



Palestinian Central Bureau of Statistics

Environmental Economic Survey, 2003 Main Findings

Table of Contents

Concepts and Definitions

Survey Questionnaire

Data Set Linkage

Target Population

Sample and Frame

Estimation Procedure

Variance Calculation

Reference Period

Data Collection

Response Period

Data Quality

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.

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.

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

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.

Data Set Linkage

File name	Content	Key variable
main	All the data except the separated waste data	Seqno (the establishment's number)
subform	data of separated waste	Seqno (the establishment's 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 2,548 Palestinian economic establishments distributed according to the economic activities and governorates.

Sample Frame

The sampling frame was based on the Census-1997 conducted by PCBS, which was updated by frame modification survey 2002.

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: 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 = $\text{standard error} \times 100\% / \text{estimation}$
3. Effect of sample design
4. 95% confidence interval

Reference Period

The data was collected between 10/6/2003 and 10/7/2003, the reference period during the data collection process was the last month of the fieldworker existence in the establishment 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 10/6/2003 and lasted until 10/7/2003. 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 Rate

The results of responding were divided into the following:

Interview result	Frequency	Percent, %
Completed questionnaires	1950	76.53
Totally closed	273	10.72
partially closed	91	3.57
Not found unit	37	1.45
Didn't work this year	32	1.26
Reject to cooperate	40	1.57
Duplicated	23	0.90
Closed because of Al-Aqsa intifada	54	2.12
Others	48	1.88
Total	2548	100.0

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.