Palestinian National Authority
Palestinian Central Bureau of Statistics

Environmental Economic Survey, 2006

Table of Contents

Introduction

This survey is based on an economic establishments sample survey, covering the whole economic sectors. It provides data on the main indicators of environment in the economic establishments, including water, management of solid waste and wastewater.

Concepts and Definitions

Activity Uses of Water: Using water for industrial and production operations in the establishment

Activity Wastewater: The produced wastewater from activity uses of water.

Wastewater: Used water, typically discharged into the sewage system. It contains matter and bacteria in solution or suspension.

Biological Treatment: Wastewater treatment employing aerobic and anaerobic microorganisms that result in decanted effluents and separate sludge containing microbial mass together with pollutants. Biological treatment processes are also used in combination or in conjunction with mechanical and advanced unit operations.

Cesspit: A well or a pit in which night soil and other refuse is stored, constructed with either tight or porous walls.

Chemical Treatment: Treatment methods that are used to effect the complete breakdown of hazardous waste in to non-toxic gases or, more frequently, to modify the chemical properties of the waste, for example, through reduction of water solubility or neutralization of acidity or alkalinity.

Mechanical Treatment: Wastewater treatment of physical and mechanical nature that results in decanted effluents and Separate Sludge. Mechanical treatment processes are also used in combination with biological and advanced unit operations. Mechanical treatment includes Processes such as sedimentation and flotation.

Normal Uses of Water: Using water for cleaning, cooking, washing, etc…in the establishment

Normal Wastewater: The produced wastewater from normal uses of water.

Sewage Network: System of collectors, pipelines, conduits and pumps to evacuate wastewater (rainwater, domestic and other wastewater) from any of the location paces generation either to municipal sewage treatment plant or to a location place where wastewater is discharged.

Solid Waste Disposal: Ultimate deposition or placement of refuse that is not salvaged or recycled.

Waste Collection:	Collection or transport of waste to the place of treatment or discharge by municipal services or similar institutions, or by public or private corporations, specialized enterprises or general government. Collection of municipal waste may be selective, that is to say carried out for a specific type of product, or undifferentiated, in other words, covering all kinds of waste at the same time.
Wastewater Treatment:	Process to render wastewater fit to meet environmental standards or other quality norms. Three broad types of treatment may be distinguished: mechanical, biological, and advanced.

Survey Questionnaire

The environmental questionnaire was designed according to international standards and recommendations for the most important indicators, taking into account the special situation of Palestine. Many visits for economical establishments were made in order to improve the survey tools and to test the questionnaire before implementing the survey; consequently some modifications were made on the questionnaire and on the instructions following the visits.

Stages of designing and checking the questionnaire:
The questionnaire design passed the following steps:
- It was referred to the UN recommendations
- It was referred to PCBS questionnaires in this field such as household environmental survey, industrial environmental survey and. economical environmental survey.
- A draft questionnaire was suggested.
- Finally, a filling questionnaire and editing instructions was prepared.

Data set linkage

File Name	Content	Key variable
Main File	Main file data	SEQNO: Establishment Number
Subform	Separated solid waste data	SEQNO: Establishment Number

Target Population

All the Palestinian economic establishments, which included in the Economic Series Survey sample in the Palestinian Territory.

Sample and Frame

Sample Design
The sample is a single-stage stratified cluster random sample. It was 3,828 Palestinian economic establishments distributed according to the economic activities and governorates.

Sample Frame
The sampling frame was based on the Census-2004 conducted by PCBS, which was updated by frame modification survey 2005.

Stratification
Three levels of stratification were followed in designing the sample of the economic Survey including:
1. Stratification by Region: the establishments were classified to regions: the West Bank and Gaza Strip
2. Stratification by economic activity.
3. Stratification by employers group.

Estimations Procedure

It is necessary, when calculating the estimations of the survey indicators, to calculate the weights of the establishments. The weight of an establishment is the mathematical inverse of choosing it.

Calculation of Variances

Variance is change from a variable to another, it depends on:
1.   The sample size
2.   The actual variance for all the population units
3.   the sample design

The variance for a number of variables was calculated using CENVAR
The variables that calculated are:
1.   standard error
2.   Coefficient of variance = standard error*100% / estimation
3.   Effect of sample design
4.   95% confidence interval

Reference Period

The data was collected between 15/03/2006 and 01/06/2006, the reference period during the data collection process was February 2006 for all the data except the periodicity of the solid waste collection, the reference period was the last week of the fieldworker existence in the establishment.

Data Collection

Training Fieldworkers
The field workers were trained on the main skills before the start of data collection. The interviewers were trained on the environmental survey by implementing training courses in three locations in the West Bank and one location in Gaza Strip. Instructions for filling the questionnaire were made available for the interviewers. The trainers provided the participants with aims and definitions of the different indicators of the survey and how to fill in the questionnaire.

Data Collection
Field operations started on 20/03/2004 and lasted until 10/06/2004. The fieldwork team consisted of coordinator and the directors of the fieldwork offices and field workers, and each team consisted of supervisors and five field workers.

Response Rates

The results of responding were divided into the following:

Interview result	Frequency	Percent, %
Completed questionnaires	3,288	85.9
Totally closed	211	5.5
partially closed	39	1.0
Not found unit	51	1.3
Didn't work during the reference month	28	0.7
Reject to cooperate	97	2.6
Duplicated	5	0.1
Closed because of the events	3	0.1
Israeli ownership	3	0.1
Others	103	2.7
Total	**3,828**	**100**

Data Processing

The data processing stage contain of the following operations:

1. Editing before data entry: all questionnaires were edited again in the office using the same instructions adopted for editing in the fields.

2. Data entry: In this stage data were entered into the computer, using Access database. The data entry program was prepared to satisfy a number of requirements such as:

- Duplication of the questionnaire on the computer screen.
- Logical and consistency check of data entered.
- Possibility for internal editing of questions answers.
- Maintaining a minimum of digital data entry and fieldwork errors.
- User-Friendly handling.
- Possibility of transferring data into another format to be used and analyzed using other statistical analytical systems such as SAS and SPSS.

Data Quality

Two types of errors affect the quality of survey data; sampling and non sampling errors. The sampling errors are measurable, however the non-sampling errors could not be determined easily due to the diversity of sources (e.g. the interviewers, respondent, editor, data entry operator... etc).

However, several measures were adopted to minimize the effects of these errors. The interviewers, editors and coders had undergone intensive training and were provided with fieldwork manuals to consult when facing any problem.

The data entry program was designed in a way that allows error detection and correction. This applies particularly to logical errors that might not be discovered before data entry operations. A consistency check was also performed to assure accuracy after data entry.