Chapter 8 Risk Analysis and Contingency Plan

8.1 General

The sanitation project comprises sewer laying, construction of pumping stations and sewage treatment plant and their operation. The risk involved in laying the sewers is mainly for larger pipelines which require lifting by cranes. The risk of mechanical equipment failure and thereby occurrence of accidents cannot be overlooked.

Contingency measures plans have been prepared for:

(i) sewage treatment works that could reasonably be expected to cause significant environmental impacts as a consequence of operational disruption (i.e. maintenance, etc. or breakdown);
(ii) accidents which may occur while laying sewers or during construction of the treatment works;
(iii) discharge of sub-standard wastewater into the environment from STP which could cause a significant public health impact, and which therefore requires a continuous system of influent / effluent monitoring to identify potential problems as and when they arise.

In the preparation of the contingency measures:

- the most likely causes of process disruption / breakdown have been identified;
- an attempt has been made to estimate their probability of occurrence;
- the possible resultant environmental adverse impacts are presented;
- the recommended courses of action to minimize the severity of the impacts have been highlighted;
- the responsible agency who will act in case of emergencies has been indicated.

Table 8.1 gives the potential risks due to construction, operation and maintenance and corrective actions. The major risks which can result in breakdowns and disruptions are described below.

8.2 Power Supply

One of the main reasons for disruption during the operation phase of the treatment works is very likely to be power cuts due to a transmission line problems and energy shortage. Power cuts and the reasons for them should be monitored in advance so as to set a reliability analysis at the new treatment plant.

It is recommended that the new treatment plant influent and pumping station should be equipped with a branched connection to ensure continuity of operation in case one line remains out-of-order. It also suggested that standby power generators are provided to ensure at least minimum services in case of prolonged power cuts.

Also the technology chosen should be able to survive short spells of power cuts.

8.3 E&M Equipment Disruptions

Operational disruption due to E&M equipment can be avoided by spare parts and stand-by provision

available at site.

O&M instructions and manuals should be provided by the contractor of the treatment plant with training of the operation staff for the new plant.

Table 8.1 Risk Analysis and Contingency Plan

	Works	Risks	Impact	Corrective Action Plan	Responsibility
1. Accidents related to Construction					
1.1	Sewerage	• Accodents due to pedestrians falling into the open treanches	Significant	• Excavated trenches should be provided with adequate barricades • Signboards in bold letters to be displayed in prominent places • Solid planks with guard rails should be provided across the trenches for crossing	Contractor
		• Accidents due to vehicular traffic and risk to pedestrians, workers, vehicle drivers	Significant	• Traffic diversions and signboards should be displayed prominently • Proper lighting should be provided at night time • Co-ordination with traffic police in managing traffic	Contractor / GTW&SA
		• Accidents due to failure of machinery such as cranes	Significant	• Workers should be trained on contingency management • Emergency medical help should be available immediately • The contractor should have a proper safety policy issued to workers and should strictly comly with all the safety regulations	Contractor
		• Accidents due to carelessness of workers	Significant	• Workers should be provided with protective clothing and helmets • Workers should not be allowed to work when alone • Workers should be trained on first aid • Emergency medical help should be available immediately	Contractor
		• Breakeage's of water supply pipes and services connections	Significant	• Inform public in advance about works • Make temporary arrangements for not disturbing water supply in case some pipes have to be displaced	Contractor/ GTW&SA
1.2	Treatment Plant	• Risk of accidents and loss of limb and life	Significant	• During construction effective safety and warning measures including all the above mentioned safety precautions should be followed by the contractor and GTW&SA should insists on compliance by contractor • Lighting of construction site and safety signes to be installed	Contractor/ GTW&SA

	Works	Risks	Impact	Corrective Action Plan	Responsibility
2. Accidents related to Operation & Maintenance					
2.1	Sewers	• Accidents to operator / GTW&SA personnel	Significant	• Operators should not enter the monholes when alone • Operators should check the gases before entering the manholes • Operators should wear protective clothing, helmets and masks • Operators should enter the manhole by lowering themselves with a rope or a harness tied safety above • Manhole covers should be lifted using proper lifting keys • Emergency medical services should be available round the clock • At least one person of management level should be on duty at all times	Operator/ GTW&SA
2.2	Treatment Plant	• Breakdown of wastewater treatment units or overall poor condition)	Not Significant	• The treatment plant will require regular maintenance (preventive maintenance rather than reactive maintenance should be insisted upon)	Operator/ GTW&SA
		• Breakdown of mechanicla equipment	Not Significant	• Adequate standby for pumps and motors should be provided • Adequate quantities of reliable apre parts should be available on site • Presence of mechanics to take corrective action • All standby equipment should be regularly checked to ensure full working order	Operator/ GTW&SA
		• Maintenance of sludge drying beds: - risks of prepetuation of mosquitoes and other vectors - risk of bad odors - risk of groundwater pollution	Not Significant	• Sludge drying should be maintained properly • Wet sludge should be raked frequently and dry sludge should be removed and stored / disposed off • Ensure proper drainage • Operator should ensure that there is no standing water on the sludge drying beds	Operator

	Works	Risks	Impact	Corrective Action Plan	Responsibility
2.3	Treatment Plant (continued)	• Failure of biological process due to toxicity, poor maintenance, etc. (contamination of the effluent with toxic industrial effluents is the major reason for failure of biological treatment systems)	Significant	• The secondarybiological treatment should be by passed and the water should be discharged after primary treamtne only • All relevant authorities should be informed on potential health risk to public • The biological process should be revived • Inoculation or addition of nutrients should be carried out, if needed	Operator

Chapter 9 Environmental Management, Training and Monitoring Plan

9.1 General

The success of the Environmental Mitigation Plan depends on the efficiency of the organizational set up responsible for the implementation of the program.

The Environmental Management Plan will consist in:

- Setting up the organizational set up to implement the mitigation measures in operation phase;
- Ensuring a proper operation and maintenance of the treatment works;
- Ensuring a proper maintenance of the sludge drying beds and the disposal of dry chemical sludge in a proper landfill site;
- Monitoring the waste and treated water quality;
- Monitoring the built in pollution control equipment, for vehicles and equipment;
- Maintaining tree plantations around the treatment plant

9.2 Environmental Management

During construction phase, the responsibility to take mitigation measures should be fallen mainly on the contractor under the supervision of the consultants and GTW&SA. When treatment plant starts operation, the Manager will take the responsibility to conduct Environmental Management Plan, who will be main person in charge of the operation and maintenance of the treatment plant. The Manager shall have responsibility to monitor these works:

- Collecting waste and effluent quality;
- Implementing the environmental control and protective measures;
- Controlling the sludge treatment, disposal and re-use;
- Collection statistics of health of workers and the population of surrounding areas;
- Ensuring the development and maintenance of the green belts;
- Monitoring the progress of implementation of Environmental Management Program;
- Coordinating the environment related activities within the project as well as with outside agencies.

9.3 Monitoring Plan

To evaluate the effectiveness of the Environmental Management Plan, regular monitoring of the important environmental parameters will be taken up by GTW&SA with the help of MoEFWM and institutions.

(1) Sewage and Effluent Quality

The sampling of inlet and outlet will be carried out to check the performance of treatment plant. The parameter such as pH, transparency and SS will be analyzed daily and the parameter such as BOD and COD will be analyzed one a week in the treatment plant. These data should be delivered to the Manager to check that the treatment plant operates properly and no environmental pollution occurs. The cost of sewage and effluent quality monitoring is included in the O&M cost of sewage treatment plants.

(2) Water Quality of Receiving Body

The monitoring of river water quality is conducted by Institute of Hydrometeorology, and analysis parameters are temperature, pH, COD, BOD, NO_2, NO_3, NH_4, T-P, etc. Institute of public health also monitors the river water quality once a month at 32 observation points in rivers near Tirana, Shkoder, Durres, Elbasan, sarande, Vlora. In close cooperation with there institutions, GTW&SA should collect the monitoring data to check the water quality of receiving body.

(3) Air Quality, Noise Monitoring, Groundwater and others

The monitoring of environment is conducted by other institutions under MoEFWM. The monitoring of river water quality, air, noise and meteorology is done by Institute of Hydrometeorology, and Geological Survey is in charge of groundwater. GTW&SA should monitor the air quality, noise and groundwater with the close cooperation with these institutes. The table below shows the environmental monitoring items and institutions which is conducted by the request from MoEFWM.

Table 9.1 Environmental Monitoring conducted by Various Institutions

Subject	Institution	Measurements	Frequency and Place
Groundwater	Geological Survey	• Na^+, K^+, Ca^{2+}, Mg^{2+}, Fe^{2+}, Fe^{3+}, NH_4^+, HCO_3^-, CO_3^{2-}, Cl^-, SO_4^{2-}, NO_3^-, NO_2^-, mineralization, hardness • Cu, Pb, Zn, Cr • Pesticides • Microbiological	• Twice a year, 25 observation points in 6 water basins • Twice a year, 9 points • Twice a year, 25 points • Twice a year, 25 points
Rivers	Institute of Hydrometeorology	Temperature, pH, alkalinity, dissolved oxygen, Ptotal, NO_3^-, NO_2^-, NH_4^+, BOD, COD	Twice a year, 13 points in 13 rivers
	Institute of Public Health	• Ptotal, NO_3^-, NO_2^-, NH_4^+, BOD, COD, turbidity, alkalinity • Microbiological analysis (total Coli, Faecal Coli, Faecal Streptococcus)	• Once a month, 32 points in rivers near Tirana, Shkoder, Durres, Elbasan, Sarande, Vlore • Twice during summer, 3 points
	Institute of Nuclear Physics	• Cl^-, K^+, Ca^{2+}, Ti, Va, Mn^{2+}, Fe^{2+}, Fe^{3+}, Ni, Cu^{2+}, Zn^{2+} • Beta activity	• Twice a year, 13 points • Twice a year, 13 points
Air	Institute of Public Health	SPM, PM10, black smoke, SO_2, NO_2, O_3, Pb	Five days a month, 12 stations
	Institute of Nuclear Physics	• Beta total • Pb, Cu, Hg, Cr	• Four times a year, 3 points • Four times a year, 2 points
Noise	Institute of Public Health	Noise	10 day intervals for each season, three times a day. 9 poinst in Tirana
Soil	Institute of Soil	• In inducstiral area; heavy metals (Zn, Cu, Co, Cr, Ni, Pb, Fe, Mn, Mg, Na, K, P) • Soil fertility in agricultural land (pH, Na, Cl, SO_4, P, K, Mg, Ca, N); erosion	

Source: Environmental Performance Review of Albania, United Nations, 2002

(4) Odor Monitoring

There is no regulations or quality standard to monitor the odor, and odor problem will not happen when the STP is properly operated and maintained. Thus, the installation of analytical equipment or analysis of odor are not included in the monitoring plan, however, the chemist working in the laboratory in the STP will monitor the odor by walking around the STP twice a month. And if the odor is identified, the chemist reports it to the Manager and the Manger will take the appropriate action for odor control. The cost is included in the O&M cost of sewage treatment plants.

9.4 Environmental Training

The environmental monitoring plan will be successful only if it is implemented by trained and skilled staff. The training of the qualified staff should be necessary not only in day-to-day operation and maintenance of the STP, but also in environmental aspects. It will be essential to involve the staff who will be responsible for the execution of the Environmental Management Plan, in the construction phase, as well as to train the staff in practicing the mitigation actions and the day to day monitoring program during the operation phase.

The training should include:

- Basic concepts of pollution control techniques in the various methods of sewage treatment,
- Operation and maintenance of the sewage treatment plant,
- Emergency preparedness to handle adverse situations,
- Principles of wastewater analysis,
- Other environmental monitoring techniques,
- Development of green belt and its maintenance,
- Communication with farmers and general public.

This training is different from the mandatory training required for operation and maintenance of the sewerage treatment plant.

Chapter 10 Public Consultation

10.1 Objectives

In accordance with the new "JICA Guidelines for Environmental and Social Considerations", and Albanian Regulation Nr.1, dated 17.08.2004 on "Public Participation of EIA Process", public consultation has been incorporated into this project from an early stage.

The objective of the JICA guidelines is to encourage the recipient governments to take appropriate considerations of environmental and social factors. The basic principles regarding environment and social considerations are;

- Cover a wide range of the environmental and social impacts
- Ensure the accountability and transparency of decision-making
- Ensure a wide range of meaningful participation of stakeholders
- Disclose information
- Enhance organizational capacity

The purpose of the Albanian Regulations Nr. 1, dated 17.08.2004 is to guarantee the public participation in the process of evaluation of environmental impact based on the requirements of the new environmental legislation; the Convent of AARHUS and the respective directives form the European Union (EU).

Based on the guidelines and regulation, the public consultation is conducted.

10.2 Process of Public Consultation

It is important to consult with the stakeholders to foster support for the projects. Four stakeholder meetings shall be held during the study period after each important stage. *Figure10.1* shows the flowchart of public consultations.

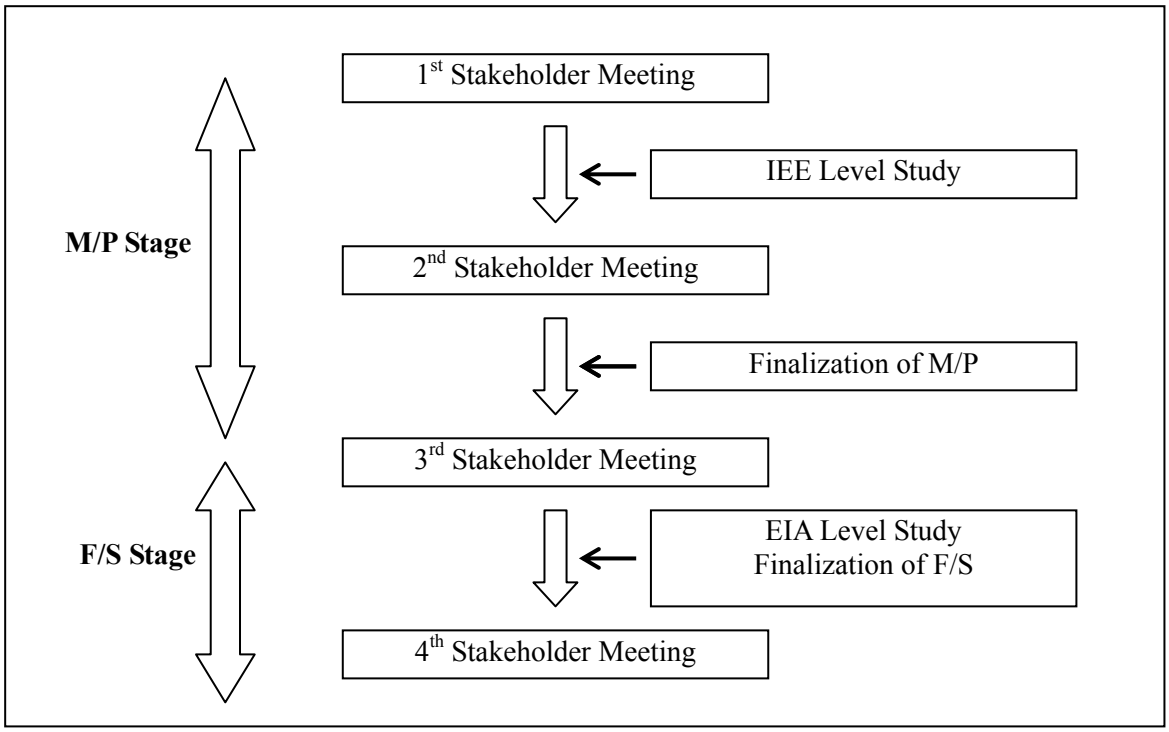

Figure 10.1 Flowchart of Public Consultation

Each stakeholder meeting is scheduled as shown in the table below.

Stakeholder Meeting	Contents	Timing
1st	- Explanation on JICA Study - JICA Guidelines for Environmental and Social Considerations	4 November 2005

	- Plan of Public Consultations, Scope of IEE	
2nd	- Progress of the Study - Explanation of the Proposed Sewerage System - Result of IEE	7 December 2005
3rd	- Explanation of M/P - Explanation of Priority Project selected in M/P - Scope of EIA level study	24 February 2006
4th	- Explanation on Priority Project - Result of EIA level study - The result and recommendations of JICA Study	12 July 2006

10.3 Selection of Stakeholder

According to the Albanian Regulation, the "Public" is defined as the public entirely, interested public, influenced public, local community, and environmental non-profit organizations being national or local and other organisms from the civil society. The stakeholders are selected by DPUK in collaboration with JICA Study Team, and the stakeholders are categorized:

- People in the Study area and people who will be affected by the proposed projects
- Responsible ministries and relevant government agencies
- Local governments such as municipality, commune, and counsel in the study area
- International organizations and donors
- Non-governmental organizations
- Universities and research institutes
- Private sectors

The main stakeholders are identified and selected regularly based on the roles and responsibilities of each stakeholder at each stage of the pubic consultations.

10.4 Minutes of Meetings

The minutes of meetings are attached in this appendix.

Chapter 11 Conclusions and Recommendations

The objectives of implementing the sewerage project in Greater Tirana are to improve the sanitary conditions of the city and to stop the flow of untreated sewage into the Lana River and improve the water quality. A sewerage project with such an objectives is associated with positive impacts.

The project as a whole has positive impacts:

- to the water environment and the public health through water quality improvement in the operation phase,
- to the social environment through increase job opportunities both in the construction and the

operation phase.

Following possible impacts are identified as negative impact during the construction phase but they are only temporary and can be minimized by preventive consideration and appropriate countermeasures:

- Impacts on traffic flow
- Impacts on air and noise
- Impacts on health of workmen and residents near construction site
- Impacts on daily life of residents near construction site
- Impacts on public utilities

Following possible impacts are identified as negative and continuous impact during operation but can be minimized by prior consideration and appropriate countermeasures:

- Water environment
- Noise and odor
- Sludge disposal

Overall, it can be concluded that the priority projects that will be implemented will have a positive effect on the improvement of the quality of the river and public health. The mitigation measures, if followed correctly will not have any adverse impacts on the environment.

However, these recommendations should be followed by Albanian Government.

- Land acquisition should be strictly followed by Law 8561, dated 22.12.1999, "On Expropriations and Temporary Takings of Private Property for a Public Interest" and four Council of Ministers decisions which define the procedures for expropriation of immovable property in Albania. The expropriation of property is compensated by cash based on market value or land. The settlement does not exist within the proposed site at present, thus no resettlement will be occurred. However, there will be the possibility of new housing construction within the site when the Albanian Government acquires land. If the settlement exists with in the site, the Albania Government should take necessary actions for the resettlement.
- There are some houses close to the proposed STP. There is the possibility that they will suffer from the STP and they prefer to move to another place, rather than living close to the STP. Thus, when a public notification is published, DPUK should consult with these people to confirm their will.
- The Sharra Landfill site is proposed for the sludge disposal site for the moment. But the capacity will be not enough after 2-3 years and Sharra has the environmental problems, so DPUK and GTW&SA should have the close discussion with the Tirana Municipality about the new landfill site which is proposed by the World Bank.
- The information disclosure is not done in a positive manner. The Albanian Government ratified the Convent of AARHUS so that DPUK should conduct the positive information disclosure and promote the public participation in adherence with the spirit of Convent of AARHUS.

Annex 1 : Minutes of Stakeholder Meetings

Minutes of the 1st Stakeholder Meeting

The Development Plan for Sewerage System and
Sewage Treatment Plant for
Greater Tirana

DPUK (General Directorate of Water Supply and Sewerage), MPWTT (Ministry of Public Works, Transport and Telecommunications) in collaboration with JICA Study Team, organized a Stakeholder Meeting on 4th November, 2005 at Qendra Kulturore e Ushtrise, Tirana.

The meeting started at 10.00 AM with the introduction speech of Mr. Donard Strazimiri, General Director, DPUK.

1. Introduction Speech, by Mr. Donard Strazimiri, DPUK Director

Mr. Donard Strazimiri summarized that the main purpose of the meeting was to inform stakeholders in this sector – central government, local government, NGOs and donors on the contents of the Study and invited them to participate in assessing positive and negative impacts caused by this project. He asked for active participation so that the project benefits most and has high level of transparency.

2. Presentation Part 1, by Mr. Petrit Koci, PIU Director, DPUK

Mr. Koçi, introduced the JICA Study for the Development Plan for Sewerage System and Sewage Treatment Plant for Greater Tirana in the Republic of Albania. He outlined the pollution situation in the Greater Tirana. He mentioned some of the previous studies such as "The Study on the Sewerage System in Metropolitan Tirana in the Republic of Albania" (JICA 1998), "Strategy Plan for Greater Tirana" (World Bank 2002), other studies made by Kamza and Kashar Municipalities and the Master Plan on Water Supply carried out by the Italian Cooperation.

He emphasized some of the study components such as the preparation of the Master Plan by the end of 2005, target year for the design plan of 2022, definition of the Study Area called Greater Tirana according to the World Bank definition. The study concludes with the Feasibility Study which is going to include all the priority projects as well as informed participants on the Technology Transfer process.

Mr. Koçi explained further who were the main players in this project mentioning the Japanese part made of the Advisory Committee, JICA and the Embassy of Japan who have dispatch the JICA Study Team to Tirana to carry out the study and on the other side the Albanian part made of the Steering Committee, Ministry of Public Works, Transport and Telecommunication with its DPUK structures, and also Municipalities and related Water Supply and Sewerage Enterprises. He informed stakeholders on the study schedule being divided in four phases and that in the end of each phase a stakeholder meeting will

be held. The final phase of the project will be the Feasibility Study.

3. Presentation Part 2, by Mr. Harutoshi Uchida, Team Leader, JICA Study Team

Mr. Uchida explained the JICA Guidelines for Environmental and Social Considerations. He outlined the background and the reason why the guidelines were renewed, its objectives and concepts. He informed that this meeting is held according to the JICA Guidelines in order to give information on the project to the public and contribute to proper consensus among stakeholders. He also explained the focal points of the JICA Guidelines such as information disclosure, laws and standards of Albania which should be complied, told the participants that they could access these Guidelines at JICA's Homepage.

4. Presentation Part 3, by Ms. Shouko Yamada, Environmental and Social Consideration Expert, JICA Study Team

Ms. Yamada explained how and when public consultation would be done in this study. She informed that 4 stakeholder meetings will take place at the end of each phase. She also explained how the information is disclosed to the public. She gave information on the IEE (Initial Environmental Examination) Study which will be carried out in this study in order to review current environmental and social conditions in the project area and to identify and evaluate the significance of the impacts. After the explanation of what kind of social and environmental items should be checked, she also informed that result of this IEE study will be given in the 2nd Stakeholder Meeting due in December 2005.

5. Questions & Answers

5.1 Main issues on the environmental and social considerations

(1) Mr. Genc Myftiu, Director of Sustainable Environmental Development Agency (S.E.D.A) expressed his regrets and shared responsibility for present situation in sewerage network system. He appreciates the Japanese assistance and their insistence in having a wastewater treatment plant. Albania's integration in the EU depends in the achievement of European Standards and development of proper sewerage system and having wastewater treatment plants will contribute in achieving these standards.
He recommended:

1) Firstly, this study should be conducted as quickly as possible so together with the results of the Italian Cooperation can trigger investments in the sector of water supply and sewerage system so final improvements are achieved in this sector as well as starting the construction of the wastewater treatment plant which I believe is a priory project.
2) Secondly, should be clarified the issue of categorization of the project. This project should be based on Albanian Environmental Standards as well as EU Environmental Standards. Unified Environmental Standards should be used in accordance with Albanian Environmental Laws and EU Environmental Laws in

order to have one unified categorization of the project in accordance with the Albanian Legislation on Environment. This will also help you as in the end of the day if you produce a study which is not in accordance with Albanian Legislation than the work will not be valid.

(2) Mr. Bashkim Lushaj, International Environmental Expert, Head of the Regional Environmental Agency, made the following remarks:

1) The material presented in this stakeholder meeting should have been reviewed first by the present stakeholders before the meeting as being technical participants in this project. It should have been presented as a common material as this is a two party meeting with a common purpose.
2) JICA Guidelines should be reviewed and adopted to the Albania's conditions. Especially regarding to the Strategic Environmental Assessment as this is an activity with impacts at nationwide in water, land, air and biodiversity. Impact assessment should be carried out according to the Albanian Legislation. In the same time we ask for help for Social Impact Assessment.
3) This project should be ranked as category A according to the Albanian Legislation, EU Legislation and World Bank. EIA, Social Impact Assessment, Strategic Impact Assessment of this activity will be evaluated and certified with Environmental Permit by the Ministry of Environment, Forests and Water Administration. I suggest the Japanese side to take into consideration the Government Decision on the above issues.
4) Last remark is on the quality of translation work.

(3) **Mr. Ioannis Spyropoulos, EC Delegation** made the following remark: JICA Guidelines should be conform EU as Albania is on its way to become EU member.

(4) **Mr. Stavri Ristani, Vice Minister, Ministry of Public Works, Transport and Telecommunications** also made the following comments:

1) Recommend closer cooperation with municipalities and communes affected by this Master Plan.
2) Please refer in your study to the EU standards, legislation, since Albanian's final goal is EU membership.

(5) **Mr. Arjan Skenderi, Director of Foreign Relations Directorate, DPUK** made the following remark: In the initial report from JICA was said that the EU standards would be taken into consideration. Why did this change?

(6) **Mr. Harutoshi Uchida, Team Leader of JICA Study Team** replied:

1) Nothing has changed. The Study considers firstly the Albanian Standards, secondly EU standards, and than other international standards, including Japanese standards. Maybe today's presentation misled you in this issue, probably because JICA guidelines were too much emphasized. This is a JICA Study this is why we also should consider the JICA Guidelines to conduct the environmental and social considerations on the proposed projects in the Study. I hope you would

understand the focal points of the JICA Guidelines and specially the importance of the public consultation and participation.

2) We would also like to emphasize that the major actor on the environmental and social consideration is an Albanian executing agency, now in the Study phase the DPUK is the responsible agency. The JICA team would provide technical assistance to conduct the EIA study for the proposed projects in the Master Plan.

(7) **Mr. Sadedin Limani, Director of Project Monitoring and Coordination Department, Ministry of Public Works, Transport and Telecommunications**, made the following comment: JICA Study team have received from the Albanian Counterpart all the relevant information in relation with the Albanian Legislation and Albanian Standards. The Guidelines they are emphasising today have mainly to do with technical aspects of carrying out the project.

(8) **Mr. Stavri Ristani, Vice Minister, Ministry of Public Works, Transport and Telecommunications** made comments on ownership and sustainability being important issues.

(9) **Mr. Ioannis Spyropoulos, EC Delegation**, also made the following remarks: Seeing that you are considering the issue of ownership and accountability of recipient countries, this is very much related to the issue of sustainability.

(10) **Mr. Gjergji Thomai, ex Director of Directorate of Urban Management**, made the following comments: Investment should be separated from the expropriation. This should take place as soon as possible as in few years time this process will be impossible due to the huge costs of expropriation.

5.2 Other Issues on the Study

The following remarks were made from the participants.

(a) Study Area

Mr. Ioannis Spyropoulos, EC Delegation asked if the study area and the administrative area does not coincide with drainage basin or is it the same?

Mr. Harutoshi Uchida, Team Leader of JICA Study Team replied:

1) Study area is defined based on the Strategic Plan of World Bank Study. The area does coincide with the water supply plan area. The area covers the river basins of Lana and Tirana considering topographic features in principle.
2) These planning issues would be discussed in the Steering Committee in this Study as shown in the Today's presentation material, Part I. We prepare the sewerage plan based on the existing and latest information provided by the Albanian side as well as the latest orthophoto and other available information.

(b) Target Year

Mr. Stavri Ristani, Vice Minister, Ministry of Public Works, Transport and Telecommunications made the following comments: Target year is very near (2022) so a lot of work has to be done. I would like you to foresee what is going to happen in 17 years in terms of development so this study is relevant to the future. Please give your recommendations on the matter.

Mr. Ioannis Spyropoulos, EC Delegation also expressed that the design target is 2022 for the treatment plan as for other collector network it should be designed for a larger period of time.

Mr. Harutoshi Uchida, Team Leader of JICA Study Team, replied: Target year was initially forecasted the year 2017 by World Bank. We postponed the target year to 2022, the same target year with the Water Supply Plan since the sewerage and water supply are very much related together.

(c) Institutional and Financial Issues

Mr. Philip Giantris, Executive Director of the Water Supply and Sewerage Association of Albania, made the following comments:

1) Is the final report going to make specific recommendation for the institutional structures for the wastewater service and will JICA require these structures to be in place before further investments are made?
2) We will encourage you to be very tough on this institutional issue and make the people decide before making large investments. Put the owner in the beginning of the process, so make the government or the governments find the owner.
3) Will the final report calculate the cost/impact of wastewater transmission, treatment and disposal and will it have impacts on future tariffs?

Mr. Ioannis Spyropoulos, EC Delegation, made the following remarks: It is important to be understood from the Albanian side the importance of paying for the service provided as else where in the world.

Mr. Stavri Ristani, Vice Minister, Ministry of Public Works, Transport and Telecommunications commented again on: Stable development on urban planning for the future as institutional strengthening is going to be the future.

Mr. Harutoshi Uchida, Team Leader of JICA Study Team replied:

1) The ownership and sustainability is an important matter in this project. Mr. Jack Bannister, our Institutional Expert, is working on the legal and institutional matters.
2) These kinds of issues also should be discussed because financial viability is most important especially in second phase of this Study. This matter will be consulted with Albania side and finally we will propose recommendations.

(d) Land use plan

Mr. Ioannis Spyropoulos, EC Delegation commented:

1) The study area, if the study team is in possession of the final Land Use Plan, as it is a very important issue. If the Land Use Plan changes drastically in terms of population growth then the project will become invalid. Size of the population to be left out of this Master Plan also matters.
2) Your project depends on the Land Use Plan and stable development plan.

Mr. Harutoshi Uchida, Team Leader, JICA Study Team replied that as he explained in the Study area, our study is based in the latest information provided by the Albanian Government. We know that the World Bank and Municipality of Tirana are initiating an updating work for the Regulatory Plan related to the Strategic Plan. We had hoped that such kind of land use plan could be used in our Study. But the results of World Bank study will be available next year. Because our Sewerage Master Plan (M/P) will be formulated by the end of December 2005, we could not wait for the World Bank study results; we would prepare our M/P based on the current information of land use.

(f) Others

Mr. Ioannis Spyropoulos, EC Delegation, commented again on the technology transfer addressed in the presentation. As we say in the donor board meetings, we expect the government should be in the driving seat. Therefore this is achieved in your case, so that they should make the decision.

Mr. Harutoshi Uchida, Team Leader of JICA Study Team replied: This study once completed will be entirely in the hands of the Albanian Counterparts therefore it's up to them to see this project implemented.

Mr. Stavri Ristani, Vice Minister, Ministry of Public Works, Transport and Telecommunications made the following comments: I also would like to receive in your final report beside the Feasibility Study, concrete projects so we can proceed in finding donors or budgets and implementing projects.

6. Closing Speech from Mr. Donard Strazimiri, DPUK Director

Mr. Donard Strazimiri thanked stakeholders for their participation and their valuable contribution to the meeting.

Annex I: Participant List
Annex II: Comments from the Participants and Answers to the Comments

Annex I

PARTICIPIANT LIST

4th November, 2005

No.	NAME	TITLE	ORGANISATION
1.	Mr. STAVRI RISTANI	Vice Minister	MPP&TT
2.	Mr. SADEDIN LIMANI	Director of Project Monitoring and Coordination Department	MPP&TT
3.	Mr. DONARD STRAZIMIRI	Director	DPUK
4.	Mr. PETRIT KOÇI	Director, PIU	DPUK, PIU
5.	Mr. ARJAN SKËNDERI	Director of Public Relations Directorate	DPUK
6.	Mr. NAMIK SIMIXHIU	Director, PIU	DPUK, PIU
7.	Mr. SADIK ZOTAJ	Specialist	DPUK, PIU
8.	Mr. HAMIT TEME	Director, PCU	DPUK
9.	Mr. BASHKIM LUSHAJ	Head of Reagional Environmental Agency	Ministry of Environment
10.	Mr. KORAB LITA	Vice Deputy	Kamuza Municipality
11.	Mr. BILBIL HOXHA	Deputy	Commune of Kashar
12.	Mr. SINAN EGRO	Regional Council Secretary	Tirana Regional Council
13.	Ms. MERITA MULLAJ	UKT Vice / Director	UKT
14.	Mr. ISMAIL BESHI	UKK Head / Engineer	UK KAMËZ
15.	Ms. ENKELEJDA PATOZI	Lecturer	Polytechnic University of Tirana
16.	Mr. MITAT SANXHAKU	Director	Institute of Hydrometeorology
17.	Mr.MIRJAM NDINI	Specialist	Institute of Hydrometeorology
18.	Mr. GENC MYFTIU	Director	SEDA (NGO)
19.	Ms.GENTA HOXHA	Project Coordinator	REC (REC)
20.	Mr. IOANNIS SPYROPOULOS	Programme Manager	E.C. Delegation, Tirana
21.	Mr.PHILIP D. GIANTRIS	PRESIDENT	Water Supply and Sewerage Association of Albania
22.	Ms. RECO DIDA	Technical Coordinator	JICA
23.	Mr. HARUTOSHI UCHIDA	Team Leader	JICA Study Team
24,	Mr. KUNJI AKINAGA	Sewage Collection Facilities planning and Design	JICA Study Team
25.	Mr. TETSUJI KAWAMURA	Water Quality and Water Pollution Analysis	JICA Study Team
26.	Ms. SHOUKO YAMADA	Environmental and Social Consideration	JICA Study Team

Annex II

Comments from the Participants and Answers to the Comments

- Enkelejda PATOZI
  Lecturer at Polytechnic University of Tirana;
  GTZ Project coordinator/ support to the commercialization of water supply & sewerage sector in Albania;
  Programme Manager / Water & Sewerage Association in Albania

  Part II/4 Talking on laws and standards which should be taken in consideration, it was not included the catalogue (list) of the polluters and liquids, approved by the Government in 2005.

  Please be careful when translating the word "wastewater" as it should be translated "urban polluted water" and in no way "black waters".

  Good Luck.

  <Answer>
  We will check the catalogue (list) of the polluters and liquids, and consider including them.

- Bilbil HOXHA
  Deputy Mayor, Kashar Commune

  It would be interesting to know the informing method, by who and when?

  How much will be taken onto consideration reactions from the community affected directly or indirectly by the project?

  <Answer>
  The other stakeholder meeting will be informed by invitation letter from DPUK before 1-2 weeks ahead the meeting.
  Identifying the stakeholder should be done by DPUK in collaboration with JICA Study Team. The community / people who live in the area where facilities such as pumping station, sewage treatment plant will be constructed should be the stakeholders. They will be identified and the representative of them will be added to the stakeholders as the study is going on.

- Bashkim LUSHAJ
  Head of the Regional Environmental Agency, REA

Meeting's material should have been consulted first to the Albanian side before it was presented as we have given a considerable assistance during this time.
2004 April Guidelines should be revised.
Categorization and other study activities should be based on the Albanian Environmental Legislation.
Government's Decisions should be included on the above matters.
The English translation should be adapted to environmental terminology and the same in Albanian.

<Answer>
From next meetings, we will involve the counterpart from the preparation stage. In the Q&A Session, JICA Study Team already told that the JICA Guidelines are the minimal requirements and it does not mean that Albanian's laws and standards are ignored. The study will be conducted according to the Albania laws and EU standards.

- Namik Simixhiu
  PIU Director, DPUK

The presentation of the November the 4-th, 2005 takes in consideration and finds out the main directions of the project development.

The presented study has taken onto consideration our request in relation with the extension of the target year (calculated until 2022)

Remarks

The study should be based in the EU standards. Has it been decided the position (site) for the Treatment plant? Why the IEE selects the category B?

My opinion is that we have to work hard and doing our best to shorten the time schedules in order to get closer to this investment which is vital for the city of Tirana.

<Answer>
The target year of the plan is set at year 2022.

The Study also considers the EU standards.
In the presentation, we explained that the Albanian Law requires a Profound (Advanced) Process of Environmental Impact Assessment for the project which includes plants of treatment of urban liquid discharges with a higher capacity of more than 150,000 equivalent inhabitants, but the JICA guidelines requires further EIA studies even if the projects are categorised as "B", when it is judged a further study is needed.

The JICA Preparatory Study Team, dispatched February 2005, conducted a preliminary IEE and judged the projects to be proposed in the Study should be categorized as "B" because any serious adverse impacts would not be caused by the projects. In the course of Study, the projects will be identified more in detail, for example, the construction sites of major sewerage facilities such as trunk sewers, pumping stations, and sewage treatment facilities will be clarified in the formulation of Master Plan (M/P). The category of the proposed projects will be reviewed based on the IEE Study considering the site conditions. The results of IEE will be informed in the 2nd and 3rd stakeholder meeting.

- Ioannis SPIROPOULOS
  Programme manager, E.C. Delegation, Tirana

  Keep up the good work
  Congratulations
  Waiting to be invited to similar future events among stakeholders, etc.

  <Answer>
  Thank you for your comments.

- Philip GIANTRIS
  Executive Director, Water supply and wastewater association of Albania

  Will the final report make specific recommendations on Institutional structure to deliver wastewater services? Will such structure be required before investments can go forward?
  Will the final report calculate the cost/impact of wastewater transmission, treatment and disposal will have on existing tariffs?

  <Answer>
  The answers of both questions are Yes.

  1. The Study Report will describe the findings, discussions with Albanian and donors, and proposals and recommendations on institutional mattes for establishing one united form of organizations to implement and operate the projects.

  2. Issues of tariff are also very important components of the Study to prepare a viable and sustainable sewerage projects. Therefore, necessary recommendations including tariff reform will be presented as a conclusion of the Study.

Minutes of the 2nd Stakeholder Meeting

The Development Plan for Sewerage System and
Sewage Treatment Plant for
Greater Tirana

DPUK (General Directorate of Water Supply and Sewerage), MoPW&TT (Ministry of Public Works, Transport and Telecommunications) in collaboration with JICA Study Team, organized the 2nd Stakeholder Meeting on 7th December, 2005 at Tirana International Hotel.

The meeting started at 10.00 with the introduction speech of Mr. Fahri Maho, General Director, DPUK.

1. The opening speech by Mr. Fahri Maho, General Director of DPUK

Mr. Fahri Maho thanked the participants for attending the meeting. He said that this meeting follows the previous meeting aiming to present and discuss the subjects step by step. In such meetings, all the stakeholders are invited not only to participate passively, but are asked to take active part in it. Stakeholders are free to ask questions and in the same time to express their views or opinions. He also said that these meetings are very important, because we have to take the right decisions at each stage.

2. Presentation Part I, by Mr. Petrit Koci, PIU Director, DPUK

Mr. Koci introduced once again the JICA Study for the Development Plan for Sewerage System and Sewage Treatment Plant for Greater Tirana in Republic of Albania. He emphasized the great importance of the study and the need to cooperate with the Japanese team. He outlined also the pollution and sewage situation in Tirana.

He explained the study components, the study schedule and the study area. Then he gave some explanations on public consultation. He considered the public consultation very important. He mentioned that after each phase will take place a stakeholder meeting. All present stakeholders have to take into consideration / be aware that the chance to have a say is now.

3. Presentation Part 2, by Mr. Harutoshi Uchida, Team Leader, JICA Study Team

Mr. Uchida explained the proposed sewerage system. He showed the future pollution with / without the project and emphasized the necessity of the project. He outlined the basic planning concept: early improvement, reduction of initial cost and consideration of available land area. Mr. Uchida presented the two possible alternatives, which means selecting between centralized and decentralized system, taking into consideration energy saving option, easy operation &

maintenance and lower construction cost. He argued the JICA Study team recommendation through many tables, diagrams and explanations on treatment methods and technologies. He especially stressed the role of the financial factor.

4. Presentation Part 3, by Ms. Shouko Yamada, Environmental and Social Consideration Expert, JICA Study Team

Ms. Yamada in Part III explained that benefits and impacts are inevitable for any project. The purposes of the IEE have been to review environmental and social conditions in the Project area and to evaluate the significance of the impacts. She explained the categories studied, project benefits, evaluation method, and evaluation made based on the above method. Also the major impacts were analyzed more in detail for their advantages and disadvantages. In the presentation it was described why the EIA study is required (predict and assess impacts and preparation of the mitigation measures and monitoring plans). She informed the audience that the environmental items identified as B and C in the IEE Study will be studied further and the scope of EIA study will be presented in the 3rd Stakeholder Meeting.

5. Questions & Answers

(1) Mr. Guido Casanova, Senior Advisor of PIU, Development Cooperation Office, Italian Embassy

He asked if the Sewerage System is a combined or separated system. On this issue he pointed two questions:

a) Your proposal is to separate the rain water from the waste water. Please explain how will this be done? I am concerned on how will fit the old sewage system into this.
b) About the Primary Treatment Plant, what type of sedimentation will be used, you do not give any explanation. What happens with the sludge? Will it be treated in the site, or will it be send to another place or to the final treatment plant and if so how?

Mr. Uchida replied:

He answered that the existing sewer system is a combined one and is located in a limited area. The existing system discharges collected sewage directly into the river, the sewage will be intercepted at some points collecting it to the treatment site so that the existing system will be used. Kamza Municipality, Berxulle and Paskuqan Commune, and a part of Kashar Commune have no sewerage system, so there are two possible solutions: a) combined system, b) completely separate system. Since the combined system is used in Tirana, and Kashar and Kamza, the combined system for other area will be applied to the sewerage planned area.

If there is not enough land space to apply sludge drying bed method, than sludge will be treated using mechanical dewatering method.

(2) Mr. Korab Lita, Deputy Mayer of Kamza

In the alternative A, 49 ha land surface will be required for one treatment plant, and in alternative B, more than 100 ha land surface will be required. In alternative A, the STP in Berxulle will treat sewage from the study area including Kamza and Berxulle, and in Alternative B, STP in Berxulle will treat sewage only from Kamza and Paskuqan. The land surface for STP should be decreased.

Mr. Uchida replied:

The reason that more than 100 ha are required for the alternative B is to apply the sludge drying bed for STP in Kashar. The sludge drying bed is much cheaper than the mechanical dewatering methods, and it reduces the operation & maintenance cost. The land problems are always serious in any country. The alternative can be changed, but the cost of operation and maintenance will be very expensive and the burden to cover this cost will be upon the people living in Greater Tirana. Thus the land acquisition for the treatment plant will be strongly recommended.

(3) Mr.Faik Fejzo, Mayer of Kashar Commune

He expressed his opinion in favor of Alternative A. STP will only take up 63 ha, but round 300 ha of surrounding area will be affected. The area you proposed for STP in Kashar is beautiful for its landscape and is suitable for business activities such as sports centers, recreation & leisure facilities etc. This location is very close to Tirana City, and inhabitants of Tirana will ask for such leisure facilities. That is why this place is kept for future plans. There are a lot of offers from investors to use and develop the land, including national and foreign investors. Using it for sewage treatment plant will be a huge mistake.

Mr.Uchida replied:

The actual environmental situation needs an urgent intervention and this question should be solved by the Albanian side. If the sewerage system including the STP is constructed close to Tirana, there are many advantages, and JICA Study Team recommends Alternative B. But it is up to Albanian side to take the decision.

Mr. Faik Fejzo, proposes further field investigation as the best option.

Mr. Bashkim Lusha, Head of the Regional Environmental Agency asked the following question to Mr. Faik Fejzo, Mayor of Kashar Commune

Since the mayor of Kashar Commune is against sewerage system plan, has this land been included for business/leisure activity in any urban planning study?

Mr. Faik Fejzo, Mayor of Kashar answered that there is no planning for the mentioned area, but we expected that in the near future Tirana City will need such area.

(4) Mr. Fahri Maho, General Director, DPUK

Mr. Fahri Maho said that he understands that this is a very fragile matter. He agrees with Mr. Fejzo to visit the proposed site again. He upraised the arguments brought up by Mr. Fejza, but the importance of the project should be considered carefully, and without solving the sewage problem, the future development that Mr. Fejzo is talking about is impossible.

He also told that he received a letter from Berxulle Commune disagreeing for the STP site in Berxull. He explained that people of Berxulle would like to ask the following questions:

a) How far from the plant you can smell the offensive odor?
b) The impact on the underground waters in the area
c) The STP site is it going to devaluate the land value (price) in the surrounding area, decreasing in this way investor's interests.

Mr.Uchida replied:

- Talking about the odor, it depends on its character, season, terrain and the wind (how strong, direction etc). We will do our best to mitigate its impact. After we take a definitive decision about the STP location, we will investigate deeper and will plan buffer zones as for example planting trees as necessary measures.
- On underground water there will be no problem. Liquid separated from sludge is treated in the treatment process.
- On land issue. The land value will be increased in the sewered area. This will happen as a consequence of better environment and living conditions in the area. We know that the land we anticipate for the STP is used for farming, but from contacts with the farmers in these communes we have learned that the above mentioned land is not fully used for agricultural purposes.
- If we use the mechanical system, it's true that we need less land space, but the O&M cost becomes very high.
- In the next step we will discuss more in details the mitigating measures.

(5) Mr. Maksut Mulleti, Member of Kashar Commune Counsel

Mr. Mulleti said that he is one of the residents in Kashar and he is against the Alternative B, because is too close to the Kombinat neighbourhood (around 2 km away from its centre). He expressed his opinion that there are two or three landowners who agree to sell their land, but in a surface of 65 ha it is not possible to have complete consensus. He also said that not long ago, people in Kashar refused the plan for Solid Waste Treatment Plant and that a different location for the STP of smaller size should be looked for.

Mr. Uchida replied:

In the Alternative B 102 ha is needed. This is for applying an appropriate technology. We have not explained yet the project cost and O & M cost. When you learn the costs you will be surprised, may be astonished. The operation & maintenance cost should be covered by user charges and the local government. The land cost is only about 10% of the total project cost. It is better be realistic today and give the necessary land space, because as you understand there is an urgent need of the STP. Depending on your decision, you will pay less tomorrow. The construction cost is very high. We understand very well your difficult actual situation and at the present, but please think about the future generations. This is our message.

(6) Mr. Sadedin Limani, Director of Project Monitoring and Coordination Department, Mo PW&TT

Mr. Limani said that this is the first time that we have a serious study on this matter. The sewerage system in Tirana is a necessity and an obligation. We have to be aware of this. The situation we are in is a very emergent one. We need to get to a solution. And the solution requires land and we should not take our personal interest into account first. Lana and Tirana rivers are polluted. We have to cooperate, there is no other choice.

Every project has a cost to pay. We have to be aware that this cost has to be paid by us. And more complicated is the system, higher will be the operation & maintenance cost.

He also thanked the JICA Study Team for its very good presentation. In the future I suggest that in addition to the slides to have much more written comments and information. Also some of the slides need to be explained in more detail.

(7) Mr. Arjan Skenderi, Director of Public Relations – DPUK

Mr. Skenderi said that we are awaiting the interim report, due in January 2006. You promised to give us 20 copies of this document in English. My question is: Will we have a meeting after we get this report and discuss on such matters? Till now we got a lot of information but not any concrete report.

Mr. Uchida replied:

The report will present the results of all these discussions. But for the moment and first we should solve which Alternative we have to follow in the future, Alternative A or Alternative B. For the moment we don't know which direction to continue our study. We have to decide now to choose the one or the other. After we take a decision for A or B we will give it to you very soon.

(8) Mrs. Razie Naipi, Engineer, Berxulle Counsel

Mrs. R. Naipi said that she fully understand that the sewerage system is a big problem for the Tirana City and it is a very important matter to solve. The experts and specialist shall decide. In my opinion in both cases the locations are not suitable. This is also the Berxulle Commune opinion. Kashari-Berxulle and Vora areas are among the best areas. In the presentation was not mentioned the importance of this zone. In my opinion the sewage treatment has to be transferred to the sea direction.

Mr. Uchida replied:

The best way to solve the problem is the sewerage system. The Berxull area is included in the project because the STP is planned in the Berxull commune; the sewage generated in Berxull can be transferred and treated easily.

6. Closing Remarks, by Mr. Fahri Maho, General Director of DPUK

Thank you for your comments. This shows that everybody attending this meeting is quite interested on the matter. But in the same time some of us are looking more after the interest of the community they represent. My suggestion is not to think only for today, but more for the coming generations and their future. We know very well that such systems and treatment plants exist also in Rome, Paris, Tokyo and many areas in the world. This means that we have to take into account these examples if we want to solve our problems. All of us have to be conscious and think not only for ourselves but also to serve to the Capital, in the same way the Capital serves us. We should look forward to a brighter future.

The Japanese Government and the Japanese taxpayers are giving us this study as a gift, they are helping us to have a better life. Let's support them.

Annex I: Participants List

Annex II: Comments from the Participants and Answers to the Comments

Annex I

Participants' List

7th December 2005

No.	NAME	TITLE	ORGANISATION
1.	Mr. FAHRI MAHO	General Director	DPUK, MoPW&TT
2.	Mr. SADEDIN LIMANI	Director of Project Monitoring and Coordination Department	MoPW & TT
3.	Mr. PETRIT KOCI	PIU Director	PIU, DPUK, MoPW&TT
4.	Mr. ARJAN SKENDERI	Director of Public Relations Directorate	DPUK, MoPW&TT
5.	Mr. NAMIK SIMIXHIU	PIU Director	PIU, DPUK, MoPW&TT
6.	Mr. SADIK ZOTAJ	Specialist	PIU, DPUK, MoPW&TT
7.	Mr.BUJAR REME	Vice General Director	DPUK, MoPW&TT
8.	Mr. BASHKIM LUSHAJ	Chairman	REA, Ministry of Environment
9.	Mr. KORAB LITA	Vice Mayor	Kamza Municipality
10.	Mr. MYNYR SHEHU	Head of Counsel	Kamza Counsel
11.	Mr. ISLAM SHEHU	Member of Counsel	Kamza Counsel
12.	Mr. SINAN EGRO	Regional Council Secretary	Tirana Regional Counsel
13.	Mr. FAIK FEJZO	Mayor	Kashar Commune
14.	Mr. MAKSUT MULLETI	Representative of the Village	Kashar Commune Counsel
15.	Mr. ILIR PALUSHI	Responsible for the Registry Office	Paskuqan Commune
16.	Mrs. RAZIE NAIPI	Engineer	Berxull Counsel
17.	Mr. XHELAL MZIU	UKT Director	UKT
18.	Mr. PJERIN PALUCA	UKK Director	UK Kamez
19.	Mrs. ENKELEJDA PATOZI	Professor	Polytechnic University of Tirana
20.	Mrs. MANJOLA BANJA	Vice Director	Institute Of Hydrometeorology
21.	Mr. MURAT YILDIRAN	Senior Banker, Head of Office	EBRD
22.	Mr. GUIDO CASANOVA	Senior Adviser, Development Cooperation Office	Italian Embassy
23.	Mrs. REKO DIDA	Technical Coordinator	JICA
24.	Mr. ALKEN MYFTIU	Project Manager	REC
25.	Mr. HARUTOSHI UCHIDA	Team Leader	JICA Study Team
26.	Mr. YASUO MOTO	Sewage Treatment Facilities Design and Cost Estimate	JICA Study Team
27.	Mr. KUNJI AKINAGA	Sewage Collection Facilities Planning and Design	JICA Study Team
28.	Mr. TETSUJI KAWAMURA	Water Quality and Pollution Analysis	JICA Study Team
29.	Miss SHOKO YAMADA	Environmental and Social Consideration	JICA Study Team

Annex II

Comments from the Participants and Answer to the Comments

- **Mrs. Razie Naipi – Representative of the Berxulle Commune**

My opinion is as follows:

1. For collaboration with the community and taking their opinion.
2. The perspective for the Greater Tirana is the discharge of waste waters into the sea direction.
3. In the first stage to construct Primary Treatment Plant and to extend the sewerage planning area.
4. In details we can discuss further with the JICA study team.

<Answer>

Thank you for your comments and we would like to have more discussion with you and we need your help to communicate with Berxulle people to understand that the proposed sewage treatment plant (STP) will provide benefits to your people and will not give any serious environmental impacts to you living environment. We also hope you understand that our study on environmental and social matters will take necessary measures to avoid any serious environmental impacts to your people through our public consultation process.

Your proposal of discharging sewage into the sea cannot solve the water pollution problems. We think the sewage generated within Greater Tirana should be treated before discharging the sewage to nearby receiving water bodies, i.e. the rivers.

- **Mr. Alken Myftiu – Program Manager, Regional Environmental Center, Albania**

Apparently better public information is required.

We suggest detailed information on the benefits and problems, population for the project area of the treatment plant.

The right of information is sanctioned by law.

This will help in the selection of the best area and also reaching community consensus.

<Answer>

Thank you for your comment and we will continuously inform you upon important information. We need your understanding to make our proposed sewerage plan to become your plan. We also welcome any good concrete advises to have better

public information. Collaboration work among central government, local governments and people are inevitable for better public information on the infrastructure projects.

- **Mr. Bashkim Lushaj – Chairman, Regional Environmental Agency**

  Excellent

  <Answer>

  Thank you for your comment and continuously we will provide information on the sewerage plan for Greater Tirana to facilitate public understanding to the proposed sewerage system and environmental and social considerations.

- **Mr. Guido Casanova – Advisor PIU, Italian Embassy, Development Cooperation Office.**

  In my point of view, it is necessary to complete investigation on the sewerage run off during sunny and rainy season. This to individualize the quantity and quality variations (during one year) of the system.

  <Answer>

  We know that Italian cooperation contributes to the improvement of water supply system in the Tirana Municipality; reduction of uncounted-for-water and introduction of water metering together with management improvements. The water distributed will become sewage after human and economic activities; the metered water volume will help to estimate more precise wastewater generation volume. A wastewater generation studies, with water quality of individual households, shops, restaurants, hotels and offices, will help for the future sewerage planning. Regarding storm-water, we analyzed the existing rainfall data and reviewed your study on the existing sewer network, our proposal is based on these study results.
  In our study, a survey on the water quality of sewage and rivers are being conducted, the results will be presented together with existing data and information.

Mr. Sinan Egro – Secretary for the Regional Counsel

1. In this study the alternative A and B should take into consideration:
   a) The general study (8^{th} corridor)
   b) Environmental pollution
   c) The development perspective for Greater Tirana.

2. Thus I propose for an overview for all the studies.
3. Other place can be found for this project as the Mayor of Kashar proposed.

<Answer>

JICA Study Team overviewed all related study / project conducted in Greater Tirana to prepare Master Plan. The proposed location for the treatment plant in Kashar will be investigated further with the close coordination with Kashar Commune. The Albanian counterpart has not suggested the reference on 8-th Corridor Project and we do not know the project to have impact on Greater Tirana sewage system. We will try to get the information.

- **Mr. Maksut Mulleti – Member of Kashar Council**

1. I agree with the sewage treatment plant in principal
   - My main concern is the environmental pollution which comes with large land surface required for the sewage treatment plant in Kashar.
   - Air pollution in a larger area around the plant will be confronted by huge objections from the local people as well as land owners around it.

<Answer>

In the proposed sewerage system, will not cause any air pollution. But offensive odor may be occurred in some cases, therefore in the EIA study, adverse impacts of offensive odor and others are assessed in their impact levels and the possibility and frequency in occurrence based on the law norms and standards, and necessary mitigation measures shall be proposed and taken to avoid the serious impact to residents.

- **Mr. Faik Fejzo – Mayor of Kashar Commune**

1. I think alternative A should be implemented

   Because: Land area required in the alternative B is very close to Tirana and should be used for other purposes.
2. I would like to collaborate to find another site location in Kashar.

<Answer>

Thank you for your opinion. We expect your collaboration regarding the proposed land for the treatment plant.

- **Mr. Korab Lita – Vice Mayor of Kamza, Kamza Municipality**

1. I'm in favor of Alternative B
2. Please consider any other possibility to reduce surface used for the plant without jeopardizing the project.

<Answer>

Thank you for your understanding of our recommended Alternative B, and we will try to minimize the land area required for the treatment plant. But please note that the available land space becomes smaller, requires mechanical and electrical sewage treatment system, then becomes less sustainable sewerage system. We will introduce you more sustainable sewerage system and take necessary mitigation measures to avoid or protect any adverse environmental impacts to the local residents.

- **Mr. Xhelal Mziu – UKT General Director**

1. Less land area to be used (Alternative A)
2. Alternative A is in favor due to social issues:
   - land property issue
   - Offensive odor issue
3. Please give other options with small land surface regardless of their costs; therefore cost evaluation should not be a primary issue.

<Answer>

Thank you for your comments. JICA Study Team will try to minimize the land area required for this project. But we understand that not only environmental issues but also the sustainability of the sewerage system is very important issue for better water environmental management.

- **Mr. Fahri Maho – General Director, DPUK**

1. I am in favor of the alternative A (centralized system)

<Answer>

Thank you for your opinion.

- **Mrs. Manjola Banja – Vice Director, Institute of Hydrometeorology**

- How much is evaluated the hydrological impact in the Lana and Tirana River waters?

- What is going to be the content of the discharged waters from the Sewage Treatment Plant

<Answer>

The present direct discharge of sewage into the nearby water courses or rivers will be solved by the improvement of existing sewers and the development of new sewers by the proposed sewerage plans, and the water quality of the rivers will be drastically improved generally with proper solid wastes management and industrial wastewater management. Collected sewage by the sewers will be treated at a sewage treatment plan (STP) at primary level about 40% removal in terms of BOD and at secondary treatment level 90% removal. The treated sewage still contains some pollutants thus needs surface water to dilute till acceptable level.

In our Study, considering the water flows in the receiving water bodies, in case of Greater Tirana, Lana River and Tirana River, the water quality with project and without project is being examined based on the available data and information of the rivers and our water quality survey results. The results will be presented in the next Stakeholder Meeting.

Minutes of the 3rd Stakeholder Meeting

The Development Plan for Sewerage System and
Sewage Treatment Plant for
Greater Tirana

DPUK (General Directorate of Water Supply and Sewerage), MoPW&TT (Ministry of Public Works, Transport and Telecommunications) in collaboration with JICA Study Team, organized the 3rd Stakeholder Meeting on 24th February, 2006 at Tirana International Hotel.

The meeting started at 10.00 with the introduction speech from Mr. Fahri Maho, General Director, DPUK.

1. The opening speech by Mr. Fahri Maho, General Director of DPUK

Mr. Fahri Maho thanked JICA Study Team for their work on this study. He also thanked the participants for attending the Stakeholder Meeting. He asked full participation and collaboration in this meeting. Mr. Maho, invited Mr. Koçi to give a brief presentation on the progress of the study.

2. Presentation Part 1, by Mr. Petrit Koçi, PIU Director, DPUK

Mr. Koçi gave a short presentation on the Development Plan for Sewerage System and Sewage Treatment Plant for Greater Tirana in Republic of Albania. He explained the progress of the study at this point in time.
Mr. Koçi invited Mr. Uchida to continue with his presentation on the Proposed Sewerage System.

3. Presentation Part 2, by Mr. Harutoshi Uchida, Team Leader, JICA Study Team

Mr. Uchida explained the proposed sewerage system. He gave preliminary study results of water quality in Tirana and Lana River. He outlined the basic planning concepts: early improvement, reduction of initial cost and consideration of available land area. Mr. Uchida emphasized that three elements were taken onto consideration when selecting the best alternative: energy saving option, easy operation & maintenance and lower construction cost. He also explained in general the Implementation Schedule and Sewerage Service Plan.
Mr. Uchida also spoke on the non-facility structures of the Sewerage System Structure such as capacity building, financial sustainability and O&M followed by recommendations on the institutional matters and future of UKT. Results of the economical evaluation were given together with economical viability of the project.
At the end of his presentation he invited Ms. Shouko Yamada to present her part on the Priority Project and the Scope of EIA Study.

4. Presentation Part 3, by Ms. Shouko Yamada, Environmental and Social Consideration Expert, JICA Study Team

Ms. Yamada stressed the need to obtain an "Environmental Declaration" and profound EIA Study for the project. She explained in detail what are the requirement of the "Environmental Declaration" and the content and the scope of the EIA Report.
Ms. Yamada informed that the EIA Study will be conducted by the DPUK.
Finally she informed the last Stakeholder Meeting will take place on July 2006.

5. Questions & Answers

(1) Mr. Mitat Sanxhaku, Director, IHM.

Mr. Sanxhaku appraised the today's presentation as very accurate one. He expressed his opinion on this project as being of crucial importance especially with the population growth rate in the Greater Tirana.

His comments consisted on the accuracy of water quality data. He said that the Institute possesses serial environmental, hydrometeorology and climatic data on water and air quality. BOD data have to be adjusted. It will be very useful to arrange a meeting between the Institute of Hydrometeorology and JICA Study Team.

He offered his full support and collaboration to the JICA Study Team in order to improve the accuracy of data on water and air quality.

Mr. Uchida replied:

Thank you for your invitation and commitment to help our Study. Your participation in this Study will be very helpful to us especially in our preliminary design of the sewage treatment facilities. Our projection of water quality and is based mainly on river flow data which date back in 1997 as unfortunately we did not have access to more up to date information. We have also carried out surveys measuring river cross sections and river depth of Lana and Tirana River. We think that the Institute has more accurate data and we welcome your participation in this Study.

(2) Mr. Ioannis Spyropoulos, Programme Manager, CE Delegation

To my understanding from the previous Stakeholder Meeting you have based your study on future projections on grab samples is that so and what I understood today is that the Institute has data for the past 15 years for two rivers. What other parameters have been measured besides BOD and what is the frequency of sampling?

Mr. Uchida replied:

The water quality data taken in our study is not used for future water quality projections but used as a reference to check the magnitude of the existing water quality data.

(3) Ms. Emirjeta Adhami, Head of Environmental Department, Water Quality Sector, Institute of Hydrometeorology

Within the framework of implementation of water monitoring program for Tirana and Lana Rivers and fulfilling the requirements of this monitoring plan a monitoring network has been established with samples taken with a frequency of every two month. Regarding water quality we have data going back in 1969. On pollution parameters we have data for the last 15 years. Some of the pollution parameters are BOD, COD, phosphate, ammonium etc.

Mr. Uchida replied:

Our projections are based on the data of previous study results and our own spot survey on flow measurements of Lana and Tirana River. We have contacted IHM a few times but unfortunately its data have not been provided and used. Regarding the flow rate we have used 1997 data because as I said more up to date information was not given to us. Results from our survey are not used for projections; they are used only for reference.

(4) Mr. Arben Luzati, Head of Environmental Health Department, Institute of Public Health

From the today's presentation was shown that the third objective of the Project was to reduce risk of disease and enhance human health. During the presentation was not elaborated further how do you proceed in achieving this objective and can you alter your terms of reference in order to

include health impact assessments and measures in achieving the above objective? Our Institute can be engaged in such assessment.

Mr. Uchida replied:
In the today's presentation the economical evaluation takes onto account the reduction of water born diseases as an Economical Benefit. Data is based on World Bank Report. At the F/S health impact assessment will be studied further and you are welcome to help in this study with your information and data.

(5) Mr. Philip D. Giantris, Executive Director of Water Supply and Sewerage Association of Albania
When you explained Treatment Process in slide 25 you said that the project will meet EU standards of BOD 25mg/L and SS 35 mg/L. In slide 43 you use the expression Primary Treatment Facility Tirana – Kashar. Does that mean that the facilities will be built in stages, first primary treatment facilities and second secondary treatment facilities?

Mr. Uchida replied:
Yes, EU standards of BOD 25mg/L and SS 35 mg/L will be achieved after the second stage of treatment has been introduced. This means that in the first stage primary sedimentation facilities will be constructed together with some disinfection processes. At this stage will be constructed also sludge treatment facilities. That is why for selected priority projects pollution load will be reduced only at 30 %. In order to comply with EU standards we need time, and this can be achieved after the second stage – secondary treatment has been introduced.

(6) Mr. Piro Trebicka, Representative of the KfW Office in Tirana.
In the presentation was shown that part of stormwater will go to the STP. If yes what is the percentage of stormwater conveyed at STP?

Mr. Uchida replied:
At present conditions sewers receive not only sewage but part of stormwater as well. In the future, in our proposal in dry weather condition, only sewage it is conveyed to STP. In case of wet weather conditions (rain) a mixture of sewage and stormwater within the full capacity of trunk sewer will be conveyed to the STP. To do this we will construct some intercepting structures in order to receive the first flash of stormwater effectively.
During the F/S further study will be conducted on this issue.

(7) Mr. Philip D. Giantris, Executive Director of Water Supply and Sewerage Association of Albania
As we know Kashar is the place where STP will be located. Finding the location for the STP is as much as a social and political problem as it is a technical one and Kashar will be loosing around 50ha of development land. Will Kashar be compensated now and into the future as a hosting place for the STP as I do believe they are entitled to such compensation?

Mr. Uchida replied:
Appropriate site selection is the biggest issue to prepare appropriate sewerage plan. Today is the 3rd Stakeholder Meeting and at the last Stakeholder Meeting we gave the alternatives for the STP. We believe that having only one STP in Berxull is not an appropriate option because costs for conveying sewage at Berxull STP are very high. In order to implement the project we need further steps to obtain the site. I can tell you that financially and economically this is one of the

best solutions. I would like to ask you to help as to get the STP site. Without the understanding of Kashar Commune we could not prepare the plan.

(8) Mr. Halit Kamberi, PIU Director, DPUK
Am disappointed of not being invited to the previous Stakeholder Meetings, especially at the time when the decision on the best alternative was taken. Since I believe that the most appropriate alternative has been selected as the priority project I would like to know when this investment will recover its cost.

Mr. Uchida replied:
We are revising the costs for the proposed sewerage facilities to consider applicable construction methods to reduce the project costs. In Feasibility Study we will inform you the financial sustainability including cost recovery considerations.

(9) Mr. Ioannis Spyropoulos, Programme Manager, CE Delegation
To my understanding the EIRR for both alternatives are very close as well as it is the B/C ratio. And to go along with what Mr. D. Giantris said is that you need to compensate the Kashar Commune as they will suffer the most consequences of the STP located in their area. The greater area will be deteriorated in terms of quality of life. Have you already had the consensus of residents of Kashar? What happens to this study if results from EIA indicate serious negative impacts to the environment especially as the project will be implemented in two stages? Are you considering doing EIA for the other alternatives?

Mr. Uchida replied:
Regarding cost of land and compensation we have estimated some commercial rates which are quite high compare to the compensating costs of the land.
Secondly, regarding the site of the STP we need several steps to persuade residents of the Kashar Commune for the STP.
After our study terminates in July 2006 these kinds of activities will be carried out by the DPUK and/or Executing Agency such as the Joint Power Authority as proposed. That is why full involvement of DPUK is required followed by the involvement of an Executing Agency together with the Municipalities and Communes in the Study Area. Local government has to play a very important role in this process in order to persuade the people in favor of this project.

Closing Remarks, by Mr. H. Uchida, Team Leader, JICA Study Team

Thank you very much for your questions and comments. I am particularly pleased with today's participation rate. We have one Stakeholder Meeting left and we should be more open to the public for this kind of discussion and play an important role towards public consultation.

Thank you for your contribution to this meeting.

Annex I: Participants List
Annex II: Comments from the Participants and Answers to the Comments

Annex I: Participants List

No	Organization	Name	Title
1	MoPW & TT	Mr. Sadedin Limani	Director of Project Monitoring and Coordination Department
2	DPUK	Mr. Fafri Maho	DPUK Director
3	DPUK, PIU	Mr. Petrit Koçi	PIU Director
4	DPUK	Mr. Arjan Skënderi	Director of Public Relations Directorate
5	DPUK, PIU	Mr. Namik Simixhiu	PIU Director
6	DPUK, PIU	Mr. Halit Kamberi	PIU Director
7	DPUK, PIU	Mr. Sadik Zotaj	Specialist
8	DPUK, PCU	Mr. Bujar Reme	Vice / Director of DPUK
9	DPUK	Mr. Hamit Teme	Director of Technical Directorate
10	DPUK	Mr. Donard Strazimiri	PHARE Program, Former Director of DPUK
11	DPUK	Mr. Ardjan Radovica	PIU Islamic
12	Tirana Municipality	Ms. Albana Dhimitri	Deputy Mayor
13	Kamza Municipality	Mr. Korab Lita	Deputy Mayor
14	Tirana Regional Council	Mr. Sinan Egro	Regional Council Secretary
15	Kashar Commune	Mr. Faik Fejzo	Mayor
16	Kashar Commune Counsel	Mr. Shaban Sorra	Member of the Council
17	Kashar Commune Counsel	Mr. Maksut Mulleti	Representative of the Village
18	Paskuqan Commune	Mr. Ilir Palushi	Responsible for the Registry Office
19	Paskuqan Counsel	Mr. Zaim Kupa	Head of Counsel
20	Berxulle Counsel	Ms. Razie Naipi	Engineer
21	UKT	Mr. Petrit Balla	Sewerage Sector Engineer
22	UK Kamëz	Mr. Ismail Beshi	UKK Head/Engineer
23	UK Kamëz	Mr. Pjerin Paluca	UKK Director
24	Polytechnic University of Elbasan	Mr. Alfred Lako	Professor
25	Public Health Institute	Ms. Luljeta Leno	Head of Laboratory
26	Public Health Institute	Mr. Arben Luzati	Head of the Environmental Health Department
27	Public Health Institute	Ms. Zaira Poga	Sanitary Engineer, Water Sector
28	Public Health Institute	Ms. Valbona Bare	Head of the Drinking Water Sector

29	Institute of Hydrometeorology	Mr. Mitat Sanxhaku	Director
30	Institute of Hydrometeorology	Ms. Manjola Banja	Vice Director
31	Institute of Hydrometeorology	Ms. Miriam Ndini	Hydrologist
32	Institute of Hydrometeorology	Ms. Emirjeta Adhami	Chief of Environmetal Department
33	Institute of Hydrometeorology	Mr. Vangjel Mustaqi	Chief of Meterological Department
34	Geological Institute	Ms. Nazmie Puca	Geological Assistant
35	Italian Embassy	Mr. Guido Casanova	Senior Adviser, Development Cooperation Office
36	KfW	Mr. Piro Trebicka	Representative of the KfW Office Tirana
37	EBRD	Mr. Donald Mishaxhiu	
38	JICA	Ms. Reko Dida	Technical Coordinator
39	E.C. Delegation	Mr. Ioannis Spyropoulos	Programme Manager
40	Water Supply and Sewerage Association of Albania	Mr. Philip D. Giantris	Executive Director
41	Water Supply and Sewerage Association of Albania	Ms. Elizabeta Poci	Programme Assistant
42	NGO: ECAT Tirana	Ms. Marjeta Mima	Executive Director
43	Tirana Acque	Mr.Govanni Pollio	President
44	Shekulli	Mr. Erion Ajazi	Social Reporter
45	News 24		
46	JICA Study Team	Mr. Harutoshi Uchida	Team Leader
47	JICA Study Team	Mr. Kunji Akinaga	Team Member, Sewage Collection Facilities Planning and Design
48	JICA Study Team	Ms. Shoko Yamada	Team Member, Environmental and Social Considerations
49	JICA Study Team	Mr. Kujtim Jaho	Team Staff, Interpreter, Engineer Assistant
50	JICA Study Team	Ms. Lidia Hasani	Team Staff, Interpreter
51	JICA Study Team	Ms. Nereida Limani	Team Staff, Secretary

Annex II

Comments from the Participants and Answer to the Comments

- **Mr. Ardian Radovicka, Engineer of PIU IDB, DPUK**

Are there some ideas on sludge evacuation resulting from the sewage treatment plant? Is it possible to use it and where is planed to be transported or lodged?

<Answer>
The sludge from the sewage treatment plant can be used such as the fertile for agriculture, or the material of the cement. If there are no needs, the sludge will be disposed in the final dumping site.

- **Mr. Philip Giantris, Executive Director, Water Supply and Sewerage Association of Albania**

1. It is recommended that the presentation be structured to allow for questions at key milestones of the meeting: such as every 20 minutes
2. Clear presentation of project decisions and economics were not made in presentation
3. More attention should be given to the institutional (and discussion) issues, which are significant. It seems that slides 33 & 34 are confusing and contradictory.
4. Slide 10 defines tolerable BOD of 10 mg/l in the stream yet slide 30 says R5 (Lana) will be 19 mg/l and R6 (Tirana) will be 19 mg/l

<Answer>
Thank you for your suggestions and comments. We agree the economic / financial and institutional issues are important and the detail will be made in 4th stakeholder meeting by the expert. The BOD 10mg/l is one of the standard used to explain how the present river is polluted to the public. It is true that with this project implemented, the river water of down stream is relatively high as 19 mg/l, but the situation will be further better than the present.

- **DPUK**

1. You should explain that BOD in fact is BOD5
2. You should explain to the people of Institute of Hydrometeorology and Public Health Institution that their proposed contributions have to be without payment.
3. Implementation process is taking a very long time. You should give to the Albanian part the possibility to begin from now the negotiations to find the found sources
4. What is the chemical content of the sludge and for what we can reuse it?

<Answer>
Thank you for your comments. We believe Albanian Government already have contacted with foreign donors regarding fund for implementation.
The sludge does not include any harmful content and can be used as fertile of land or material of cement.

- **Ms. Zaira Poga, Sanitary Engineer, Public Health Institute**

Water quality survey (monitoring) should be done for a longer time (to include the four seasons of the year)
Knowing that hospital waste discharges and industrial wastewater are more dangerous than householder wastewater, so that wastewater from hospital and industry should be put specific restrictions or the obligation for a pre-treatment for such kinds of wastewaters before to be discharged.

<Answer>
The survey of water quality was done in twice on November and December 05 and we know it's not enough, so we try to collect the existing data of water quality from related institutions to complement our data. Regarding wastewater from hospital and industries, some wastewater from small industries or hospitals, which connects to sewer, is included in our study, but not big ones, and we will make recommendation for control and monitoring.

- **Mr. Mitat Sanxhaku, Director, Institute of Hydrometeorology**

1. The study is of a great value
2. The project presentation is enough clear and precise
3. For more specifications we propose a meeting between IHM specialists and JICA Study Team in our Institute offices, with the aim to:
   - more precise definition of the TOR, especially for the study part about the climate conditions, hydrologic matters and other quality indicators and parameters of pollution level of Tirana and Lana rivers.
   - To discuss on the modalities of the active participation of the IHM as a JICA Team partner in the study work.

<Answer>
Thank you for your comments. We would like to have meeting and hope to have cooperation from your institute and specialists.

- **Ms. Nazmie Puca, Engineer of Hydrogeology, Albanian service of Geology**

- Lana and Tirana rivers wastewaters represent a pollution danger for groundwater. Their treatment will be a positive factor for the water reserves in Tirana area.
- It was not so clear how deep in the ground the treatment facilities will be put. Is it foreseen the evacuation or the extraction of the clay bed (argil stratum) or not, which normally plays a protective role for the groundwater?
- Is there any pollution risk for the groundwater in the area Tirane- Mezez- Berxull- Rinas?

<Answer>
The depth of trunk sewers is around 10 meters at deepest, and we try to get the information of groundwater to make sure of no influence on groundwater. Your cooperation is necessary for this. The topographic survey and soil investigation will be conducted soon. The pollution risk for the groundwater is not predicted so far, and in the Feasibility Study, the detail study will be conducted.

- **Ms. Valbona Bara, Sanitary and Water Sector, Public Health Institute**

In my opinion the selection of the presented system is a good choice and in the right place, but before its implementation we should have in consideration:

- Industrial and from the hospitals wastewaters
- Health and environmental education of the population

<Answer>
Thank you for your comments. The wastewater from industries and hospitals are not included in this study in principle, but some small industries and hospitals which connect to sewer line are included. We will make recommendation for control or monitoring system for that. Health and environmental education of the public will be under progress and we expect your cooperation.

➢ **Ms. Luljeta Leno, Water Microbiologist, Chief of Laboratory, Public Health Institute**

Having in consideration the possibility of the treatment plant construction, my comments are:
- This treatment plant must be constructed farther from Tirana City, possibly in an area less populated.
- What is the environment impact on such items like smelling, insects etc for the local population, is there any assessment?
- The treatment plant will be located near the Rinas Airport, which I think will have an impact on the country image.
- The water quality should be monitored and assessed possibly in a longer term
- Along the Lana and Tirana Rivers there are a lot of individual householders and small industries wastewater discharges. What is your idea or the solution for that case?
- The health impact assessment could be done by the Public Health Institute

<Answer>
The Initial Environmental Examination (IEE) was conducted and preliminary assessment of impact was presented in the 2nd stakeholder meeting. In the Feasibility Study, already explained to you, the detail examination, Environmental Impact Assessment (EIA) Study will be conducted to assess what kind of impacts will be caused by the project and the significance of impacts, and mitigation measures, monitoring programs will be established. Your cooperation on the health impact assessment will be appreciated.

➢ **Mr. Halit Kamberi, PIU Director, DPUK**

- Should have close relations with institutions for data collection
- Should be considered at least two options, not only for the technology used, but even for the treatment plant location
- Two proposed locations seem to be a bit far from each other.

<Answer>
Thank you for your comments. We already considered several options including technology, treatment plant location and cost and presented in the last (2nd) stakeholder meeting.

➢ **Mr. Shaban Sorra, Member of the Kashar Commune Counsel**

These meetings are generally useful. I am convinced that the meetings will continue also in the future.

Our big concern or our big trouble still remains the project impact on the environment. Even the project is very important; this does not mean to damage the population interest living in the area where the treatment plant will be constructed.

<Answer>
Thank you for your comments. As you said, the serious damage on the environment is not allowed for any important project. In the Feasibility Study, the Environmental Impact Assessment (EIA) Study will be conducted to assess the impact and to identify the mitigation measures as well as monitoring program.

- **Mr. Maksut Mulleti, Member of Kashar Commune Counsel**

I feel myself troubled by the project impact on the environment
The big space needed for the construction of the treatment plant will cause serious problems to the population living around this plant.
Having in consideration the target year 2022 which is a long time, may be in the future we have to consider that some new technologies with a lower cost will be developed.
My skepticism consists only on environment pollution

<Answer>
Thank you for your comments. We understand your concern on environment and find the best way to avoid or mitigate the impacts on environment in the Feasibility Study stage.

- **Mr. Hamit Tekiu, Engineer, DPUK**

The alternative with two treatment plants is the best.
My opinion is that the study should become deeper and concentrated on the actual sewage-net system. Today the system is a mixed one and needs an urgent intervention.

<Answer>
Thank you for your comments and opinion. JICA Study Team investigated the actual sewage network and found difficulty to identify all. In our proposal, the mixed sewerage system is adopted to utilize the present system.

- **Mr. Arjan Skenderi, DPUK**

From today's presentation is now very clear that the EIA will be done by the DPUK and the MoPW&TT, while the JICA Team will support in making this study.
In what consists more concretely your support?
Is it included also the financial support?

<Answer>
What is the responsibility of DPUK and what JICA Study Team can support should be discussed. JICA Study Team will fully cooperate to conduct EIA Study.

Minutes of the 4th Stakeholder Meeting

The Development Plan for Sewerage System and
Sewage Treatment Plant for
Greater Tirana

DPUK (General Directorate of Water Supply and Sewerage), MoPW&TT (Ministry of Public Works, Transport and Telecommunications) in collaboration with JICA Study Team, organized the 4th Stakeholder Meeting on 12th of July 2006 at Tirana International Hotel.

The meeting started at 10.00 with the introduction speech from Mr. Fahri Maho, General Director, DPUK.

1. The opening speech by Mr. Fahri Maho, General Director of DPUK

Mr. Fahri Maho thanked JICA Study Team for their work and briefly explained what has been done so far by the team. Mr. Maho invited Mr. Harutoshi Uchida, Team Leader to begin with his part of the presentation.

2. Presentation by Mr. Harutoshi Uchida, Team Leader, JICA Study Team

Mr. Uchida explained briefly the program of this Stakeholder Meeting, the introduction of the Study such as target year and study area. He explained briefly about the Master Plan for 2022 and Priority Project for 2014. He informed the process of selecting Priority Project and sewage treatment technique as well. He also explained the institutional reform needed for the realization of this project and briefed the participants on the financial and economical analyses conducted for the Priority Project. Mr. Uchida also spoke on the non-facility components of the Sewerage System Study such as capacity building, financial sustainability and O&M followed by recommendations on the institutional matters and the future of UKT. Results of the economical evaluation were given together with the economical viability of the project.

3. Presentation by Ms. Shouko Yamada, Environmental and Social Consideration Expert, JICA Study Team

Ms. Yamada started her presentation in explaining that every project has it benefits and costs/impacts. This project has therefore its benefits such as improvement of the water quality of Lana River, improvement of sanitary conditions, reducing risk of diseases etc. Some of the impacts caused by the project are such as income loss, traffic/ public facilities, pollution such as noise, air pollution and traffic disturbance during construction, noise & odor, sludge disposal and water contamination of receiving body. Ms. Yamada informed on the possible mitigation measures planned in order to mitigate these impacts. Risk analysis and Contingency Plan have also been prepared for the project. Ms. Yamada emphasized that the environmental monitoring is necessary to evaluate the effectiveness of mitigation measures and monitoring should be conducted in close relationship with Institute of Hydrometeorology, Institute of Public Heath and other institutions.

4. Questions & Answers

(1) Mr. Bujar Reme, Former V/Director of DPUK

Mr. Reme, thanked the organizers for the invitation. His first question concerned sludge disposal. He asked on the size of the area to be occupied by disposed sludge.
His second question concerned the nearby stream and its present conditions. He asked whether this project will rehabilitate the stream mainly on solid waste removal and construction of proper river banks.

Mr. Nakao, Sewage Treatment Facilities Planning, replied:

In general, it is estimated the generation of approximately 27 tons of sludge per day (wet basis) or around 8,000 m^3 (tons) of sludge per year. That will require a land space of 8,000 m^2, and the same amount of space will be required for the second year. Sludge generation is a continuous process and the figure of 27 tons/per day is just a preliminary estimation.
Solid waste removal is not the subject of our study. Thus we can only recommend improvements of sanitary conditions of this stream.

Mr. Fahri Maho, General Director of DPUK

Rehabilitation of the stream shouldn't be a problem as it has a short length, around 1 km and will not require a huge investment.

(2) Mr. Sadedin Limani, Director of Project Monitoring, MoPW&TT

(a) From what has been explained in the previous Stakeholder Meetings, the proposed sewerage system is a separate system. In cases of severe wet weather weirs will help to separate rainwater and discharge it into rivers. For which sewerage system have sewer diameters been designed for - separate system capacity or combined system capacity?
(b) The existing network has problems in terms of blockage and malfunctions resulting in floods during the wet season. What measures will be taken for such kind of problems?
(c) According to the Albanian legislation industrial wastewater should be treated before its release into the sewerage network. Please recommend better law enforcement on this issue.

Mr. Uchida replied:
The existing sewerage network is a combined one. It does not have the capacity for the entire sewage flow and rainwater flow. New branch sewers will be constructed based on the separate system principle. New trunk sewers will be constructed in order to cope with the estimated sewage flow rate.

Our study will introduce improvements in the existing network especially for those sewers which do not discharge into interceptors. Manholes will be constructed in order to convey some rainwater to the rivers in case of high amount of rainfall. A Technical Exchange Seminar will be held in August and will explain in more detail what structure improvements will be introduced.

On the industrial wastewater discharge an inventory industry survey has been conducted and will be finalized soon. In principal it is the Ministry of Environment responsibility for monitoring industrial wastewater discharges. JICA Study Team will make some recommendations in the final draft report regarding the industrial wastewater management.

(3) Mr. Arben Luzati, Head of Environmental Health Department, Institute of Public Health

What is the quality of the generated sludge, will it require further treatment if its quality is not appropriate for landfill disposal?

Mr. Uchida replied:

In our study, the generated sludge is of acceptable quality. Sludge digestion process secures stabilization and good quality of sludge. Also the proposed sewerage system does not accepted the industrial wastewater thus ideally, the sludge does not include the heavy metal and it is recommended for reuse as material for cement and soil fertilizer.

(4) Mr. Piro Trebicka, Representative of the KfW Office in Tirana.

First of all thank you for your invitation and above all thank you for the matters and issues you are addressing. During this presentation financial matters were also briefly discussed. Is it possible to know the tariff for the sewerage charge in terms of absolute value and the necessary finance for this project?

Mr. Ishizuka, Economical and Financial Analysis, JICA Study Team replied:

For the financial evaluation of the project it is important to identify the target revenue for this project. For this purpose Affordability of People to Pay is first established based on recommendations from international financial institutions such as World Bank. The affordability is set at 1% of the Monthly Household Income (MHI). At the moment, based on the Public Awareness Survey made from JICA Study Team, charge level for the sewerage service is very low compare to the international standards, at 0.23% of MHI. So proposal will be made to raise the tariff to be 1 % of the MHI for 2022. Detailed tariff structure will be discussed at the next Steering Committee Meeting taking into account life line consumption volumes and other social issues to be taken into consideration.

5. Closing Remarks, by Mr. Fahri Maho, General Director of DPUK

The meeting concluded with Mr. Maho's closing remarks. He thanked the participants for their questions and comments. He informed that the second Technical Exchange Seminar will be held in August and hoped for better participation in this event.

Annex I: Participants List
Annex II: Comments from the Participants and Answers to the Comments

Annex I:

Participants' List

No	Organization	Name	Title
1	MoPW & TT	Mr. Sadedin Limani	Director of Project Monitoring and Coordination Department
2	DPUK	Mr. Fafri Maho	DPUK Director
3	DPUK	Mr. Bujar Reme	DPUK V/Director
4	DPUK	Mr. Klodian Dhima	Director of Public Relations Directorate
5	DPUK, PIU	Mr. Namik Simixhiu	PIU Director
6	DPUK	Ms. Aferdita Mamaj	Geological Engineer
7	DPUK	Mr. Halit Karburi	Director, PIU
8	Ministry of Finance	Ms. Mimoza Loli	Chairman of external Debt
9	Tirana Municipality	Ms. Albana Dhimitri	Deputy Mayor of Tirana
10	Kamza Municipality	Mr. Korab Lita	Deputy Mayor of Kamza
11	Tirana Regional Council	Mr. Sinan Egro	Regional Council Secretary
12	Kashar Commune	Mr. Faik Fejzo	Mayor
13	Kashar Commune Counsel	Mr. Maksut Mulleti	Mayor of the Small Village
14	Kashar Commune Council	Mr. Bujar Fucirra	Adviser Kashar Comune
15	UKT	Mr. Xhelal Mziu	UKT Director
16	UKT	Mr. Ferdinand Petrela	Technical Director
17	UKT	Ms. Merita Mullaj	Head of Sewerage Section
18	UKT	Ms. Vjollca Xhuli	Hydraulic and Hydrological Analysis and drainage
19	UKT	Ms. Jolanda Gjeci	Economical and Financial Analysis
20	UK Kamez	Mr.Pjerin Paluca	UKK Director
21	Public Health Institute	Mr. Arben Luzati	Head of the Environmental Health Department
22	Albania Geological Survey	Ms. Nazmie Puca	Hydrological engeenier
23	JICA	Ms. Reko Dida	Technical Coordinator
24	Honorory Council of Japan	Mr. Bujar Dida	Honorary Counsul-General
25	KfW	Mr. Piro Trebicka	Representative, KFW Office Tirana
26	KfW	Ms. Siola Cirovoku	Office Manager
27	SEDA	Mr. Nazmi Shushteri	Consultant
28	JICA Study Team	Mr. Harutoshi Uchida	Team Leader
29	JICA Study Team	Mr. Masakazu Nakao	Sewage Treatment Facilities Planning
30	JICA Study Team	Mr. Kunji Akinaga	Sewage Collection Facilities Planning and Design
31	JICA Study Team	Mr. Yasuo Moto	Sewage Treatment Facilities design and Cost
32	JICA Study Team	Ms. Shoko Yamada	Environmental and Social Considerations
33	JICA Study Team	Mr. Jack Bannister	Organizational and Institutional Strenghening, and O&M Plan
34	JICA Study Team	Mr. Yoshiaki Ishizuka	Economic and Financial Analysis
35	JICA Study Team	Mr. Isamu Sato	Study Coordination
36	JICA Study Team	Mr. Kujtim Jaho	Team Staff, Interpreter, Engineer Assistant
37	JICA Study Team	Ms. Lidia Hasani	Team Staff, Interpreter
38	JICA Study Team	Ms. Daniela Bashllari	Team Staff, Secretary

Annex II

Comments from the Participants and Answers to the Comments

- Mrs. Nazmie Puca, Hydrological Engineer, Albania Geological Survey
  1. The two projected Sewerage Treatment Plants will be constructed in Kashar and Bërxull areas, which are part of the underground water basin. Personally I feel concerned. The STPs will be constructed on the terrene or you need to excavate the protective covering bed of the ground waters.
  2. We would like to recommend the hydro geologic and geologic enginering area survey during the construction phase of the STP (in the site and the main trunk)

  <Answer>
  JICA Study Team got the information from your institute and confirm that the no aquifer runs through the Kashar STP site. But at the Berxulle STP site, the aquifer runs underground. So when the Berxulle STP will be constructed, the detail area survey should be conducted.

- Mr. Faik Fejza, Mayor of Kashar Commune
  OK. Agree.

- Mr. Bujar Fucirra, Adviser of Kashar Commune
  I agree.

- Mr. Arben Luzati, Head of the Environmental Health Department, Institute of Public Health
  1. The projected BOD (24 mg/l) level is almost the same with the EU standard (25 mg/l) ??
  2. What is the prognostic estimation of the heavy metal pollution (toxic pollution)?
  3. My suggestion is to have a separate sludge land field for the treatment and to dispose the sludge in the same land field with the urban solid waste.

  <Answer>
  1. Yes. The BOD value of EU Standards is 25 mg/l and the effluent will meet this standards.
  2. No heavy metal pollution happens by this proposed project because the industrial wastewater is not accepted to the sewerage system.
  3. We propose to dispose the sludge to existing landfill site together with the domestic solid waste or to the new landfill site proposed by the World Bank.

- Mr. Bujar Reme, Vice Director of DPUK
  1. My suggestion is to add also some other reasons for the existing high pollution level: the lack of a complete sewerage system and the very high level of his amortization
  2. A rehabilitation plan is needed, because some parts of the existing system are heavy damaged
  3. The training and capacity building campaign is necessary to be undertaken in close cooperation with local government and local community.

  <Answer>
  1. Thank you for your comments on the reason of the present pollution situation. This is also considered in the design.

2. Some rehabilitation plan is included for the existing sewers.
3. We propose the public awareness campaign and capacity building the new organization for water supply and sewerage. These will be conducted in close cooperation with local government and community.

- Mr. Namik Simixhiu, PIU Director of DPUK

Generally the study looks complete

During the implementation phase we should have in consideration:

- The project to be accompanied with a more financial detailed analyzes, especially on the tariff system
- I think not to have in consideration the Sharra land field, which actually does not have the appropriate capacity. Based on the study done, it can be used maximum only seven years after the investment is completed
- I am suggesting the sludge disposal and treatment to be done near the STP

<Answer>

- Now proposal of tariff system is under preparation and during the detailed design stage, these matters should be studied further.
- At present, Sharra is the only active landfill site in Tirana. But the World Bank proposed the new landfill site and if it will be constructed, the sludge will be disposed of at the new site.
- The sludge will be treated in the STP. The disposal of the sludge requires large area, as nearly 8,000 tons of sludge will be generated per year, so it is better option to dispose of the sludge at the landfill site.

- Ms. Merita Mullaj, Head of Tirana Sewerage System Branch, UKT
  - In the Lana River cut across Tirana inhabitable area, there are discharged seven small streams which collect urban wastewaters coming from the houses located by the two sides of the river (the small rivers are named Takakut, Gogave, Palpoçit, Selita 1, Selita 2 and Selita 3). The absolute effluent value of these streams is smaller than the effluent of the main interceptors situated by the two sides of Lana River. In such a case how will be eliminated the pollution from Lana River?
  - The sewerage treatment will be done after the Tirana urban area. Is Lana River continuing to be polluted, even after the treatment, in its ending part?

<Answer>

Thank you for your opinions.

- The branch sewers will be installed to collect the sewage from the households, thus no sewage will be discharged into the small streams.
- The sewage collection and treatment will surely improve the Lana River in the center of Tirana City. But the area covered by the priority project is only Lana River basin so the down stream of Lana River will be still pollute, but the degree of pollution will be decreased. By 2022, whole the Greater Tirana area will be covered by the sewerage system, so the water quality of both Lana and Tirana Rivers will be improved.

Annex 2 : Certificate of Environment Expert

REPUBLIKA E SHQIPERISE
MINISTRIA E MJEDISIT, PYJEVE DHE ADMINISTRIMIT TE UJERAVE

Nr. 342 Prot. Tiranë, më 22.12. 2005

Vendimi Nr.11, Nr.175 Regj.

ÇERTIFIKATË

Në mbështetje të Vendimit të Këshillit të Ministrave Nr.268, datë 24.04.2003 "Për çertifikimin e specialistëve, për vlerësimin e ndikimit në mjedis dhe auditimin mjedisor":

Bujar DIDA

Çertifikohet për hartimin e raporteve të vlerësimit të ndikimit në mjedis, për të kryer auditimin mjedisor, për hartimin e ekspertizave për probleme mjedisore dhe thirrjen si ekspert për të vlerësuar një raport të vlerësimit të ndikimit në mjedis ose rezultatet e një auditimi.

Lufter XHUVELI

MINISTER

REPUBLIKA E SHQIPERISE MINISTRIA E MJEDISIT PYJEVE DHE ADMINISTRIMIT TE UJERAVE TIRANE

REPUBLIKA E SHQIPERISE
GJYKATA E RRETHIT GJYQESOR TIRANE
NR 3429 VENDIMI

VENDIM

PER RREGJISTRIMIN SI PERSON FIZIK

Sot me date 16/11/2005(dymije e pese) une _____ gjyqtare e Gjykates se Rrethit Gjyqesor Tirane mora ne shqyrtim kerkesen e paraqitur nga z. Bujar Dida i datelindjes 07.05.1961,banues ne rrugen "Mihal Duri" nr 32 Tirane, ne lidhje me rregjistrimin e tij si Person Fizik prane kesaj Gjykate me objekt: Konsulent dhe specialist per vlersimin e ndikimit ne mjedis dhe auditim mjedisor.

KONSTATOVA

Kerkuesi Bujar Dida ka paraqitur kerkesen per tu rregjistruar si Person Fizik prane zyres se rregjistrit tregtar te Gjykates se Rrethit Gjyqesor Tirane per te ushtruar aktivitet privat me objekt veprimtarie: Konsulent dhe specialist per vlersimin e ndikimit ne mjedis dhe auditim mjedisor.
Kerkesa eshte e bazuar ne ligj dhe si e tille duhet pranuar.

PER KETO ARSYE

Si gjyqtare e vetme,ne zbatim te ligjit nr.7512 dt.10.08.1991

VENDOSA

Pranimin e kerkeses.

Rregjistrimin si Person Fizik te kerkuesit Bujar Dida me objekt veprimtarie: Konsulent dhe specialist per vlersimin e ndikimit ne mjedis dhe auditim mjedisor.
Kunder ketij vendimi lejohet ankim ne Gjykaten e Apelit Tirane.

GJYQTARE