1. INTRODUCTION AND BACKGROUND

Nearly each village in Jenin-Tubas area has small dumpsite. According to the Environmental Assessment study, which covers the study area, there are more than 80 dumpsites in Jenin-Tubas area. Among these dumpsites there are about 20 considered as real dumpsites (each dumpsite receives more than one ton of waste per day). These dumpsites are spread allover Jenin governorate (from As-Sileh Al-Harthiyeh in the North to Tubas in the South).

The construction of Zahrat Finjan sanitary landfill in the area will lead to abandon and closure of all other open dumping sites in the Governorate. The major dumping sites in the area are to be either closed permanently in the short-term period such as As-Sileh Al-Harthiyeh (Wadi Al Yamus) dumpsite. Or they are to be rehabilitated in the short term and closed at the time Zahrat Finjan sanitary landfill is in operation such as Jenin and Al-Yamoun dumpsites.

Public awareness for rehabilitation and closure of the dumpsites is one of the key elements of the public awareness strategy. Two main projects were suggested for the public awareness in the National Environmental Action Plan (NEAP) of the solid waste. One is the raising public awareness regarding waste collection, lettering and recycling in Palestine. The other project is public awareness and information regarding solid waste issues (prevention of open air burning, composting of organic waste, closure and rehabilitation of the dumping sites, and construction of landfills).

The Jenin Joint Services Council (JJSC) is starting the technical part of the closure and rehabilitation of the dumpsites in Jenin-Tubas area. Two dumpsites were closed in the area, As-Sileh Al-Harthiyeh and Qabatyah dumpsites. Ongoing process now is concentrating on developing and rehabilitating four dumpsites, Jenin, Al-Asa'sah (Al-Mahata), Al-Yamoun (Khirbet Suruj), and Arrabeh (An-Naqab). Moreover JJSC will rehabilitate and develop the following dumpsites in the near future, Tubas (Ainoun), Deir Abu De'if (Wadi A'la) and Kufr Ra'i.

Raising the public awareness towards the issue of rehabilitation and closure of the dumpsites, open burning, and littering are major components of the project. The launching and execution of such public awareness program will ensure the success of the above-mentioned task of the project.

The project component consists of designing community based public awareness programs regarding closure and rehabilitation of the dumpsites in West Bank and Gaza and implementing those programs in Jenin-Tubas area at this stage. This program can be implemented in several sub areas in the Jenin-Tubas area, including Jenin city, As-Sileh Al-Harthiyeh and Al-Yamoun, Tubas, North East Jenin villages, Arrabeh, Silet Al-Thaher, Maythaloon, Ajja, and Qabatyah.

The overall responsibility for the investment of the project will lie with the Environmental Quality Authority (EQA) (Previously called Ministry of Environmental Affairs (MEnA)). However, the project implementation will be coordinated through EQA and the JJSC though the Project Implementation Unit (PIU).

2. THE PROJECT AREA

The following information about the project area were extracted from the Waste management Service Improvement Project for the Jenin Governorate, Environmental Assessment Report, 2000, and the Environmental Profile of the West Bank, Volume 7, Jenin District (Arij, 1996)

2.1 Physical Environment

- **Location**

The project area will encompass 107 villages of the 118 communities in the Jenin Governorate including Tubas district. 11 remote villages in Tubas area with total population of about 3000 (less than 1.5% of the total Governorate population and generating less than 1% of the total solid waste quantity) are not included.

- **Climate**

- **Rainfall**

The climate of the Jenin district, is characterized by hot and dry summers and moderate and rainy winters. The mean annual rainfall across the district is of 528 mm with a maximum average of 778 mm recorded in the western part of the district. The maximum documented annual rainfall between 1980 and1995 was 1417.4 mm in 1991/2 at Arrabeh (168.25E, 200.50N), which is of 2.5 km north of Zahrat Al –Finjan site.

The rainy season begins in October, with a approximately 80% of the rainfall occurring between November and February. Rain is rare between June and September.

- **Temperature**

Between December and March the average daily temperature is 13.4°C with a minimum temperature of 7.8°C and a maximum of 19°C. The average daily temperature from June to August is 33.6°C with an average minimum of 19.3°C.

- **Evaporation**

Evaporation is particularly high in summer, due to the rise in temperature, intensive sunshine, higher mean wind speed and relatively low humidity.

- **Wind and Relative Humidity**

In Jenin district, the prevailing wind comes from the southwest and northwest, being more northerly and stronger in the summer months. Mean wind speeds are lowest in October (5.4 km/hr), and strongest in July (9.7km/hr).

The “Khamaseen” winds from the Arabian desert area may occur during the period from April to June and cause rise in temperatures and decrease in humidity.

Humidity ranges from approximately 39% during the “Khamaseen” period to an average of around 84% in winter.

- **Geology and Soils**

The northern West Bank consists of down wrapped Cretaceous strata subsequently filled with Eocene chalks and other limestones. The upper Cretaceous rocks fringe the roughly triangular Eocene (or North-Eastern) synclinal Basin with the city of Nablus in the south as the apex and Jenin in the north as the base. The North-Eastern basin is bisected by faults associated with the Dead Sea-Jordan Rift

The dominant soil in Jenin District is the Brown Rendzinas and Pale Rendzinas associations. However, bedrock outcrops over large parts of he project area. Cultivation of, *inter alia,* olive trees and field crops (wheat, barely, chick pea, etc.) is associated with Brown Rendzinas and Pale Rendzinas soil types.

- **Hydrogeology**

There are three main aquifer units in the Jenin District:

Lower aquifer consists of the Upper and Lower Beit Kahil Formations of Cenomanian age characterized by dolomitic limestones and limestones, occasionally interbedded with chalk, chalky limestone, thin marls and clayey limestone intercalations which can restrict vertical ground flow. This aquifer unit is a major regional source of groundwater through the West Bank.

Upper aquifer consists of the Hebron Bethlehem, and Jerusalem Formations. This aquifer is generally unconfined and not saturated throughout its vertical extent. The upper aquifer is separated from the lower aquifer by the Yatta Formation to various extents.

Eocene aquifer covers approximately one third of the northern West Bank and characterized by chalks, limestones and cherts of the Jenin Sub-Series. This unit supports groundwater abstraction and spring flow.

- **Groundwater Quality**

Based on available data, the quality of the groundwater abstracted from the Upper and Lower aquifers are in general within the recommended Palestinian drinking water standards (PS41).

In some areas, there is a rise in the concentration of Nitrate and Chloride concentrations.

2.2 Socio-economic environment

- **Population**

There are approximately 252,000 inhabitants in the Jenin Governorate ((the Jenin District and Tubas District). Jenin city estimated population is about 30,000. It is the largest town north of Nablus and plays a dominant role in the northern region of the West Bank.

The maximum size of the other towns and villages in the Jenin and Tubas districts is only half that of Jenin. The remaining communities live in a hilly and scenic setting.

- **Economy**

The Jenin district is a major agricultural producer in the West bank, particularly the fertile Ibn A'mer plains around Jenin city where irrigated agriculture predominates. Almost all kinds of Mediterranean fruits and vegetables are produced there, including tomatoes, cucumbers, eggplants, and melons. Rain-fed crops include olives, almonds, figs and cereals, especially wheat and barley. Agriculture is estimated to contribute to about 25% of the GDP of the West Bank Governorates.

Other than the agricultural sector Palestinians are employed in industrial activities, including stone and marble quarrying and cutting and small-scale manufacturing and processing industries, such as the manufacturing of tins and agricultural ploughs. The charcoal industry is famous in Jenin district mainly in Yaa'bad town and the surrounding villages such as Daher alÁbed, Bartaá ash Sharqiya, Zabda, Nazlat ash Sheik Zeid, Tura al Gharbiya and Tura ash Sharqiya. This industry has a negative environmental health impacts on that area and the nearby areas (Al-Khatib, 2002). In addition, employment in Israel is a major source of income for many Palestinians.

2.3 Built Environment

- **Services and Sanitation**

Urban areas enjoy relatively good access and internal road networks, water and electric power supply, waste management services and telephone services. The rural areas suffer from lack of adequate infrastructure, particularly in water, sewage, waste management and continuous electric supply.

- **Water supply**

The Jenin district depends on groundwater as the main source of water. Less than 50% of the population have access to piped water. The rest of the population are supplied with water from local wells and springs or through rain water harvesting for use during summer. If the rain water cisterns are depleted during the summer months, it is necessary to purchase water to refill them.

- **Electricity Services**

About 75% of the communities have some form of electric power supply, either via the Israeli grid or by generators. Usually local generators are working several hours per day.

- **Transportation services**

75% of the communities have paved access roads, although the quality of these roads is commonly very poor. Nearly all communities have access to one form or another of public transportation.

- **Sewage Disposal Facilities**

All communities in the area, except the city of Jenin, depend on cesspits for sewage collection and disposal. When these pits become full hey are evacuated by pump tankers and the contents are disposed of in valleys and open areas. In Jenin city, wastewater collection and treatment facilities are available but the collection network is only covering about 80% of the city and the efficiency of the treatment plant is low.

- **Education and health**

The educational network is moderately well developed and there are 122 schools and two universities throughout the Jenin District. In general, the health sector has low service quality, low doctor to population ratio, and shortage of modern equipment. In the northern region of the West Bank, the ratio is 0.5 beds for every 1000 persons. Since the Palestinian Authority has been established, health *per se,* especially mother and child care and primary health care, are improving. There are 168 health care centers and clinics, and two small hospitals in Jenin district. A modern hospital is under construction now in Jenin city.

2.4 Current Waste Management Practices

In the rural areas, waste is still managed in the traditional method where wastes are disposed in randomly distributed dumpsites. But in Jenin city, it has loomed up as a major problem. At present, municipal waste is temporarily dumped in an open space. This use of open space and roadsides for waste disposal is the common practice in Jenin city due to the siege implied on the city by the Israeli occupation (solid wastes are disposed in an area inside the boundaries of the wastewater treatment plant between the houses, see photos). Previously, JJSC has temporarily allocated a certain area as a dumping site where all kinds of waste are disposed. Hazardous medical waste is also dumped in it. This site is now closed.

Regarding the management of hazardous waste there is so far no authority level policies to check and monitor its disposal. The sources of hazardous waste in the country are medical waste from healthcare institutions, obsolete pesticides, batteries and effluents and by-products of industries.

At present, and in most communities, hazardous wastes are dumped along with municipal waste causing a major public health risk. Few of the individual healthcare institutions have set treatment facilities such as waste incinerators and autoclaves to treat their wastes. However, the establishment of such treatment systems is not common in the Palestinian Territories.

2.5 Zahrat Finjan Sanitary Landfill

A master plan for solid waste disposal sites was developed in 1987 based on closing all existing random dumpsites and construction of engineering sanitary landfill sites for each district in the West Bank. The Zahrat Finjan was one of those landfill sites.

The site is located 11 km southwest of Jenin and is accessed via a spur from the main Nablus-Jenin motorway. The site covers a total area of approximately 12 ha. The site will be designed and operated to high engineering standards for the disposal of domestic and non-hazardous

commercial / industrial wastes collected within the study area. The site will comprise the following components:

- Access road, administration buildings and security fencing
- Weighbridge and reception area
- Waste deposition area, which will be prepared and lined prior to filling
- Leachate collection and treatment system
- Passive gas venting system
- Vehicle wheel washing facility
- Recycling pilot plant

The site will be developed progressively and operated in accordance with general sanitary landfilling techniques used internationally. Following waste deposition, the site will be restored and subject to ongoing aftercare.

It is intended that the site ultimately becomes a regional waste disposal facility for the wider Jenin / Tubas area and will receive wastes from all the surrounding villages. In order to spread the investment costs and to avoid the need to develop a new site within a short time frame, the site will have an operational lifetime of 20 years.

3. OBJECTIVES OF THE PROJECT

Closing of the random solid waste dumpsites and transferring the generated municipal wastes to a regional landfill site needs the support of the public and the cooperation of the decision makers in the local authorities. Raising the awareness of the concerned parties of the importance of this subject is a key issue to ensure the success of the process.

The overall goal of the public awareness component is raising the public awareness towards the closure and rehabilitation of the widely spread dumping sites and to prevent littering and open burning. In addition, to inform the public of Zahrat Finjan sanitary landfill site and the environmentally sound practices of solid waste dumping and disposal.

Thus**,** the main objectives anticipated to be fulfilled through implementing the public awareness component of SWEMP are:

- ㄱ Increase the community awareness regarding the following issues:
  - -0 Hazards of waste burning and random dumping;
  - -ㄱ Health risks associated with improper waste management;
  - -ㄴ Dangers facing water resources due to improper waste management;
  - -ㄷ Waste minimization, composting, and recycling. Waste minimization polices can conserve resources and help to protect health and the environment. While recycling can have a positive impact by diverting waste materials from treatment or dispose. Composting is considered as an example of recycling (WHO, 1996).
  - -ㄹ Hazardous waste risks and the necessity of proper management; and

- ㅁ Landscape and keeping the environment inside and outside closed dumpsites clean.

- ㄴ Raise the awareness of the decision-makers in local authorities towards the importance of efficient waste management and to keep the closed dumpsites clean. Moreover, to increase their awareness regarding the use of the rehabilitated dumpsites, where they are expected to transfer the solid waste of their communities;

- ㄷ Raise the capacity and competence of EQA as well as other related authorities and local government in the field of the design and implementation of public awareness campaigns and programs as part of the local packaging system; and

- ㄹ Support the fulfillment of the overall goal through enhancing the feelings of responsibility and willingness to participate in maintaining a beautiful and clean Palestine.

- ㅁ Design of public awareness campaign. This objective will be satisfied through monitoring and evaluation of different activities that will be implemented in this project.

The awareness programs are planned to cover the areas in Jenin/Tubas area including Jenin city, As-Sileh Al-Harthiyeh and Al-Yamoun, Tubas, North-East Jenin villages, Arrabeh, Silet Al-Thaher, Maythaloon, Ajja, and Qabatyah.

4. TARGETED GROUPS

In order to achieve the above-mentioned objectives, all community groups as well as those who are engaged in solid waste management process should be addressed in the awareness program. More attention should be directed to the following groups: Children, housewives, decision-makers, industrial sector, solid waste workers, police, social, and religious leaders (Imams, Shakes and Priests). The selection of these groups as the main targeted groups is justified by the following reasons:

- ㅂ Children aged less than fifteen years old comprise more than fifty percent of the Palestinian community. Therefore, they can be considered as the main group to be targeted in an awareness campaign. In addition, it is well known that it is easier to teach young children rather than elder people. It should be mentioned also that children are, in most cases, the family members who hold the responsibility of dumping the domestic waste into communal containers. In addition, in many solid waste dumpsites in Palestine, scavenging is practiced by children on daily basis.
- ㅅ Women and housewives do the major part of housekeeping in the Palestinian community. Most of the waste produced in the kitchen as well as other

different house activities is handled by women. Therefore, they are the most eligible group to be educated and familiarized about waste recycling, reuse and ultimately reduction of waste generated.

- ㅇ The industrial sector is the largest producer of waste in terms of quantity, and is the source of the most hazardous waste in terms of quality. Quarrying and stone cutting is the major industrial activity in the West Bank. Huge amounts of waste from this sector is produced each year mainly in Jenin and Hebron areas.

- ㅈ Decision-makers and local administrative authorities are usually engaged with the planning and implementation of waste management projects. Therefore, they should be given the technical and legal information needed to assist them in taking the appropriate decisions according to the existing situation.

- ㅊ Solid waste workers hold the responsibility of waste collection and transport. Therefore, they are the most group exposed to waste and consequently, to the health hazards associated with this exposure. Furthermore, in some cases, there is a problem of social acceptance for these workers that might cause adverse impact on their performance.

- ㅋ Police, social and religious leaders (Imams, Shakes and Priests) form an important part within the society. The police are responsible for the enforcement of the law and the social and religious leaders can transfer the knowledge to the community through mosques, churches and meetings. They can stress on the religion from the cleanness point of view.

5. ACTIVITIES PERFORMED

The letter of acceptance assigned February 15th as the start date of the project. The Consultant began his contacts with the project team in order to save the time and prepare and submit the inception report in its proposed date. However, although the snow and heavy rains delayed the performance of activities at their exact dates, the following activities were performed:

ㄱ Mobilization of the Project Team

The nominated experts were contacted and mobilized. Several meetings were attended to review the proposal and to discuss the proposed implementation plan. The key meetings were held in UG office in Nablus on Thursday 27th February, Saturday March 1st and Sunday March 2nd, with the presence of all team members.

ㄴ Establishment of Communication Channels

Communication channels were established with the project coordinator of EQA, Mr. Ahmed Abu Thaher, the EQA staff at Jenin office, Mr. Abdul Mone'm Shihab (Director) and Ms.

Amena Draghmeh (Public Awareness Expert) and the director of the JJSC, Mr. Hani Shawahneh. Communications channels were also initiated with some municipalities and village councils in the project area.

Site Visits

A site visit was carried out on Sunday March 2nd. The team leader Mr. Nader El-Khateeb and the solid waste expert Dr. Issam Al-Khatib visited the offices of the JJSC and met the technical team there to introduce the team members and o discuss the implementation plan.

A site visit was carried out on the same day to the temporary dumpsite used by Jenin Municipality, which is located close to the existing wastewater treatment plant inside Jenin city. The team also visited the EQA office in Jenin city and met the office staff. The difficulties that may arise during the implementation of the project and the role of the EQA office in Jenin in facilitating the work were discussed in the meeting. In addition, the previous experience of the EQA in designing and implementing public awareness programs was presented in order to make use and build on this experience.

Review of Existing Literature

The JJSC provided the project team with the available reports, studies and other related materials and documents that may help in the design and implementation of the awareness programs and the execution of the different components of the project. The reports were reviewed and some information were important at the present stage involving the preparation of the Inception Report

6. IMPLEMENTATION PLAN

The awareness programs are planned to be conducted through a multidisciplinary variety of public awareness activities for the different targeted groups. These activities will use different approaches to address the different groups in the community. In addition, the objectives that are anticipated to be met and fulfilled may differ from one group to another.

Different packages of the public awareness program based on the community level are to be prepared. These packages will cover several areas in the Jenin/Tubas area. The following is a detailed description of the different components of the awareness program.

Designing public awareness programs regarding closure and rehabilitation of dumpsites

Rehabilitation and closure of the dumpsites are key elements in the public awareness strategy for solid waste. To fulfill the objectives of the project, the following actions will be conducted:

An assessment study should be conducted to help in defining the solid waste related issues and to learn about local environment and community. The assessment study will help the project team to:

a. Focus on issues caused by improper behavior of individuals or society.

b. Define the attitudes, knowledge and behavior of the community and their ability to participate in the public awareness program.
c. Identify campaign audience by defining the population whose behavior should be changed and improved.
d. Find out what public awareness activities are needed in order for the public awareness program be effective and useful.

The project team will conduct the following activities to complete the assessment and evaluation:

(1) Literature review: reports and databases are valuable resources that provide information about the socio-economic conditions such as level of education, income and household, health status, infrastructure and solid waste composition, quantities, collection and disposal. This is to cover the target communities.

(2) Meetings with stakeholders in the Jenin-Tubas area will be conducted. Meetings will be conducted with the Jenin Joint Services Council, the Jenin Governor, Mayors of Jenin and Tubas Municipalities, Heads of Village Councils, Environment Quality Authority officials and grassroots organizations. The meetings will address the priority issues of solid waste management, the needs to public awareness programs and their shorting in this field.

(3) Participatory Rapid Appraisal method will be conducted to identify community members that can participate and help in the implementation of the public awareness program. This technique will ensure that the program is appropriate to the community realities and strengthen the relation between the team member and the community of the Jenin-Tubas area. The public awareness program will be fundamentally built on the cooperation and responsiveness of community members in the target area. Community members will be chosen based on who have the willingness to join the project team and participate in the program. The participation of local community in the program will facilitate the work and promote the cooperation between the project team and the community. Participatory Rapid Appraisal is primarily a methodology which provides timely, relevant information to decision-makers on pressing issues they face in the project. This method can be described as follows in a more detailed manner:

a- Great speed compared with conventional methods of analysis;
b- Working in the “field”;
c- An emphases on learning directly from local inhabitants;
d- A semi-structured, multi-disciplinary approach with room for flexibility and innovation;
e- An emphasis on producing timely insights, hypotheses or “best bets” rather than final

When used within a public awareness context, the aims of Participatory Rapid Appraisal are to gain insight a community’s perspective on their priority needs, which provides a picture of the strength of feeling rather than the quantifiable magnitude of a particular problem. The emphasis placed on subjectivity is deliberately based upon the idea that when people feel strongly about a particular issue they want to act upon it.

This is directly related to the ultimate purpose of Participatory Rapid Appraisal which is action for change, ground in sound understanding of needs and priorities within.

A Participatory Rapid Appraisal can be used for two purposes, which could be separate or combined. First, Participatory Rapid Appraisal can be used as a diagnostic tool that is to examine, describe and analyze particular community concerns. Second, it can be used as an agent for change, where the community concerns are taken as point of departure for the development of an action program focusing on improving the quality of life of the community or parts of it. It can be argued that the most successful Participatory Rapid Appraisal combines both these purposes where they fit into a larger research program which allows for more complex and in-depth understanding of community concerns, feeding into policies for change which are built upon an alliance of communities and decision-makers. In short, it is important to outline at the beginning the objectives of a Participatory Rapid Appraisal exercise, and the context within which it takes place.

The steps within a Participatory Rapid Appraisal can be broadly defined, but have to be understood in a flexible manner, as local circumstances can dictate alterations to the sequence (Ong, 1996). An outline pattern is shown in Table 1.

Table 1: Outline steps in Participatory Rapid Appraisal (PRA)

Step 1	Define purposes, target communities and agencies involved.
Step 2	Project leader or team to prepare PRA.
Step 3	Workshop with multi-agency, multi-disciplinary team.
Step 4	Fieldwork: observation, secondary data collection, and interviews.
Step 5	Collection and analysis of data and formulation of the needs list.
Step 6	Prioritization of needs.
Step 7	Feedback to community and discussion of action.
Step 8	Program of change.
Step 9	Evaluation and redefinition of priorities.
Step 10	Second PRA (Visioning of the future).

(4) Different questionnaires are going to be developed to help collect as much information, hygienic conditions, community level of awareness regarding hazardous materials, hazards of waste burning and random dumping as possible, health risks associated with improper waste management, access to media, who are the most influential family and community members and other issues, as possible. Emphasis will be given also to qualitative information such as people's attitudes, beliefs and behaviors, their needs and priorities. The questionnaires will cover random samples of polluting, industrial facilities, housewives, solid waste workers and children. The questionnaires will be used to fill in the data gaps and to verify and update the collected data from literature review.

(5) Analyze the data collected from the questionnaires.

The quantitative data that will be obtained from the questionnaires will be coded and entered into the computer. Utilizing SPSS statistical software, the data will be analyzed and cross-tabulated. Comments that will be obtained from the field workers will be

analyzed. Cross tabulation between different dependent and independent variables along with Chi-square (χ^2) test will be used to indicate the P-value that shows if there is a significant relation or not between two parameters. P-value<0.05 indicates significant relation and P-value >0.05 indicates no significant relation.

Analysis of the qualitative data such as people's attitudes, beliefs and behaviors, their needs and priorities requires a careful review of all information collected from the different sources. The analysis is not to be done after all data have been collected, but rather is part of a continual process of examining the information as it comes in, classifying it, formulating additional questions, verifying the information, and developing conclusions.

The project team will meet to make the design of the public awareness program. Target groups will be identified. For each target group, we will select the most appropriate approaches, messages style and methods. The design will include the size of population, gender, age group, occupation, and population distribution in urban and rural areas.

The project team will meet the community stakeholders mentioned above to present the results of the data collection and the design of the public awareness program.

Implementation of Public Awareness Programs

On the Job Training

The EQA's staff and selected community participants capabilities will be enhanced through on the job training. This on the job training can be achieved through participants' contribution in preparing the design and the implementation of the public awareness program. Consequently the trained staff can carry out different public awareness activities after ending the project. This will ensure sustainability and continuity. It is proposed that the Consultant will subcontract a community participation expert to conduct a 5-days workshop using PRA methodology in Jenin and other potential areas under the community participation component. The workshop and training will focus on identifying solid waste problems and solutions for the identified areas based on community's perspective and needs. Participatory Rapid Appraisal (PRA) tools and Community Participation Methodology will be used to assess solid waste problems, and to identify suitable solutions for the problem. The following paragraphs details the training program.

a. Training Objectives

1. Introduce the concept of community participation and Participatory Rapid Appraisal (PRA).
2. Participants will have the chance to understand and apply the PRA tools in a reality simulation situation.
3. Prepare a plan to conduct PRA in the identified areas to assess problems and issues related to solid waste and identify related solutions.
4. Conduct PRA in Jenin-Tubas area to assess problems and issues related to solid waste and identify related solutions.
5. Analyze PRA results; prioritize problems and solutions related to solid waste in the area.

b. Training Topics

Training main topics of the job training are as follows:

1. Participation in development
2. The characteristics and role of community facilitators
3. PRA tools
4. The challenges of implementing participatory approach in the field
5. Planning, implementing, and documenting participatory rural appraisal research.

c. Training Methodology

The Training techniques are:

1. Brainstorming

The facilitators will use this technique in order to encourage individual and group discussions. This technique helps participants to build on their previous knowledge and experiences, and to listen to different points of view without passing judgment. The brainstorms are important for the team in that they clarify their thinking about community concerns, and focus on the central issues through the process of reduction.

2. Individual input

Each participant had the chance to express his ideas and opinions, and present them to the rest of the group in words or through flashcards, flip charts, whiteboard, and any other creative means.

3. Small-group work

In order to have participants exchange learning experiences and opinions, small groups will be assigned to specific tasks related to new ideas and concepts, or problems assessment and solving. Separation of domestic solid waste into its different components could be one of the tasks of small groups. The purpose of the training is to bring together

the various group members in order to agree the main objectives of PRA exercise, the method of work, and to create a team. The created team will enhance the relationship between the local communities and the local village and municipal councils. Examples of study questions are:

- Find out the daily waste generated in the community. Compare with other communities and countries.
- What is the collection frequency of waste generated in the community?
- What are the basic contents of waste in the community?
- How does the community dispose of its solid waste?
- Does the community has recycling program? Describe this program.
- How can we limit or reduce waste generation?
- What items are commonly reused in the community?
- Have you visited a factory in your area? How much solid waste it generates?
- How is this handled?

d. Participants

According to the technical part of the proposal, the PRA training course will be conducted for one group only. Another training course could be conducted by some of the highly qualified trainees that will be selected from those who attended the first training course of the PRA with the supervision of the project team. A group of 30-40 participants (male and female) from different experiences and levels representing the local community and the Environment Quality Authority staff will be selected to attend the training each of the two PRA training courses. The participants will mainly be, representatives from the local councils (mainly those who have direct relationship with solid waste, such as heads of health departments if available, municipality engineers, etc), members of the JJSC, representatives from the environmental clubs in the target areas, representatives from the social clubs and local committees, representatives from the Ministry of health/ environmental health division in Jenin Governorate, and other socially effective people. The diverse background of the participants encourages rich discussions and interactions, which maximized the benefits of training.

- **Prepare and disseminate public awareness materials**

Prepare and disseminate public awareness materials including an educational video, information leaflets, posters, stickers, a character that children identify (Palestinian Energy Authority selected RASHED as their character). If time permits, an advertisement in the local newspapers to select a symbol for the public awareness program, and it could be "CLEAN" (نظيف (. Produce in ample amounts to enable dissemination by community based practitioners, through schools, etc.

Based on the collected information and the Participatory Rapid Appraisal approach, the following tools are suggested to be used, but not limited to, in the public awareness program:

a. Using mass media to transmit awareness

Farah and Markazi are local TVs in the Jenin district that covers the target area. It is proposed to conduct a bi-weekly basis TV program. The program is suggested to concentrate on interviews with official people from the Jenin Joint Service Council, Mayors, Environment Quality Authority and the Consultants team members including the solid waste expert and the sociologist. The aim of the program is to discuss different solid waste issues with each interview covering a specific topic. Interviews will be live so that interaction between officials and community is made possible. The official will respond to the comments and questions raised by the community. It is believed that local TVs are widely reached by the people.

Similar programs will be conducted on local radios. A 10 min weekly program is suggested to be conducted at one of the local radio stations. Radio is an efficient place to introduce environmental issues. People could listen to radio in their cars, offices and homes. Information collected revealed that there are two local radio stations that widely cover the target area.

b. Conducting workshops, lectures and seminars

This method of communication allows discussions concerning project issues (closure and rehabilitation of dumpsite, open burning, littering, etc.). Different workshops with an overall number of approximately 16, will be conducted to targeting specific groups of people in the community. These workshops are hereinafter discussed in detail.

Women play a crucial role on the house level in terms of solid waste collection, management and recycling. Increasing their knowledge about the environment and solid waste is very crucial for the success of solid waste management program. To achieve this goal, a group of workshops will be conducted for women in the target communities. Each workshop will be held in cooperation with women clubs and associations at each community. Lectures about solid waste composition, recycling and composting, transportation and disposal of solid wastes to duping sites proposed by JJSC will be tackled and introduced, in addition to health issues of solid waste dumping sites will be presented at each workshop. Lectures will be prepared and presented by the solid waste expert, environmental health expert and the team leader.

Two other workshops will be conducted for the social and religious leaders (Sheikes, Imams and Priests) at Jenin and Tubas cities. Mosques and churches are places where most of men and youth go to pray especially on Fridays and Sundays. It is a place where social and religious leaders could speak about the environment and ensure that high percentage of the community will hear. Women at their houses also hear Friday speeches. Therefore, special workshops will be conducted for these leaders. In addition, social and religious leaders from adjacent villages will be invited. At each workshop, lectures about solid waste, clean environment, religion and environment, pollution prevention, environmental health, and hazards of solid waste to the health will be introduced. The participants will be provided with booklets including the materials presented. This will help the leaders to talk about the solid waste issues in the mosques and other social gatherings.

Another two workshops will be conducted to the solid waste workers, as these people are vulnerable to health problems associated with their exposure to solid waste. These two workshops will cover all the solid waste workers in the target communities. Emphasis will be

given to environmental health, pollution prevention, and hazards of solid waste to the health, and safety and protection measures. All solid waste workers including vehicle drivers and solid waste collection workers in the area will be invited to the workshop. Moreover, solid waste workers can be invited to attend the other workshops in the different groups of communities. This will help target groups be aware of solid waste workers, their duty and other issues related to their work.

Moreover, a fourth workshop will be oriented to police officials. Police officials are to be informed of the importance of solid waste management and the hazards related to unsafe practices related to solid waste disposal and dumping. This will aware them of their responsibilities towards controlling and correcting the miss-behaviors that might be seen in the community.

Finally, a special workshop targeting a representative sample of schoolteachers and students will be conducted to educate them on the role of students in environmental awareness, especially as related to Child-to-Child approach. The project team will benefit from the material of the public awareness program implemented by the Water and Environmental Studies Institute of An-Najah National University for school teachers in Jenin district. In addition, child – to child approach can be conducted with the assistance of environmental clubs in the area. Schools are perfect environment to practice safe and clean solid waste disposal. At schools, groups could be formed to practice solid waste separation and safe collection. Several other environmentally sound behaviors could be practiced at schools and later transferred to homes and families by the students. Therefore special attention should be given to educate students and their teachers. More on the Child-to-Child approach is illustrated below

c. Conducting Child-to-Child Approach

As stated above children aged less than fifteen years old comprise more than fifty percent of the Palestinian community and should be considered as the main group to be targeted in an awareness campaign. In any public awareness program, children should be seen as agents of change, not megaphones to transmit adult messages. The most effective method of education is to involve children in decision-making rather than merely using them as communicators of adult messages. Therefore, it is proposed to follow the Child-to-Child Approach.

Child-to-Child approach is one of the tools used for public awareness activities at community level. This approach means that child is the focal point of teaching and adults present for counseling only. The elder child helps the younger to solve problems and issues linked to environment, health, education, etc. The approach requests an active participation and involvement of children in viewing the environmental and health problems in their community. They need to participate through group work to spread the thoughts related to the environment at home, schools, surrounding areas and society in order to build trust and self-confidence for better alternatives that will help in solving the environmental problems.

The Jenin-Tubas area (project area) includes large number. of schools which make it difficult to conduct the Child–to-Child approach by the project staff. The Consultant aims to target a sample of schoolteachers and students, which will be trained on the Child-to-Child approach as related to the project. This will form the nucleus for other further activities at their schools

as well as the rest of the schools in the project area. Therefore, it is suggested to conduct a training program for a representative sample of teachers and students at schools in the target area. The training course is expected to last for 6 days. The Consultant will subcontract a Child-to-Child approach specialist to conduct the workshop that will focus on training 30-35 teachers on the methodology of the approach.

Training topics are to include:

1. Definition of Child-to-Child approach.
2. Ladder of participation of child within the family.
3. Environmental and health topics such as personal hygiene, protection of environment from pollution, etc.
4. Ways of collecting information and its sources.
5. Communication skills.
6. How to spread the health and environmental messages at the places where the children are gathering.
7. Requesting the society to solve environmental issues.

The trained teachers will apply the approach at their schools. The subcontracted specialist will supervise their work at schools. Each teacher will choose to work with one class and follow the 6 steps of the approach as follows:

- Problem identification
- Data collection.
- Data analysis and discussion.
- Implementation of public awareness through posters, conducting plays and stories, cleaning campaigns, planting trees, identify a character, etc.
- Monitoring and evaluation.
- Follow up the approach.

Inclusion of Messages:

Choosing messages and themes through the Child-to-Child Approach: Children will work on developing messages for the solid waste issues. They will use these messages as a tool for their public awareness activities within their communities. The teacher will ensure that these messages should be simple, interesting and limited in number. Messages will be designed and printed as stickers that would be distributed to the community.

Develop a program of activities

As part of the Child-to-Child approach and other elements of the awareness program, different activities will be suggested including:

Cleaning campaigns will be conducted at each community and at the old dumpsites. School children will be encouraged to participate in the cleaning campaign. It is suggested to cover the closed dumpsites with a layer of soil after completion of the cleaning process.

Planting trees in the closed and rehabilitated dumping sites by varieties that tolerates the conditions in the area planted.

- **Monitoring and Evaluation**

In the monitoring and evaluation element of the awareness program, indicators will be chosen and evaluated by the end of the public awareness campaign. Questionnaires could be developed and disseminated to indicate the behavior changes, number of children participate in the cleaning campaign, number of planted trees and other parameters of the program. Other indicators could be suggested after program implementation.

7. COMPOSITION OF THE TEAM AND TASKS OF EACH TEAM MEMBER

The awareness program will be implemented through the involvement of the following multi disciplinary experts.

Mr. Nader El-Khateeb (Project Leader)

Mr. El-Khateeeb will take the role of the team leader. He will participate in the planning and design of the public awareness programs concentrating on managerial issues, supervise the work plan, review the reports and follow up all logistic issues of the project. In addition, his extensive experience in the environmental awareness will be employed in the proposed workshops. At the end of the project he will be responsible for evaluating the programs.

Dr. Issam Al-Khatib (Solid Waste Expert)

Dr. Al-Khateeb, will conduct the assessment study. He will develop and analyze the technical parts of the proposed questionnaire. Besides, he will participate in the design of the public awareness programs concentrating on the solid waste issues. He will participate in the different workshops and radio and TV programs. In addition, he will help in drafting the progress reports.

Dr. Mohammed Saleem Shtayyeh (Environmental Health and Public Awareness Expert)

Dr. Shtayyeh will plan and design the awareness programs concentrating on environmental health issues. He will alsoparicipate in the development and analysis of the technical part of the proposed questionnaire. He will lecture in the workshops and participate in the radio and TV programs. He will draft the progress reports.

Dr. Maher Abu Zant (Social Expert)

Dr. Abu Zant will develop and analyze the social part of the proposed questionnaire. He will participate in the design of the awareness programs. He will lecture in the workshops and participate in the radio and TV programs. Also he will help in drafting the progress report.

Field activities such as data collection and coordination with the different stakeholders in addition to the tree planting and cleaning campaigns, will be implemented by a support staff consisting of:

Mr. Yazeed Mohammed (Field Coordinator)

Yazeed will arrange for the different workshops, coordinate the activities with EQA, municipalities and other stakeholders. He will be responsible for data collection and conducting he cleaning and tree planting campaigns.

Ms. Eva Jaradat (Field Researcher)

Ms. Jaradat will assist the field coordinator in all the activities he will carry out.

The following table represents the technical, management and support staff that will be involved in the awareness program and campaign.

Table2: Technical and Support Staff

1. Technical/Managerial Staff

Name	Position	Task
Mr. Nader Al-Khateeb	Project Leader	Participating in the planning and design of the public awareness campaign, (overall management activities). Supervision of project work plan Reviewing the reports Follow up all logistics of the project Participate in the proposed workshops Monitoring and evaluation
Dr. Issam Al-Khatib	Solid waste Expert	Conducting the assessment study Developing and analyzing the technical part of the questionnaires. Participating in the design of the public awareness, concentrating on solid waste issues. Lecturer in the proposed workshops. Organizing and participating TV and radio programs. Helping drafting the progress reports (Inception, Interim and Final)
Dr. Mohammed Saleem Shtayyeh	Environmental health and Public Awareness Expert	Conducting the assessment study, concentrating on environmental health issues. Planning and design of the public awareness campaign Developing and analyzing the technical part of the questionnaires. Lecturer in the proposed workshops. Participating in TV and radio programs. Drafting the progress reports (Inception, Interim and Final).
Dr. Maher Abu Zant	Social Expert	Developing and analyzing the social part of the questionnaires. Participating in the design of the public awareness, concentrating on the social issues Helping drafting the progress reports (Inception, interim & Final). Lecturer in proposed workshops.

2. Support Staff

Name	Position	Task
Mr.Yazeed Mohammed	Field Coordinator	Arrange for the different workshops Coordinate the activities with EQA, Municipalities and stakeholders. Data collection Conduct the cleaning campaign Conduct the planting trees program.
Ms. Eva Jaradat	Field Researcher	Assist the field coordinator for the different workshops Data Collection Conduct the cleaning campaign Conduct the planting trees program.

8. TIME SCHEDULE

The proposed activities described in section 6 will be implemented during the assigned project period. However it is suggested that the activities will be carried out up to the end of July. During March, the assessment study will be prepared, developed, and completed. In addition, the preliminary public awareness program will be prepared. The training course on Participatory Rapid Appraisal Method will be conducted in March Also. An inception report will be submitted on March 8th.

During the following four months (April – July), the mass media programs will be prepared and implemented. Other workshops will be conducted also. Cleaning campaigns will be carried out intermittently during the said period, while tree planting campaigns will be carried out as soon in early April because the planting season does not exceed beyond that date. However, and due to the prevailing conditions in the project area, this task can be postponed after the project phase and may be next winter because of the expected obstacles that may be imposed by the Israeli Occupation and the fact that tree planting season is in winter.

An interim report will be submitted at the first week of April and a final report will be submitted at the end of July.

The following tables represent the schedule of the implementation of the project activities.

Insert table 3

Insert table 4

9. REFERENCES

- Al-Khatib (2002) “Industry of Wooden Coal and its Effect on Environmental Pollution and Public Health in the Region of Ya’bed -Jenin District”. The First Palestinian Conference on Public Health, An-Najah National University, Nablus, Palestine.

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