニタリングについてマケドニアから技術協力の要請があるが、それとの関係は。また、スケジュールからいうと来年度そのプロジェクトを早期にする必要があるのか。</p> <p>高 橋：国全体の工場廃水監視にかかわるプロジェクトなので、制度構築を行う時期に合わせる必要がある。EU加盟の件もありタイミングが重要である。</p> <p>森：今回の議論を踏まえ、コメントがあればお願いしたい。引き続きよろしくお願いしたい。</p> <p>以上</p>
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