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<http://www.pcbs.org> :

(970/972) 2 240 6340 :  
[diwan@pcbs.pna.org](mailto:diwan@pcbs.pna.org) :





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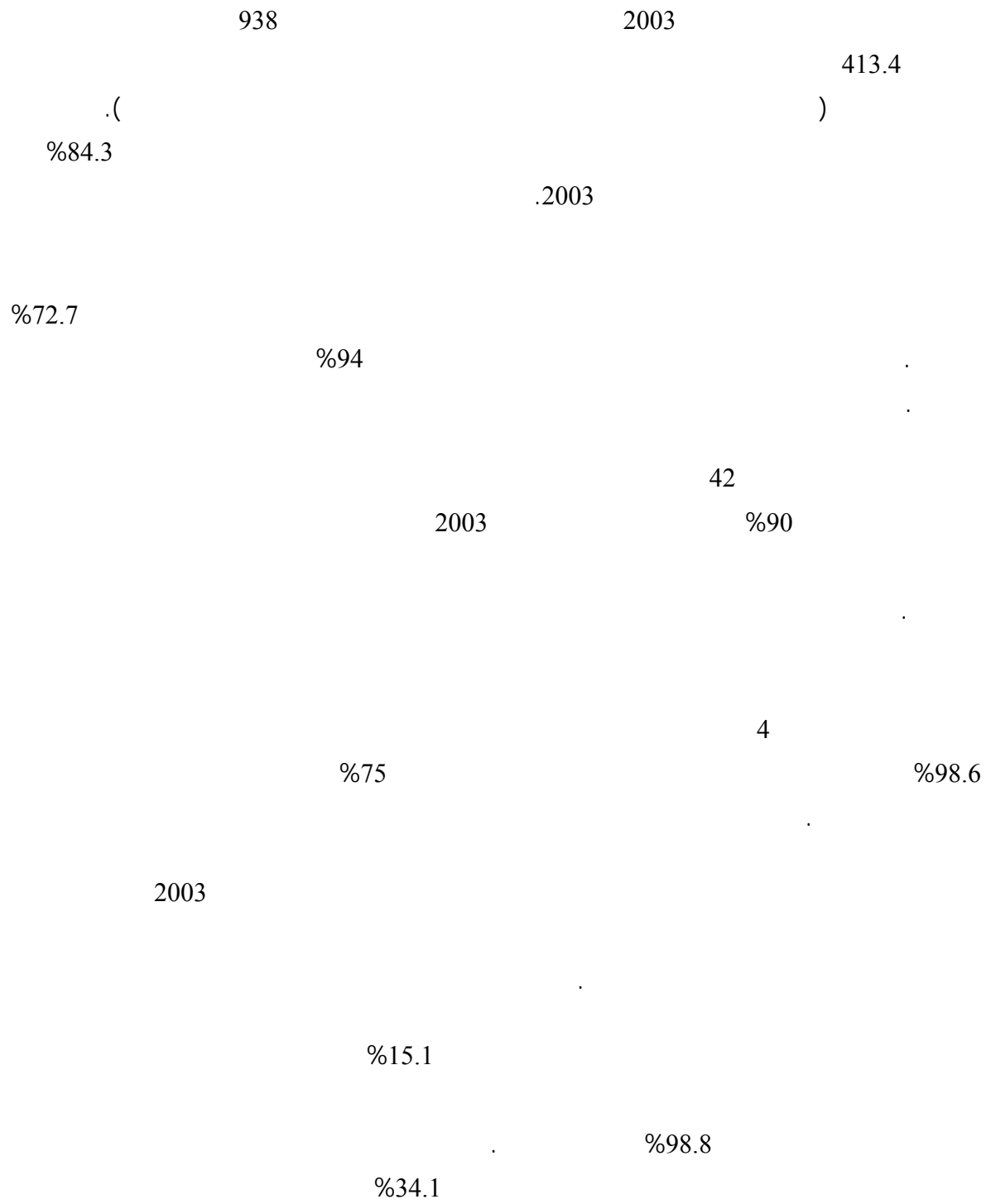
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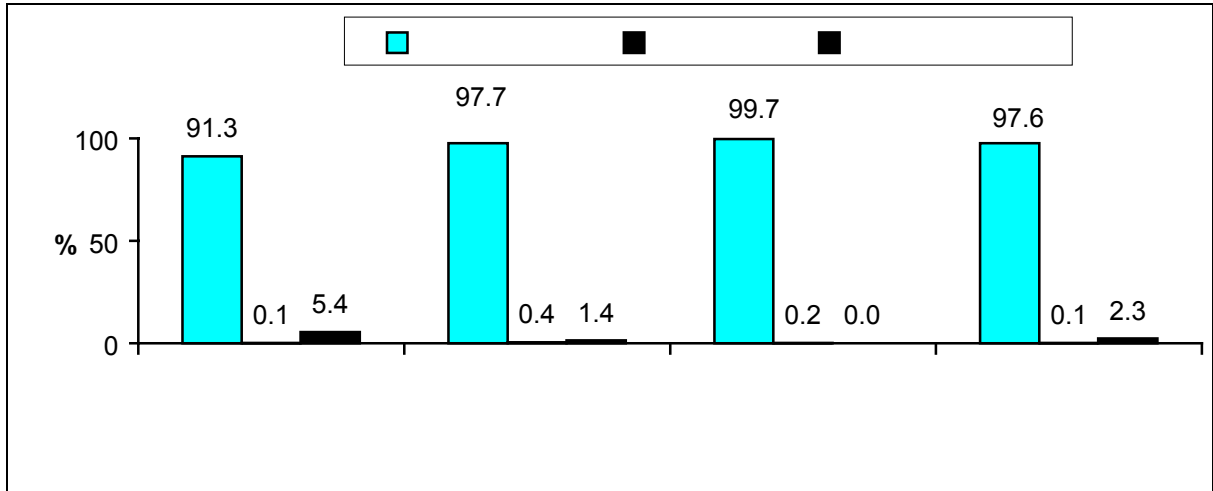




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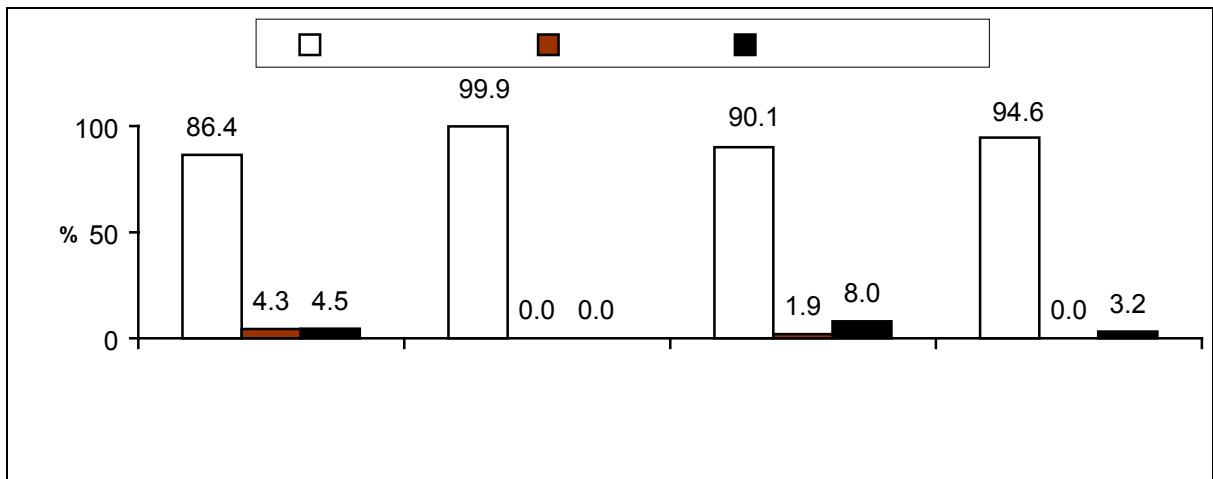
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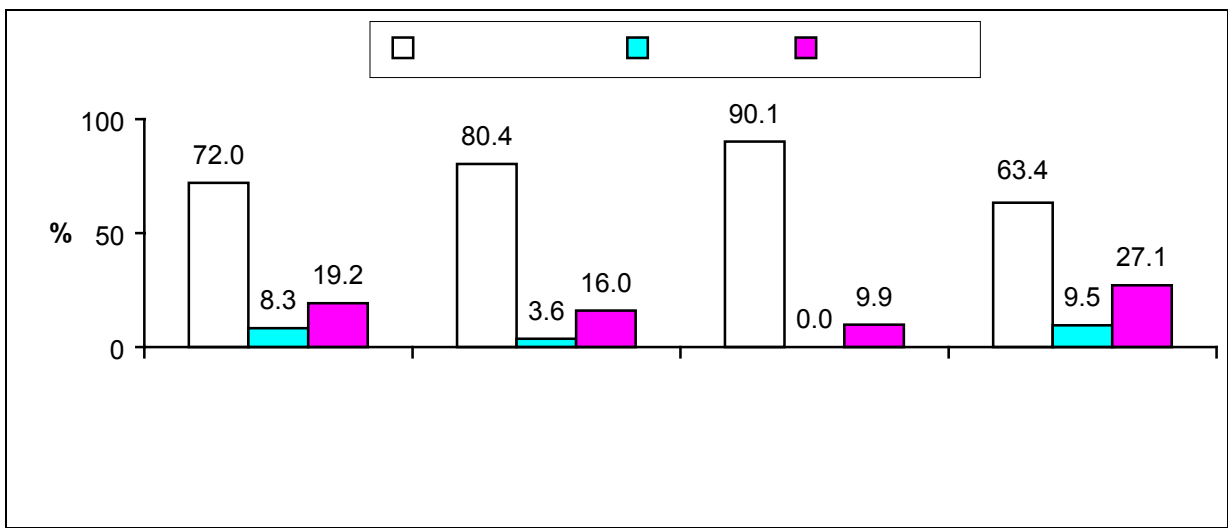
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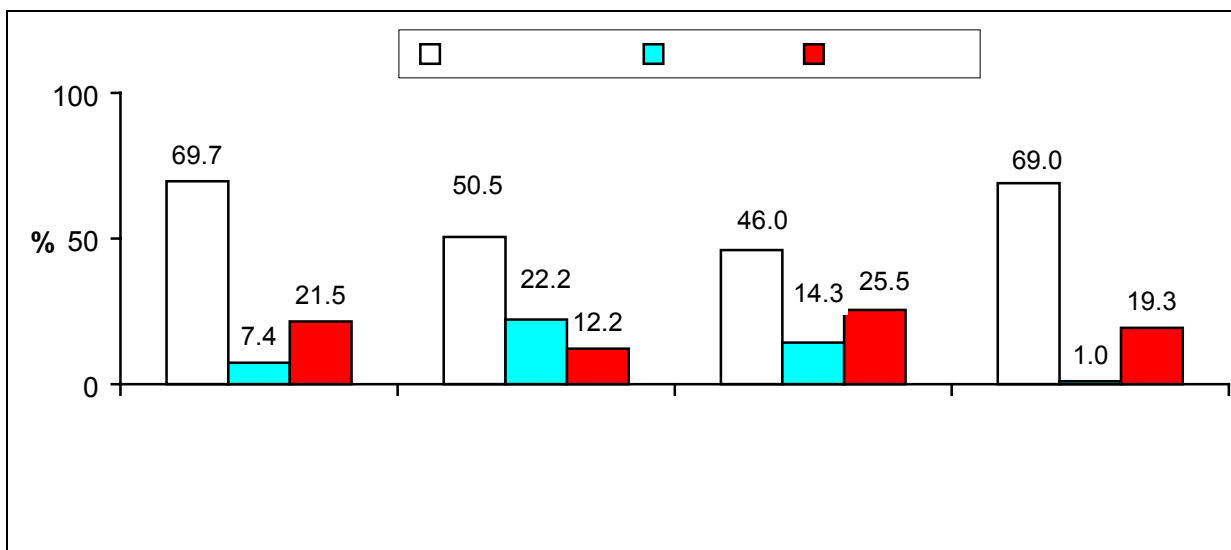
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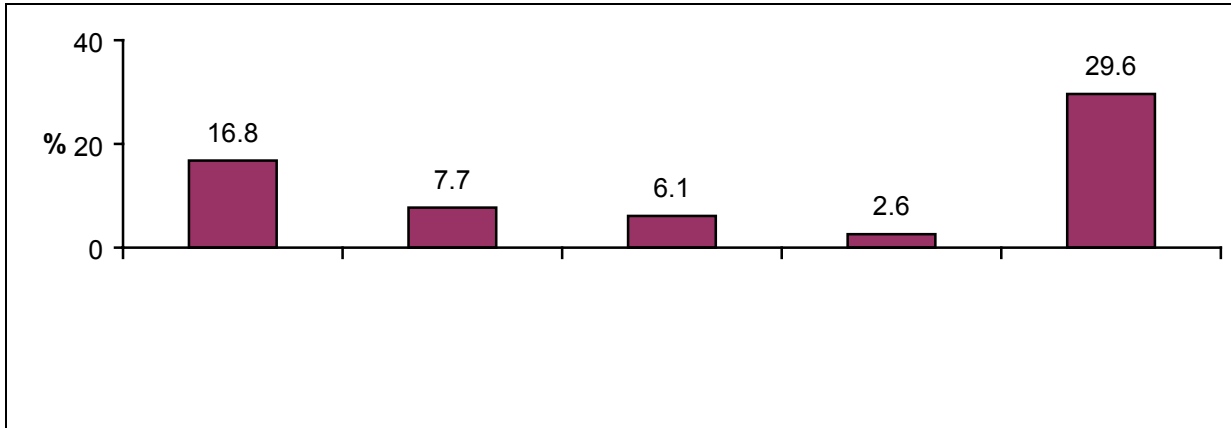
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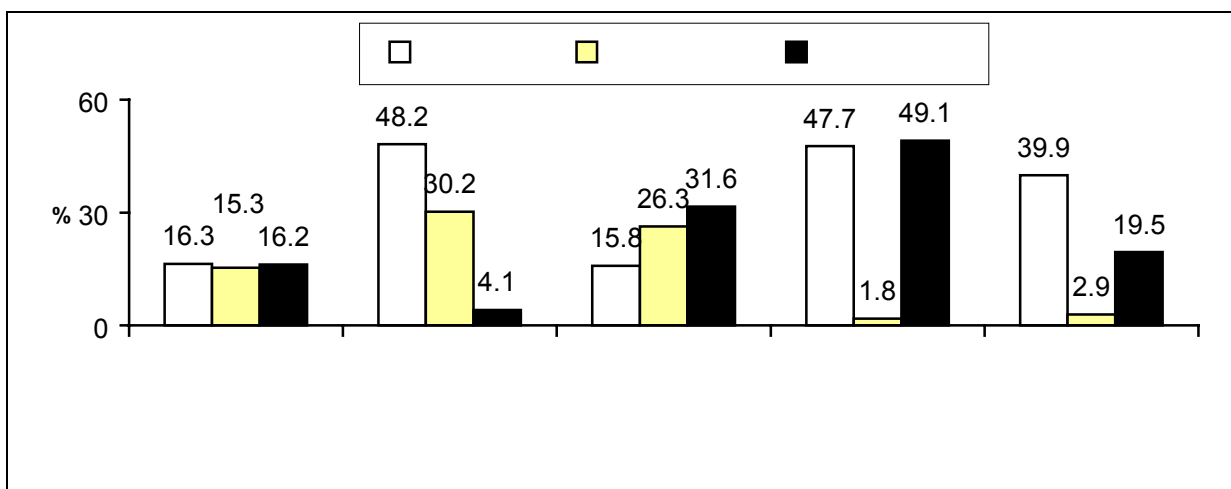
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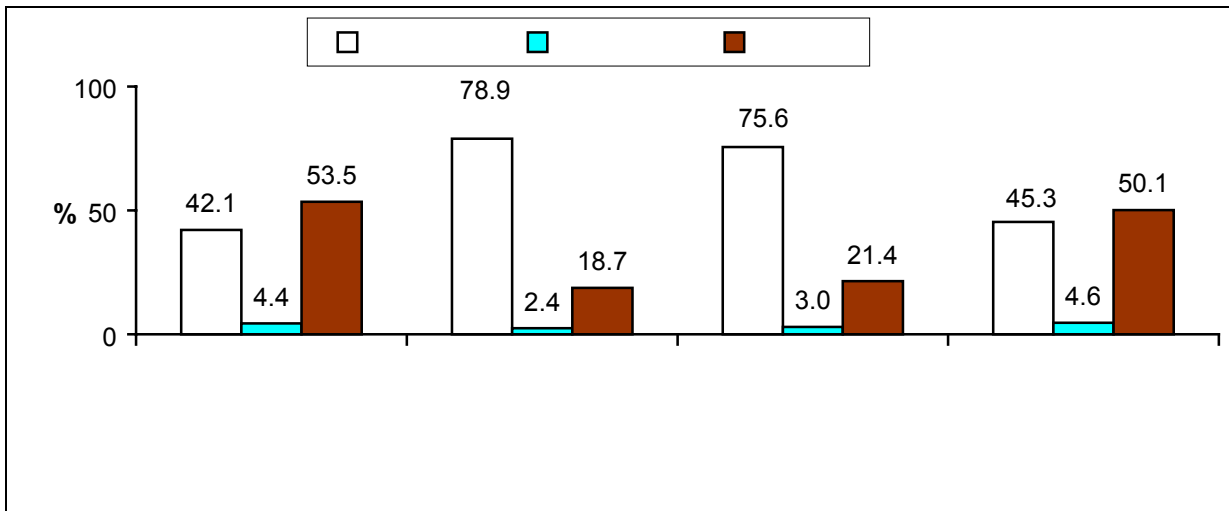
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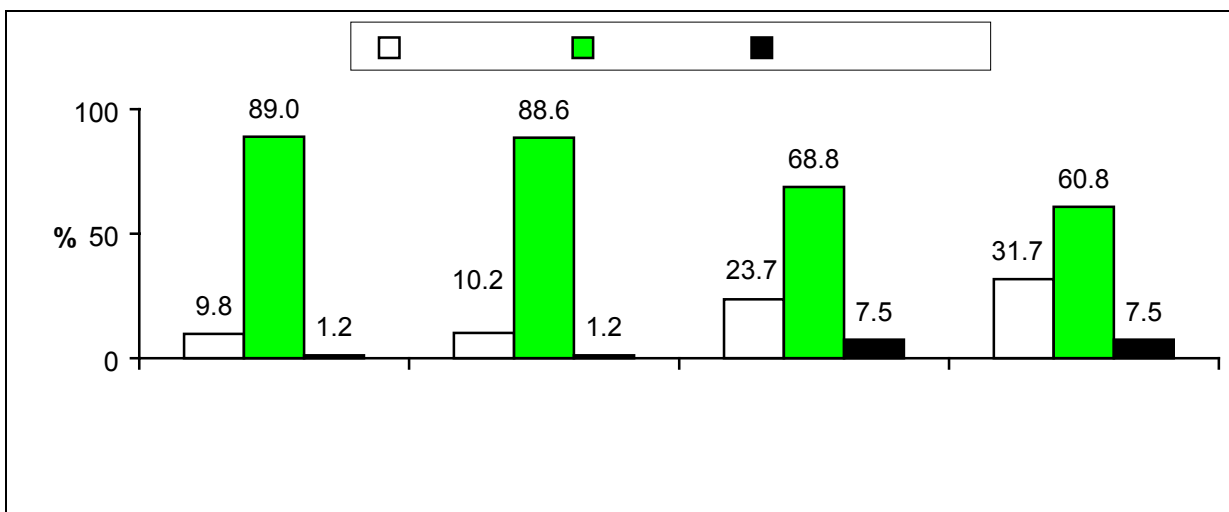
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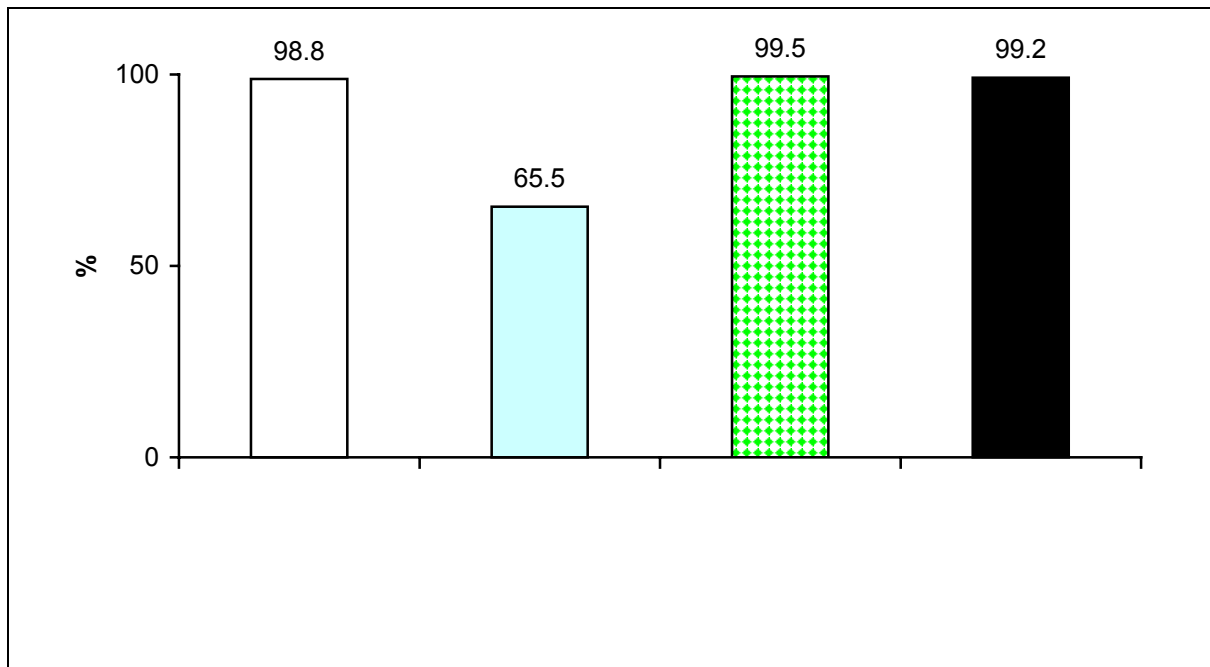
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# Tables

**Table1: Main Selected Indicators about the Activity of the Economic Establishments in the Palestinian Territory from Environmental Sides for the Years 2001, 2003**

Indicator	2003	2001	
<b>Quantity of monthly consumed water (1000 m<sup>3</sup>)*</b>	<b>937.8</b>	<b>2,549.0</b>	<b>*(<sup>3</sup> 1000)</b>
<b>Means of obtaining water for normal uses</b>			
Water network	93.2	69.3	
Water tanks	1.3	3.8	
Collection rain water well	4.1	0.3	
Others	1.4	26.6	
<b>Normal wastewater disposal method</b>			
Wastewater network	72.7	65.0	
Tight cesspit	3.6	3.5	
Porous cesspit	23.6	20.2	
Others	0.1	11.3	
<b>Solid waste separation existence</b>	<b>9.6</b>	<b>6.4</b>	
<b>Component of separated solid Waste</b>			
Paper & cartons	16.3	53.8	
Plastic & rubber	10.0	6.8	
Glass & metal	14.8	11.6	
Soil & stones	19.7	15.1	
Food Waste	22.4	0.4	
Medical Waste	14.9	..	
Chemical Waste	1.9	12.3	
<b>Doer of transporting solid waste</b>			
The establishment	19.4	23.8	
Local Authority	76.1	74.2	
Private contractor	0.9	0.3	
Others	3.6	1.7	

\*: Certain establishments show major increase in water consumption quantities between the years 2003 and 2001 due to the extending of their economic activities and adding of new production lines, while other establishments show a reduction in the consumed water quantities which is related to the deterioration of the economic situation, also due to the closure and curfew.

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**Table 2: Quantity of Consumed Water in the Economical Establishments in the Palestinian Territory by Economic Activity, 2003**

Units in thousand cubic meter/month

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Economic activity	Quantity of consumed water		
	Activity uses	Normal uses	Total
<b>Palestinian Territory</b>	<b>489.8</b>	<b>448.0</b>	<b>937.8</b>
Industrial activities	293.8	119.6	413.4
Constructions	9.7	3.0	12.7
Whole sale, retail & repairs	78.9	173.3	252.2
Hotels & restaurants	40.0	19.3	59.3
Transport, storage & communications	1.2	5.1	6.3
Real estate, renting & business activities	1.7	26.0	27.7
Education	11.0	39.6	50.7
Health & social work	31.9	42.7	74.5
Community, social & personal services	21.6	19.4	41.1

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**Table 3: Quantity of Consumed Water in the Economical Establishments in the Palestinian Territory by Region, 2003**

Units in thousand cubic meter/month

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Region	Quantity of consumed water		
	Activity uses	Normal uses	Total
<b>Palestinian Territory</b>	<b>489.8</b>	<b>448.0</b>	<b>937.8</b>
<b>West Bank</b>	<b>391.1</b>	<b>286.0</b>	<b>677.2</b>
West Bank North	135.6	80.7	216.2
West Bank Middle	164.1	147.6	311.7
West Bank South	91.5	57.8	149.3
<b>Gaza Strip</b>	<b>98.6</b>	<b>162.0</b>	<b>260.6</b>

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**Table 4: Percent Distribution of Economical Establishments in the Palestinian Territory by Means of Obtaining Water for Normal Uses and Economic Activity, 2003**

Economic activity	Others	Collection water well	Water tanks	Water network	
<b>Palestinian Territory</b>	<b>1.4</b>	<b>4.1</b>	<b>1.3</b>	<b>93.2</b>	
Industrial activities	3.2	5.4	0.1	91.3	
Constructions	0.5	1.4	0.4	97.7	
Whole sale, retail & repairs	1.3	5.3	2.3	91.1	
Hotels & restaurants	0.1	0.0	0.2	99.7	
Transport, storage & communications	1.2	3.1	0.6	95.1	
Real estate, renting & business activities	0.0	0.0	0.0	100.0	
Education	0.0	2.3	0.1	97.6	
Health & social work	0.1	0.3	0.6	99.0	
Community, social & personal services	0.0	2.4	0.0	97.6	

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**Table 5: Percent Distribution of Economical Establishments in the Palestinian Territory by Means of Obtaining Water for Normal Uses and Region, 2003**

Region	Others	Collection water well	Water tanks	Water network	
<b>Palestinian Territory</b>	<b>1.4</b>	<b>4.1</b>	<b>1.3</b>	<b>93.2</b>	
<b>West Bank</b>	<b>1.1</b>	<b>4.5</b>	<b>1.8</b>	<b>92.6</b>	
West Bank North	4.8	4.5	4.3	86.4	
West Bank Middle	0	0	0.0	99.9	
West Bank South	0.0	8.0	1.9	90.1	
<b>Gaza Strip</b>	<b>2.2</b>	<b>3.2</b>	<b>0.0</b>	<b>94.6</b>	

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**Table 6: Percent Distribution of Economical Establishments in the Palestinian Territory by Means of Obtaining Water for Activity Uses and Region, 2003**

Region	Others	Collection water well	Water tanks	Water network	
<b>Palestinian Territory</b>	<b>3.6</b>	<b>7.4</b>	<b>4.7</b>	<b>84.3</b>	
<b>West Bank</b>	<b>4.1</b>	<b>9.0</b>	<b>5.9</b>	<b>81.0</b>	
West Bank North	6.0	8.6	6.0	79.4	
West Bank Middle	0.0	1.6	4.0	94.4	
West Bank South	0.0	16.7	6.9	76.4	
<b>Gaza Strip</b>	<b>1.9</b>	<b>1.0</b>	<b>0.1</b>	<b>96.9</b>	

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**Table 7: Percent Distribution of Economical Establishments in the Palestinian Territory by Their Normal Wastewater Disposal Method and Economic Activity, 2003**

Economic activity	Others	Porous cesspit	Tight cesspit	Wastewater network	
<b>Palestinian Territory</b>	<b>0.1</b>	<b>23.6</b>	<b>3.6</b>	<b>72.7</b>	
Industrial activities	0.5	19.2	8.3	72.0	
Constructions	0.0	16.0	3.6	80.4	
Whole sale, retail & repairs	0.0	29.7	0.0	70.3	
Hotels & restaurants	0.0	9.9	0.0	90.1	
Transport, storage & communications	1.6	13.3	3.1	82.0	
Real estate, renting & business activities	0.0	14.0	2.9	83.1	
Education	0.0	27.1	9.5	63.4	
Health & social work	0.0	14.5	8.2	77.3	
Community, social & personal services	0.0	19.0	8.1	72.9	

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**Table 8: Percent Distribution of Economical Establishments in the Palestinian Territory by Their Normal Wastewater Disposal Method and Region, 2003**

Region	Others	Porous cesspit	Tight cesspit	Wastewater network	
<b>Palestinian Territory</b>	<b>0.1</b>	<b>23.6</b>	<b>3.6</b>	<b>72.7</b>	
<b>West Bank</b>	<b>0.2</b>	<b>29.0</b>	<b>4.6</b>	<b>66.2</b>	
West Bank North	0.0	43.2	0.1	56.7	
West Bank Middle	0.0	16.0	6.0	78.0	
West Bank South	0.4	31.8	5.8	62.0	
<b>Gaza Strip</b>	<b>0.1</b>	<b>11.5</b>	<b>1.3</b>	<b>87.1</b>	

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**Table 9: Percent Distribution of Economical Establishments in the Palestinian Territory by Their Activity Wastewater Disposal Method and Region, 2003**

Region	Others	Porous cesspit	Tight cesspit	Wastewater network	
<b>Palestinian Territory</b>	<b>6.6</b>	<b>20.5</b>	<b>8.9</b>	<b>64.0</b>	
<b>West Bank</b>	<b>5.6</b>	<b>20.8</b>	<b>10.8</b>	<b>62.8</b>	
West Bank North	1.4	21.5	7.4	69.7	
West Bank Middle	15.1	12.2	22.2	50.5	
West Bank South	14.2	25.5	14.3	46.0	
<b>Gaza Strip</b>	<b>10.7</b>	<b>19.3</b>	<b>1.0</b>	<b>69.0</b>	

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**Table 10: Percent of Economical Establishments in the Palestinian Territory by the Existence of Wastewater Treatment and Region, 2003**

Region	Existence of wastewater treatment	
<b>Palestinian Territory</b>	<b>5.7</b>	
<b>West Bank</b>	<b>7.1</b>	
West Bank North	2.3	
West Bank Middle	12.7	
West Bank South	21.0	
<b>Gaza Strip</b>	<b>0.3</b>	

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**Table 11: Estimated Monthly Solid Waste Quantity in the Economical Establishments in the Palestinian Territory by Region, 2003**

Region	( / ) Estimated quantity of solid waste (Ton/month)	
<b>Palestinian Territory</b>	<b>42,031.6</b>	
<b>West Bank</b>	<b>34,225.8</b>	
West Bank North	3,210.3	
West Bank Middle	16,454.0	
West Bank South	14,561.5	
<b>Gaza Strip</b>	<b>7,805.8</b>	

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**Table 12: Estimated Monthly Separated Quantity of Solid Waste in the Economical Establishments in the Palestinian Territory by Economic Activity, 2003**

Economic activity	( / ) Estimated quantity (Ton/month)	
<b>Palestinian Territory</b>	<b>42,031.6</b>	
Industrial activities	*33,455.3	
Constructions	5,073.0	
Whole sale, retail & repairs	2,644.2	
Hotels & restaurants	231.5	
Transport, storage & communications	61.9	
Real estate, renting & business activities	54.2	
Education	127.0	
Health & social work	299.6	
Community, social & personal services	84.9	

\*: The variance of these quantities is fairly high

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**Table 13: Percent Distribution of Economical Establishments in the Palestinian Territory by Separation of Solid Waste and Region, 2003**

Region	No separation	Type of separation	
		Partial	Total
<b>Palestinian Territory</b>	<b>90.4</b>	<b>7.1</b>	<b>2.5</b>
<b>West Bank</b>	<b>93.6</b>	<b>5.0</b>	<b>1.4</b>
West Bank North	94.5	3.3	2.2
West Bank Middle	88.3	11.7	0.0
West Bank South	96.4	2.3	1.3
<b>Gaza Strip</b>	<b>82.5</b>	<b>12.3</b>	<b>5.2</b>

2003

**Table 14: Percent of Economical Establishments in the Palestinian Territory by the Existence of Solid Waste Separation and Economic Activity, 2003**

Economic activity	Solid waste separation existence
<b>Palestinian Territory</b>	<b>9.6</b>
Industrial activities	16.8
Construction	7.7
Whole sale, retail & repairs	6.1
Hotels & restaurants	3.1
Transport, storage & communications	2.1
Real estate, renting & business activities	0.1
Education	2.6
Health & social work	29.6
Community, social & personal services	2.0



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**Table 15: Percent Distribution of Economical Establishments in the Palestinian Territory by the Component of Separated Solid Waste and Economic Activity, 2003**

Economic activity	Chemical Waste	Medical Waste	Food Waste	Soil & stones	Glass & metal	Plastic & rubber	Paper & cartons
<b>Palestinian Territory</b>	<b>1.9</b>	<b>14.9</b>	<b>22.4</b>	<b>19.7</b>	<b>14.8</b>	<b>10.0</b>	<b>16.3</b>
Industrial activities	0.0	0.0	17.2	38.6	10.5	2.0	31.7
Constructions	0.0	0.0	38.0	28.5	14.4	14.3	4.8
Whole sale, retail & repairs	0.0	0.0	46.4	0.0	3.2	4.0	46.4
Hotels & restaurants	0.0	0.0	17.8	17.7	0.0	5.5	59.0
Transport, storage & communications	20.0	0.0	0.0	0.0	40.0	20.0	20.0
Real estate, renting & business activities	0.0	1.4	48.6	1.4	0.0	0.0	48.6
Education	4.4	60.0	3.7	1.6	6.0	3.4	20.9
Community, social & personal services	48.8	0.0	49.6	0.8	0.0	0.0	0.8

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**Table 16: Percent Distribution of Economical Establishments in the Palestinian Territory by the Component of Separated Solid Waste and Region, 2003**

Solid Waste component	Gaza Strip	West Bank South	West Bank Middle	West Bank North	West Bank	Palestinian Territory
Paper & Cartons	<b>10.1</b>	28.2	23.6	19.4	<b>23.4</b>	<b>16.3</b>
Plastic & rubber	<b>7.8</b>	14.6	11.5	12.7	<b>12.6</b>	<b>10.0</b>
Glass & Metal	<b>12.1</b>	7.3	24.1	17.2	<b>17.9</b>	<b>14.8</b>
Soil & Stones	<b>27.8</b>	0.2	14.5	12.5	<b>10.4</b>	<b>19.7</b>
Food Waste	<b>32.2</b>	14.4	8.4	12.6	<b>11.1</b>	<b>22.4</b>
Medical Waste	<b>8.2</b>	33.8	14.5	25.5	<b>22.6</b>	<b>14.9</b>
Chemical Waste	<b>1.8</b>	1.5	3.4	0.1	<b>2.0</b>	<b>1.9</b>

2003

**Table 17: Percent Distribution of Economical Establishments in the Palestinian Territory by the Means Where Separated Solid Waste Put in and Economic Activity, 2003**

<b>Economic activity</b>	<b>Others</b>	<b>Plastic boxes</b>	<b>Metal boxes</b>	<b>Carton boxes</b>	<b>Special bags</b>	<b>Nylon bags</b>
<b>Palestinian Territory</b>	<b>15.3</b>	<b>22.7</b>	<b>15.9</b>	<b>7.1</b>	<b>14.2</b>	<b>24.8</b>
Industrial activities	21.9	16.2	15.3	13.6	16.7	16.3
Constructions	13.1	4.1	30.2	4.4	0.0	48.2
Whole sale, retail & repairs	21.0	31.6	26.3	5.3	0.0	15.8
Hotels & restaurants	0.0	0.0	0.8	1.1	1.1	97.0
Transport, storage & communications	13.9	13.9	7.2	7.7	0.0	57.3
Real estate, renting & business activities	0.0	0.0	60.0	0.0	40.0	0.0
Education	0.0	49.1	1.8	0.0	1.4	47.7
Health & social work	0.7	19.5	2.9	2.4	34.6	39.9
Community, social & personal services	0.0	0.8	0.0	0.0	0.0	99.2

2003

**Table 18: Percent Distribution of Economical Establishments in the Palestinian Territory by the Means Where Separated Solid Waste Put in and Region, 2003**

<b>Region</b>	<b>Others</b>	<b>Plastic boxes</b>	<b>Metal boxes</b>	<b>Carton boxes</b>	<b>Special bags</b>	<b>Nylon bags</b>
<b>Palestinian Territory</b>	<b>15.3</b>	<b>22.7</b>	<b>15.9</b>	<b>7.1</b>	<b>14.2</b>	<b>24.8</b>
<b>West Bank</b>	<b>14.6</b>	<b>12.9</b>	<b>10.4</b>	<b>14.4</b>	<b>15.9</b>	<b>31.8</b>
West Bank North	24.8	5.9	5.3	13.7	6.0	44.3
West Bank Middle	14.7	11.3	19.1	14.3	7.3	33.3
West Bank South	1.1	25.2	0.5	15.6	44.9	12.7
<b>Gaza Strip</b>	<b>15.9</b>	<b>32.0</b>	<b>21.2</b>	<b>0.0</b>	<b>12.7</b>	<b>18.2</b>

2003

**Table 19: Percent Distribution of Economical Establishments in the Palestinian Territory by the Periodicity of Separated Solid Waste Collection and Economic Activity, 2003**

Economic activity	Periodicity (weekly)			( )
	7 7 times and more	6 -4	3 1 From 1 to 3 times	
<b>Palestinian Territory</b>	<b>29.6</b>	<b>44.0</b>	<b>26.4</b>	
Industrial activities	13.4	47.4	39.2	
Constructions	0.0	53.4	46.6	
Whole sale, retail & repairs	57.1	33.3	9.6	
Hotels & restaurants	4.3	94.9	0.8	
Transport, storage & communications	21.7	41.8	36.5	
Real estate, renting & business activities	0.0	20.0	80.0	
Education	1.8	96.9	1.3	
Health & social work	9.0	55.1	35.9	
Community, social & personal services	0.0	2.4	97.6	

2003

**Table 20: Percent Distribution of Economical Establishments in the Palestinian Territory by the Periodicity of Separated Solid Waste Collection and Region, 2003**

Region	Periodicity (weekly)			( )
	7 7 times and more	6 -4	3 1 From 1 to 3 times	
<b>Palestinian Territory</b>	<b>29.6</b>	<b>44.0</b>	<b>26.4</b>	
<b>West Bank</b>	<b>12.2</b>	<b>38.9</b>	<b>48.9</b>	
West Bank North	0.1	57.7	42.2	
West Bank Middle	1.1	27.4	71.5	
West Bank South	48.5	35.7	15.8	
<b>Gaza Strip</b>	<b>44.9</b>	<b>48.5</b>	<b>6.6</b>	

2003

**Table 21 : Percent Distribution of Economical Establishments in the Palestinian Territory by the Transportation Method of Separated Solid Waste and Economic Activity, 2003**

<b>Economic activity</b>	<b>Both methods</b>	<b>Special tools</b>	<b>Manually</b>
<b>Palestinian Territory</b>	<b>0.3</b>	<b>10.3</b>	<b>89.4</b>
Industrial activities	0.7	19.9	79.4
Constructions	4.4	36.6	59.0
Whole sale, retail & repairs	0.1	9.5	90.4
Hotels & restaurants	3.2	0.0	96.8
Transport, storage & communications	0.0	13.9	86.1
Real estate, renting & business activities	40.0	40.0	20.0
Education	0.0	1.8	98.2
Health & social work	0.2	0.1	99.7
Community, social & personal services	0.0	0.0	100.0

2003

**Table 22: Percent Distribution of Economical Establishments in the Palestinian Territory by the Transportation Method of Separated Solid Waste and Region, 2003**

<b>Region</b>	<b>Both methods</b>	<b>Special tools</b>	<b>Manually</b>
<b>Palestinian Territory</b>	<b>0.3</b>	<b>10.3</b>	<b>89.4</b>
<b>West Bank</b>	<b>0.5</b>	<b>12.9</b>	<b>86.6</b>
West Bank North	0.3	13.1	86.6
West Bank Middle	0.6	19.5	79.9
West Bank South	0.7	0.2	99.1
<b>Gaza Strip</b>	<b>0.2</b>	<b>8.0</b>	<b>91.8</b>

2003

**Table 23: Percent Distribution of Economical Establishments in the Palestinian Territory by the Means Where Non -Separated Solid Waste Put in and Economic Activity, 2003**

<b>Economic activity</b>	<b>Others</b>	<b>Plastic boxes</b>	<b>Metal boxes</b>	<b>Carton boxes</b>	<b>Special bags</b>	<b>Nylon bags</b>
<b>Palestinian Territory</b>	<b>2.2</b>	<b>14.0</b>	<b>3.5</b>	<b>7.4</b>	<b>6.1</b>	<b>66.8</b>
Industrial activities	9.0	22.0	9.1	4.4	7.9	47.6
Constructions	1.4	11.5	3.5	2.5	5.9	75.2
Whole sale, retail & repairs	0.7	14.1	2.4	11.2	3.6	68.0
Hotels & restaurants	0.1	15.3	0.0	4.4	4.7	75.5
Transport, storage & communications	1.0	6.5	2.8	1.7	4.1	83.9
Real estate, renting & business activities	0.0	7.2	2.2	2.2	7.6	80.8
Education	0.0	5.5	0.0	0.0	6.3	88.2
Health & social work	0.0	4.4	0.0	0.0	18.0	77.6
Community, social & personal services	0.0	2.2	2.2	0.0	8.3	87.3

2003

**Table 24: Percent Distribution of Economical Establishments in the Palestinian Territory by the Means Where Non -Separated Solid Waste Put in and Region, 2003**

<b>Region</b>	<b>Others</b>	<b>Plastic boxes</b>	<b>Metal boxes</b>	<b>Carton boxes</b>	<b>Special bags</b>	<b>Nylon bags</b>
<b>Palestinian Territory</b>	<b>2.2</b>	<b>14.0</b>	<b>3.5</b>	<b>7.4</b>	<b>6.1</b>	<b>66.8</b>
<b>West Bank</b>	<b>3.2</b>	<b>12.1</b>	<b>3.1</b>	<b>8.3</b>	<b>4.2</b>	<b>69.1</b>
West Bank North	2.0	7.1	2.3	2.8	4.7	81.1
West Bank Middle	3.7	12.1	3.6	0.1	1.2	79.3
West Bank South	4.1	18.8	3.8	22.1	6.0	45.2
<b>Gaza Strip</b>	<b>0.1</b>	<b>18.7</b>	<b>4.6</b>	<b>5.1</b>	<b>10.7</b>	<b>60.8</b>

2003

**Table 25: Percent Distribution of Economical Establishments in the Palestinian Territory by the Transportation Method of Non-Separated Solid Waste and Economic Activity, 2003**

Economic activity	Both methods	Special tools	Manually
<b>Palestinian Territory</b>	<b>1.3</b>	<b>1.8</b>	<b>96.9</b>
Industrial activities	3.1	4.4	92.5
Constructions	1.7	3.1	95.2
Whole sale, retail & repairs	1.2	1.1	97.7
Hotels & restaurants	0.0	0.2	99.8
Transport, storage & communications	0.7	1.1	98.2
Real estate, renting & business activities	0.0	0.0	100.0
Education	0.2	0.0	99.8
Health & social work	0.0	2.5	97.5
Community, social & personal services	0.1	0.0	99.9

2003

**Table 26: Percent Distribution of Economical Establishments in the Palestinian Territory by the Transportation Method of Non-Separated Solid Waste and Region, 2003**

Region	Both methods	Special tools	Manually
<b>Palestinian Territory</b>	<b>1.3</b>	<b>1.8</b>	<b>96.9</b>
<b>West Bank</b>	<b>1.8</b>	<b>1.0</b>	<b>97.2</b>
West Bank North	0.1	0.3	99.6
West Bank Middle	1.0	0.5	98.5
West Bank South	4.8	2.2	93.0
<b>Gaza Strip</b>	<b>0.1</b>	<b>3.7</b>	<b>96.2</b>

2003

**Table 27: Percent Distribution of Economical Establishments in the Palestinian Territory by the Periodicity of Non-Separated Solid Waste Collection and Economic Activity, 2003**

Economic activity	Periodicity (weekly) ( )		
	7 7 times and more	6 -4	3 1 From 1 to 3 times
<b>Palestinian Territory</b>	<b>18.4</b>	<b>50.0</b>	<b>31.6</b>
Industrial activities	7.2	56.8	36.0
Constructions	1.8	56.3	41.9
Whole sale, retail & repairs	25.2	43.5	31.3
Hotels & restaurants	36.0	51.7	12.3
Transport, storage & communications	20.3	44.2	35.5
Real estate, renting & business activities	6.0	41.7	52.3
Education	6.5	77.9	15.6
Health & social work	5.0	69.1	26.0
Community, social & personal services	14.7	58.1	27.2

2003

**Table 28: Percent Distribution of Economical Establishments in the Palestinian Territory by the Periodicity of Non-Separated Solid Waste Collection and Region, 2003**

Region	Periodicity (weekly) ( )		
	7 7 times and more	6 -4	3 1 From 1 to 3 times
<b>Palestinian Territory</b>	<b>18.4</b>	<b>50.0</b>	<b>31.6</b>
<b>West Bank</b>	<b>15.3</b>	<b>48.6</b>	<b>36.1</b>
West Bank North	9.3	41.5	49.2
West Bank Middle	21.2	63.8	15.0
West Bank South	19.0	46.5	34.5
<b>Gaza Strip</b>	<b>26.1</b>	<b>53.8</b>	<b>20.1</b>

2003

**Table 29: Percent Distribution of Economical Establishments in the Palestinian Territory by Presence of Solid Waste Treatment, Type of Treatment and Economic Activity, 2003**

Economic activity	Type of treatment					Presence of solid waste treatment
	Others	Mechanical treatment	Chemical treatment	Buried	Open burning	
<b>Palestinian Territory</b>	<b>1.9</b>	<b>24.3</b>	<b>5.4</b>	<b>0.4</b>	<b>68.0</b>	<b>1.4</b>
Industrial activities	0.0	50.2	0.8	0.3	48.7	2.9
Constructions	16.4	0.0	0.0	0.0	83.6	2.0
Whole sale, retail & repairs	0.0	0.0	0.0	0.6	99.4	0.6
Hotels & restaurants	0.0	100.0	0.0	0.0	0.0	0.1
Transport, storage & communications	18.2	0.0	0.0	18.2	63.6	1.1
Real estate, renting & business activities	0.0	0.0	0.0	0.0	100.0	0.0
Education	0.0	0.0	0.0	0.0	100.0	2.6
Health & social work	0.0	0.0	0.0	0.0	100.0	4.8

2003

**Table 30: Percent Distribution of Economical Establishments in the Palestinian Territory by Presence of Solid Waste Treatment, Type of Treatment and Region, 2003**

Region	Type of treatment					Presence of solid waste treatment
	Others	Mechanical treatment	Chemical treatment	Buried	Open burning	
<b>Palestinian Territory</b>	<b>1.9</b>	<b>24.3</b>	<b>5.4</b>	<b>0.4</b>	<b>68.0</b>	<b>1.4</b>
<b>West Bank</b>	<b>2.0</b>	<b>27.0</b>	<b>5.7</b>	<b>0.1</b>	<b>65.2</b>	<b>1.7</b>
West Bank North	4.7	0.8	9.8	0.0	84.7	1.6
West Bank Middle	0.0	46.9	0.0	0.3	52.8	4.0
West Bank South	0.0	5.3	64.3	0.0	30.4	0.1
<b>Gaza Strip</b>	<b>1.7</b>	<b>8.7</b>	<b>3.4</b>	<b>1.7</b>	<b>84.5</b>	<b>0.7</b>



2003

**Table 31: Percent Distribution of Economical Establishments in the Palestinian Territory by Presence of Solid Waste Treatment, Doer of Treatment and Region, 2003**

Economic activity	Doer of treatment		Presence of solid waste treatment
	Other establishment	The establishment	
<b>Palestinian Territory</b>	<b>24.8</b>	<b>75.2</b>	<b>1.4</b>
<b>West Bank</b>	<b>28.9</b>	<b>71.1</b>	<b>1.7</b>
West Bank North	0.0	100.0	1.6
West Bank Middle	48.0	52.0	4.0
West Bank South	62.0	38.0	0.1
<b>Gaza Strip</b>	<b>1.6</b>	<b>98.4</b>	<b>0.7</b>

2003

**Table 32: Percent Distribution of Economical Establishments in the Palestinian Territory by the Solid Waste Collection Mean Inside the Establishment and Economic Activity, 2003**

Economic activity	Without container	Establishment closed container	Establishment open container	Municipality closed container	Municipality open container
<b>Palestinian Territory</b>	<b>39.2</b>	<b>0.4</b>	<b>3.4</b>	<b>4.8</b>	<b>52.2</b>
Industrial activities	46.9	0.0	6.3	0.9	45.9
Constructions	32.4	2.1	1.9	6.8	56.8
Whole sale, retail & repairs	41.6	0.0	2.9	4.9	50.6
Hotels & restaurants	24.6	0.1	0.0	11.1	64.2
Transport, storage & communications	25.1	0.8	2.7	6.0	65.4
Real estate, renting & business activities	20.6	4.1	2.5	6.6	66.2
Education	25.4	7.4	9.2	3.3	54.7
Health & social work	24.6	1.6	1.0	7.5	65.3
Community, social & personal services	35.0	0.0	0.0	10.4	54.6

2003

**Table 33: Percent Distribution of Economical Establishments in the Palestinian Territory by the Solid Waste Collection Mean Inside the Establishment and Region, 2003**

Region	Without container	Establishment closed container	Establishment open container	Municipality closed container	Municipality open container
<b>Palestinian Territory</b>	<b>39.2</b>	<b>0.4</b>	<b>3.4</b>	<b>4.8</b>	<b>52.2</b>
<b>West Bank</b>	<b>34.8</b>	<b>0.2</b>	<b>3.3</b>	<b>5.5</b>	<b>56.2</b>
West Bank North	53.5	0.0	4.4	5.1	37.0
West Bank Middle	18.7	0.5	1.9	2.8	76.1
West Bank South	21.4	0.3	2.7	8.2	67.4
<b>Gaza Strip</b>	<b>50.1</b>	<b>1.0</b>	<b>3.6</b>	<b>2.9</b>	<b>42.4</b>

2003

**Table 34: Percent Distribution of Economical Establishments in the Palestinian Territory by the Used Container Material Construction and Economic Activity, 2003**

Economic activity		
	Plastic	Metal
<b>Palestinian Territory</b>	<b>6.3</b>	<b>93.7</b>
Industrial activities	4.2	95.8
Constructions	7.1	92.9
Whole sale, retail & repairs	7.1	92.9
Hotels & restaurants	2.2	97.8
Transport, storage & communications	6.5	93.5
Real estate, renting & business activities	5.9	94.1
Education	18.6	81.4
Health & social work	6.5	93.5
Community, social & personal services	2.7	97.3

2003

**Table 35: Percent Distribution of Economical Establishments in the Palestinian Territory by the Used Container Material Construction and Region, 2003**

Region	Container Material Construction	
	Plastic	Metal
<b>Palestinian Territory</b>	<b>6.3</b>	<b>93.7</b>
<b>West Bank</b>	<b>7.1</b>	<b>92.9</b>
West Bank North	2.9	97.1
West Bank Middle	4.5	95.5
West Bank South	12.6	87.4
<b>Gaza Strip</b>	<b>3.8</b>	<b>96.2</b>

2003

**Table 36: Percent Distribution of Economical Establishments in the Palestinian Territory by The Used Container Volume and Economic Activity, 2003**

Economic activity	Container volume (m <sup>3</sup> )			
	12 and more	12 -7	6 -4	3-1
<b>Palestinian Territory</b>	<b>2.4</b>	<b>11.6</b>	<b>17.3</b>	<b>68.7</b>
Industrial activities	0.2	6.6	19.4	73.8
Constructions	2.9	5.9	24.6	66.6
Whole sale, retail & repairs	3.2	15.9	17.5	63.4
Hotels & restaurants	2.1	12.8	21.8	63.3
Transport, storage & communications	1.4	6.9	15.4	76.3
Real estate, renting & business activities	2.9	8.5	12.3	76.3
Education	0.4	4.0	10.5	85.1
Health & social work	4.2	6.9	14.7	74.2
Community, social & personal services	0.0	2.7	16.7	80.6

2003

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**Table 37: Percent Distribution of Economical Establishments in the Palestinian Territory by the Used Container Volume and Region, 2003**

Region	Container volume (m <sup>3</sup> ) ( )			
	12 12 and more	12 -7	6 -4	3 -1
<b>Palestinian Territory</b>	<b>2.4</b>	<b>11.6</b>	<b>17.3</b>	<b>68.7</b>
<b>West Bank</b>	<b>1.1</b>	<b>8.6</b>	<b>15.7</b>	<b>74.6</b>
West Bank North	3.0	7.5	21.8	67.7
West Bank Middle	0.5	9.2	26.6	63.7
West Bank South	0.3	8.9	2.3	88.5
<b>Gaza Strip</b>	<b>6.2</b>	<b>21.3</b>	<b>22.4</b>	<b>50.1</b>

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2003

**Table 38: Percent Distribution of Economical Establishments in the Palestinian Territory by the Solid Waste Collection Place, Distance Between Establishment and Solid Waste Collection Place and Economic Activity, 2003**

Economic activity	() Distance between establishment and the solid waste collection place (m)			Outside establishment	Inside establishment square	Inside establishment building
	151 151 and more	150 - 51	50 50 and Less			
<b>Palestinian Territory</b>	<b>4.8</b>	<b>11.9</b>	<b>83.3</b>	<b>62.0</b>	<b>7.7</b>	<b>30.3</b>
Industrial activities	3.9	8.6	87.5	50.1	6.9	43.0
Constructions	4.6	17.3	78.1	59.8	7.8	32.4
Whole sale, retail & repairs	5.2	12.1	82.7	67.8	7.7	24.5
Hotels & restaurants	8.1	18.6	73.3	66.9	3.5	29.6
Transport, storage & communications	3.8	6.2	90.0	66.1	7.4	26.5
Real estate, renting & business activities	0.0	25.3	74.7	61.9	5.9	32.2
Education	6.5	10.8	82.7	60.9	20.7	18.4
Health & social work	4.9	11.1	84.0	59.0	6.9	34.1
Community, social & personal services	3.3	7.6	89.1	51.1	11.3	37.6

2003

**Table 39: Percent Distribution of Economical Establishments in the Palestinian Territory by the Waste Collection Place, Distance Between Establishment and Waste Collection Place and Region, 2003**

Region	() Distance between establishment and the solid waste collection place (m)			Outside establishment	Inside establishment square	Inside establishment building
	151 and more	150 - 51	50 and Less			
<b>Palestinian Territory</b>	<b>4.8</b>	<b>11.9</b>	<b>83.3</b>	<b>62.0</b>	<b>7.7</b>	<b>30.3</b>
<b>West Bank</b>	<b>3.1</b>	<b>9.8</b>	<b>87.1</b>	<b>68.0</b>	<b>8.1</b>	<b>23.9</b>
West Bank North	4.6	8.9	86.5	67.0	8.5	24.5
West Bank Middle	0.8	10.6	88.6	62.6	4.9	32.5
West Bank South	2.6	10.4	87.0	73.4	10.1	16.5
<b>Gaza Strip</b>	<b>10.9</b>	<b>19.4</b>	<b>69.7</b>	<b>47.3</b>	<b>6.8</b>	<b>45.9</b>

2003

**Table 40: Percent Distribution of Economical Establishments in the Palestinian Territory by the Doer of Solid Waste Disposal and Economic Activity, 2003**

Economic activity	Others	Private contractor	Local Authority	The establishment
<b>Palestinian Territory</b>	<b>3.6</b>	<b>0.9</b>	<b>76.1</b>	<b>19.4</b>
Industrial activities	4.8	2.0	63.9	29.3
Constructions	2.3	1.9	74.0	21.8
Whole sale, retail & repairs	3.9	0.0	78.8	17.3
Hotels & restaurants	2.5	0.0	79.3	18.2
Transport, storage & communications	3.5	0.6	79.7	16.2
Real estate, renting & business activities	0.0	4.0	87.0	9.0
Education	2.0	1.8	84.0	12.2
Health & social work	1.0	1.5	77.6	19.9
Community, social & personal services	3.9	2.3	83.5	10.3

2003

**Table 41: Percent Distribution of Economical Establishments in the Palestinian Territory by the Doer of Solid Waste Disposal and Region, 2003**

Region	Others	Private contractor	Local Authority	The establishment
<b>Palestinian Territory</b>	<b>3.6</b>	<b>0.9</b>	<b>76.1</b>	<b>19.4</b>
<b>West Bank</b>	<b>2.3</b>	<b>0.9</b>	<b>82.4</b>	<b>14.4</b>
West Bank North	1.2	0.0	89.0	9.8
West Bank Middle	0.5	0.7	88.6	10.2
West Bank South	5.1	2.4	68.8	23.7
<b>Gaza Strip</b>	<b>6.8</b>	<b>0.7</b>	<b>60.8</b>	<b>31.7</b>

2003

**Table 42: Percent Distribution of Economical Establishments in the Palestinian Territory by the Solid Waste Final Disposal Place and Economic Activity, 2003**

Economic activity	Others	Disposed randomly	Private dumping site	Local authority dumping site
<b>Palestinian Territory</b>	<b>2.8</b>	<b>3.0</b>	<b>4.1</b>	<b>90.1</b>
Industrial activities	11.7	3.4	8.9	76.0
Constructions	0.3	2.7	4.2	92.8
Whole sale, retail & repairs	0.0	3.7	3.0	93.3
Hotels & restaurants	0.0	2.7	0.1	97.2
Transport, storage & communications	0.8	2.0	3.3	93.9
Real estate, renting & business activities	4.0	0.0	0.0	96.0
Education	0.0	1.8	4.9	93.3
Health & social work	1.4	0.0	1.5	97.1
Community, social & personal services	0.0	2.0	2.3	95.7

2003

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**Table 43: Percent Distribution of Economical Establishments in the Palestinian Territory by the Solid Waste Final Disposal Place and Region, 2003**

Region	Others	Disposed randomly	Private dumping site	Local Authority dumping site
<b>Palestinian Territory</b>	<b>2.8</b>	<b>3.0</b>	<b>4.1</b>	<b>90.1</b>
<b>West Bank</b>	<b>2.3</b>	<b>3.2</b>	<b>3.7</b>	<b>90.8</b>
West Bank North	1.2	3.0	4.2	91.6
West Bank Middle	1.0	3.3	0.2	95.5
West Bank South	4.6	3.4	5.7	86.3
<b>Gaza Strip</b>	<b>4.4</b>	<b>2.5</b>	<b>4.7</b>	<b>88.4</b>

:44

2003

**Table 44: Percent Distribution of Economical Establishments in the Palestinian Territory by the Periodicity of Non-Separated Solid Waste Collection and Economic Activity, 2003**

Economic activity	Periodicity (weekly) ( )		
	7 7 times and more	6 - 4	3 1 From 1 to 3 times
<b>Palestinian Territory</b>	<b>18.4</b>	<b>50.0</b>	<b>31.6</b>
Industrial activities	7.1	56.9	36.0
Constructions	1.9	56.2	41.9
Whole sale, retail & repairs	25.2	43.5	31.3
Hotels & restaurants	36.0	51.7	12.3
Transport, storage & communications	20.3	44.2	35.5
Real estate, renting & business activities	6.0	41.7	52.3
Education	6.5	77.9	15.6
Health & social work	5.0	69.0	26.0
Community, social & personal services	14.7	58.1	27.2

2003

**Table 45: Percent Distribution of Economical Establishments in the Palestinian Territory by the Periodicity of Non-Separated Solid Waste Collection and Region, 2003**

Region	Periodicity (weekly)			( )
	7 7 times and more	6 -4	3 1 From 1 to 3 times	
<b>Palestinian Territory</b>	<b>18.4</b>	<b>50.0</b>	<b>31.6</b>	
<b>West Bank</b>	<b>15.4</b>	<b>48.5</b>	<b>36.1</b>	
West Bank North	9.3	41.5	49.2	
West Bank Middle	21.2	63.8	15.0	
West Bank South	19.0	46.5	34.5	
<b>Gaza Strip</b>	<b>26.1</b>	<b>53.8</b>	<b>20.1</b>	

2003

**Table 46: Percent Distribution of Economical Establishments in the Palestinian Territory by The Effect of Al-Aqsa Intifada on the Economical Establishments and Economic Activity, 2003**

Economic activity	Type of effect		Presence of intifada effect
	Consumed water decrease	Consumed water increase	
<b>Palestinian Territory</b>	<b>98.8</b>	<b>1.2</b>	<b>15.1</b>
Industrial activities	99.9	0.1	21.1
Constructions	94.3	5.7	20.5
Whole sale, retail & repairs	100.0	0.0	9.7
Hotels & restaurants	100.0	0.0	34.1
Transport, storage & communications	89.5	10.5	17.0
Real estate, renting & business activities	100.0	0.0	9.0
Education	90.7	9.3	26.7
Health & social work	94.8	5.2	21.3
Community, social & personal services	99.8	0.2	23.5



2003

**Table 47: Percent Distribution of Economical Establishments in the Palestinian Territory by Effect of Al-Aqsa Intifada on the Consumed Water Quantity in the Economical Establishments and Region, 2003**

Region	Type of effect		Presence of intifada effect
	Consumed water decrease	Consumed water increase	
<b>Palestinian Territory</b>	<b>98.8</b>	<b>1.2</b>	<b>15.1</b>
<b>West Bank</b>	<b>99.2</b>	<b>0.8</b>	<b>15.5</b>
West Bank North	96.9	3.1	6.6
West Bank Middle	99.3	0.7	17.5
West Bank South	100.0	0.0	26.1
<b>Gaza Strip</b>	<b>97.8</b>	<b>2.2</b>	<b>14.0</b>

2003

**Table 48: Percent Distribution of Economical Establishments in the Palestinian Territory by Effect of Al-Aqsa Intifada on the Wastewater Treatment in Economical Establishments and Region, 2003**

Region	Type of effect		Presence of intifada effect
	Treatment process paused	Treated quantity decrease	
<b>Palestinian Territory</b>	<b>34.5</b>	<b>65.5</b>	<b>0.5</b>
<b>West Bank</b>	<b>34.8</b>	<b>65.2</b>	<b>0.6</b>
West Bank North	0.0	100.0	0.9
West Bank Middle	96.4	3.6	1.0
West Bank South	50.0	50.0	0
<b>Gaza Strip</b>	<b>0.0</b>	<b>100.0</b>	<b>0</b>

2003

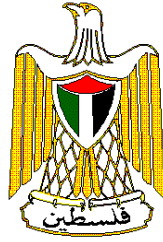
**Table 49: Percent Distribution of Economical Establishments in the Palestinian Territory by Effect of Al-Aqsa Intifada on the Solid Waste Separation in Economical Establishments and Region, 2003**

Region	Type of effect		Presence of intifada effect
	Separation process paused	separated components decrease	
<b>Palestinian Territory</b>	<b>0.5</b>	<b>99.5</b>	<b>1.7</b>
<b>West Bank</b>	<b>0.8</b>	<b>99.2</b>	<b>1.4</b>
West Bank North	0.9	99.1	1.9
West Bank Middle	0.5	99.5	2.2
West Bank South	-	-	-
<b>Gaza Strip</b>	<b>0.0</b>	<b>100.0</b>	<b>2.4</b>

2003

**Table 50: Percent Distribution of Economical Establishments in the Palestinian Territory by Effect of Al-Aqsa Intifada on the Solid Waste Treatment in Economical Establishments and Region, 2003**

Region	Type of effect			Presence of intifada effect
	Treatment method changed	Treatment process paused	Treated components decrease	
<b>Palestinian Territory</b>	<b>0.4</b>	<b>0.4</b>	<b>99.2</b>	<b>0.5</b>
<b>West Bank</b>	<b>0.4</b>	<b>0.4</b>	<b>99.2</b>	<b>0.7</b>
West Bank North	0.6	0.7	98.7	0.9
West Bank Middle	0.0	0.0	100.0	1.1
West Bank South	-	-	-	-
<b>Gaza Strip</b>	<b>0.0</b>	<b>0.0</b>	<b>100.0</b>	<b>0</b>



# **Palestinian Central Bureau of Statistics**

## **Environmental Economic Survey, 2003 Main Findings**

**November, 2003**

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**The success of the Palestinian Central Bureau of Statistics' fieldwork teams could not be possible without the kind reception and full cooperation of owners and managers of the targeted establishments. PCBS expresses its gratitude to all of them and appreciates their commitment to bringing this achievement into light.**



## **Note to the Users**

A set of special symbols were used in the tables of this report. The representation of these symbols are:

(.) Data not available

(0) less than half of the unit





## **Preface**

The world attention increased to provide environmental statistical data on the economical sector. Providing such data will participate in policy making and legislation that will reduce the pressure on the environment. As in the rest of the world, the attention has greatly increased in Palestine to provide such data after many years of environment negligence and the absence of standards and rules during the period of the Israeli occupation.

This report is one of a series of expected reports to be published by the PCBS on the environment according to the sub master plan for the Environment Statistical Department, as a tool for describing the status of environment in the Palestinian Territory.

This report handles the main results of the economic environmental survey that has been conducted in parallel with the economic survey series during the period from 10/06/2003 to 10/07/2003, knowing that this survey is implemented for the first time in 2001.

The main objective of this survey is to provide reliable data of environmental reality on the economic establishments in the Palestinian Territory, including the methods used to handle the solid waste and wastewater. It includes also the role of the local authority in providing the suitable environment that will reduce the negative effect of the different types of pollution on the household sector.

This report presents statistical data of water consumption at the economic establishments by water source, the methods of solid waste disposal and their main components, and the disposal of wastewater.

PCBS hopes that the main findings of this survey will contribute to improve the environmental status and stopping the random depletion of natural resources, in addition to providing reliable and useful statistics for Palestinian planners and decision-makers.

**November, 2003**

**Hasan Abu-Libdeh, Ph.D.**  
**President**



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## **Executive Summary**

Results of Economical Environmental Survey 2003 show that The quantity of consumed water was 938 thousands m<sup>3</sup>/month in the economical establishments, of which 413.4 thousand cubic meters consumed in the Industrial sector establishments. Also data show that Water network is the main sources of obtaining water for activity uses in 84.3% of the establishments in the Palestinian Territory.

Results show that Wastewater network is the main method of disposing wastewater for 72.7% of the establishments. Concerning the wastewater treatment, data show that More than 94% of establishments do not treat the produced wastewater in their establishments.

Data show that More than 42 thousand tons of solid waste produced monthly in the establishments, and More than 90% of the establishments do not separate solid waste, in addition to that food waste is the common separated component and most of the produced solid waste collected in normal bags.

Concerning solid waste disposal, data show that more than two-third of the economical establishments dispose its solid waste 4 times a week, and the common solid waste transportation method is the manual one. Also, data show that 98.6% of the establishments do not treat solid waste, and more than 75% of the establishments that used the treatment process treat its solid waste by itself.

Data show that, More than 50% of the establishments use municipality open container, and the common type of these containers is the Metal one. The common solid waste disposal places are the local authority dumping sites.

The establishments faced many problems due to the Israeli destruction of the infrastructure of the Palestinian community during Al-Aqsa intifada, the most important problem was the decrease in the number of separated solid waste components which represents a problem for 98.8% of the establishments. The most affected sector from the reduction of consumed water quantities was the hotels and restaurants sector (34.1%).



## Summary

### 1. 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, beside the effects of the Israeli measures on the establishments during the Al-Aqsa Intifada.

### 2. 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.

### **3. Main Findings:**

This section presents the main findings of the report, including main environmental indicators of the economic establishments in the Palestinian Territory.

#### **3.1 Water**

##### **The economical establishments consumed around 938 thousands m<sup>3</sup>/month**

Results show that the consumed water quantities by the establishments in the Palestinian Territory in 2003 was 937.8 thousand cubic meters per month, distributed into different types of activities. The water quantity consumed by the Industrial sector establishments was 413.4 thousand cubic meters per month comparing with 6.3 thousand cubic meters per month for transport, storage and communication establishments, and the remaining amount was distributed among the other activities. The consumed water quantities is distributed into 448.0 thousand cubic meters per month for normal uses, and 489.8 thousand cubic meters per month for industrial activity uses. Geographically, the consumed water quantities by the establishments in the West Bank was 677.2 thousand cubic meters per month, and 260.6 thousand cubic meters per month in Gaza Strip.

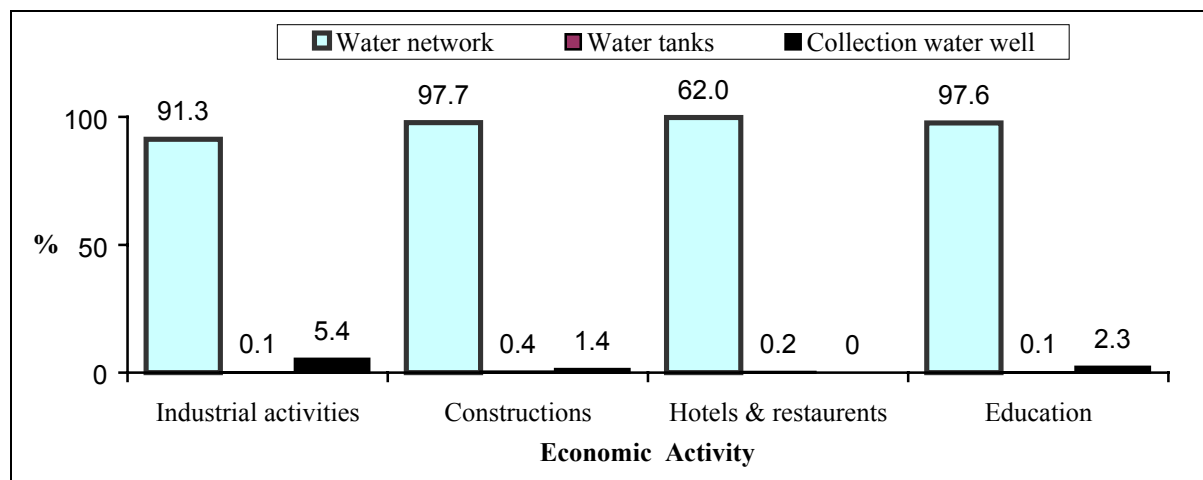
Results show that the consumed water quantities by the establishments in the Palestinian Territory in 2001 was 2,549.0 thousand cubic meters per month.

Certain establishments show major increase in water consumption quantities between the years 2003 and 2001 due to the extending of their economic activities and adding of new production lines, while other establishments show a reduction in the consumed water quantities which is related to the deterioration of the economic situation, also due to the closure and curfew.

##### **Water network is the sources of water**

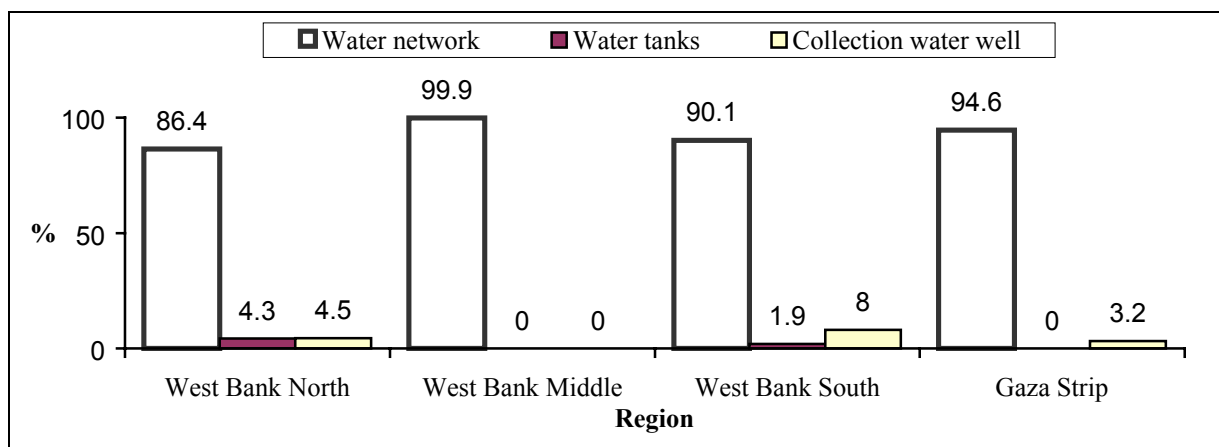
Results show that the main source of obtaining water for normal uses in the establishments in the Palestinian Territory in 2003 was the public water network, which amount 93.2% comparing with 4.1% of the establishments use collection water wells. The percent of establishment that obtain water from the public water network in the industrial activities' establishments was 91.3% comparing with 100.0% of the establishment in the real estate, renting and business sector.

**Figure 1: Percent of Establishments in the Palestinian Territory by Means of Obtaining Water for Normal Uses and Economic Activity, 2003**



Geographically, The percent of establishments that obtain water from public water network for the normal uses in the West Bank was 92.6% of the establishments, comparing with 94.6% in Gaza Strip. The Middle of West Bank ranked as the first region that obtain water for normal uses from the public water network and amount to 99.9% comparing with 86.4% of establishments in the North of West Bank.

**Figure 2: Percent of Establishments in the Palestinian Territory by Means of Obtaining Water for Normal Uses and Region, 2003**



The percent of establishments that obtain water from public water network for activity uses in the Palestinian Territory was 84.3%, of which 81.0% of the establishments in the West Bank (79.4% in the North of West Bank, and 76.4% in the South of West Bank), and 96.9% in Gaza Strip.

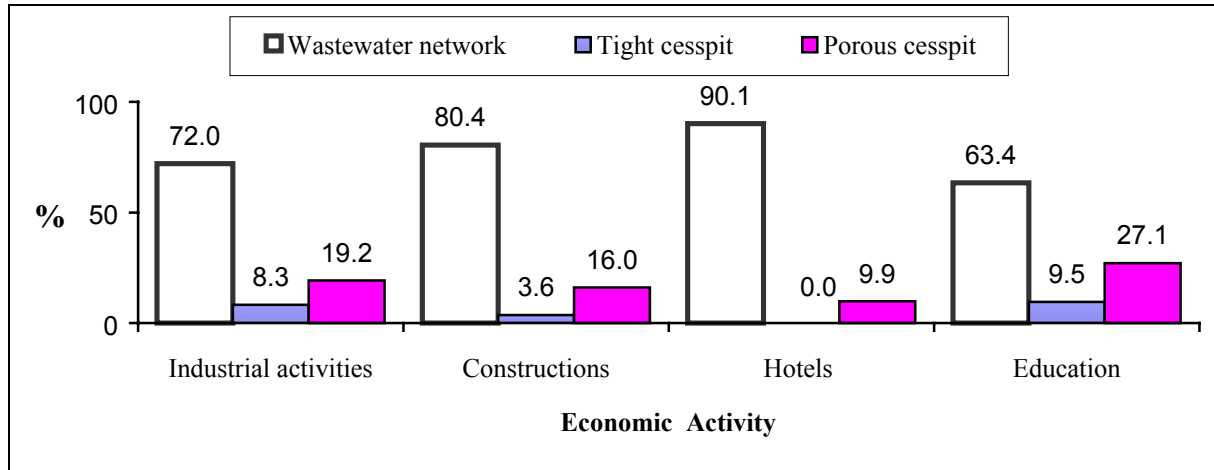
### 3.2 Wastewater

#### Wastewater network is the main method of disposing wastewater

Results show that the percent of establishments in the Palestinian Territory in 2003 year that use wastewater network to dispose normal wastewater was 72.7%, comparing with 23.6% use porous cesspits. The percent of establishment that use wastewater network was distributed in

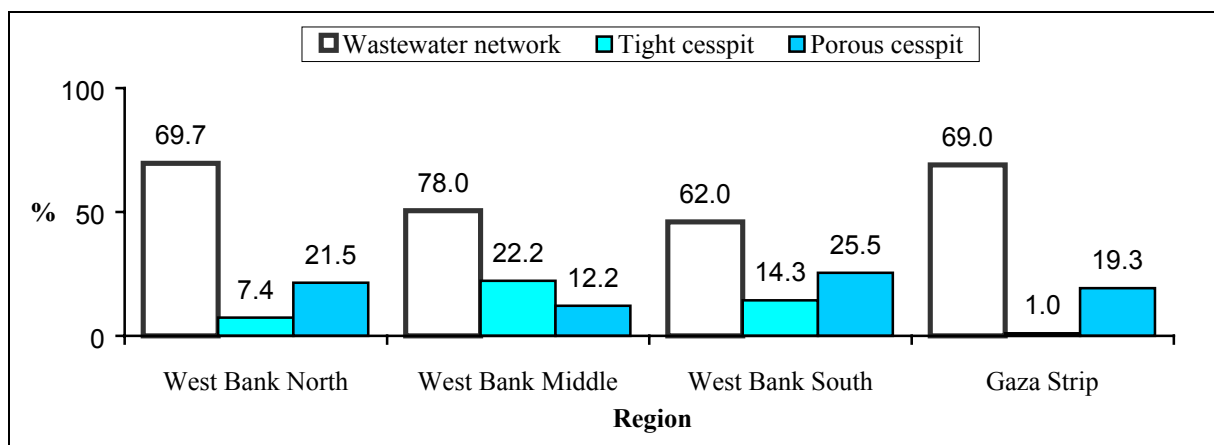
the economical activities as 90.1% for the hotels and restaurants establishments and 63.4% for education establishments.

**Figure 3: Percent of Establishments in the Palestinian Territory by Their Normal Wastewater Disposal Method and Economic Activity, 2003**



Geographically, the percent of establishments that use wastewater network to dispose normal wastewater in the West Bank was 66.2% of the total establishments and 87.1% of the total establishments in Gaza strip. Also, the percent of establishments that use wastewater network to dispose its activity wastewater in the Palestinian Territory was 64.0% of which 62.8% of the total establishments in the West Bank and 69.0% of the total establishments in Gaza strip. In the West Bank region, the percent of establishments that use wastewater network to dispose its activity wastewater was 69.7% of the total establishments in West Bank North, comparing with 50.5% of the total establishments in West Bank Middle and 46.0% of the total establishments in West Bank South.

**Figure 4: Percent of Establishments in the Palestinian Territory by Activity Wastewater Disposal Method and Region, 2003**





**More than 94% of establishments do not treat wastewater**

The results show that 5.7% of the establishments treat the wastewater produced by it’s activity in the Palestinian Territory in 2003, of which 7.1% of the total establishments in the West Bank and 0.3% of the total establishments in Gaza Strip. The highest percent of establishments that treat its wastewater was in the South of West Bank and amount 21.0% of the total establishments comparing with 12.7% of the total establishments in the Middle of West Bank.

**3.3 Solid Waste**

**3.3.1 Solid Waste Produced Quantities**

**More than 42 thousand ton of solid waste produced monthly in the establishments**

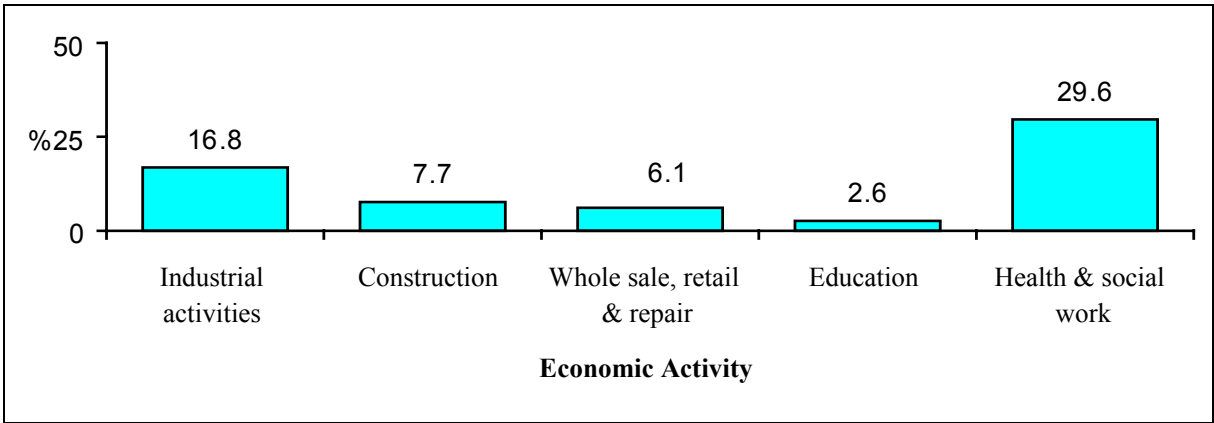
Results show that the monthly produced solid waste quantities from the establishments in the Palestinian Territory in 2003 was 42.0 thousand ton, most of this quantity was produced from Industrial activities establishments which amount 33.5 thousand ton comparing with 5.1 thousand ton in the construction sectors. These quantities distributed into 34.2 thousand ton in the West Bank and 7.8 thousand ton in Gaza Strip.

**3.3.2 Solid Waste Separation**

**More than 90% of the establishments do not separate solid waste**

The percent of establishments that separate solid waste in the Palestinian Territory in 2003 was 9.6% of the establishments, distributed into 16.8% for industrial activities establishments, and 0.1% for real estate, renting and business activities establishments. Geographically, these percents distributed into 6.4% of these establishments were in the West Bank and 17.5% in Gaza Strip.

**Figure 5: Percent of Establishments in the Palestinian Territory by Presence of Solid Waste Separation for Some Economic Activities, 2003**



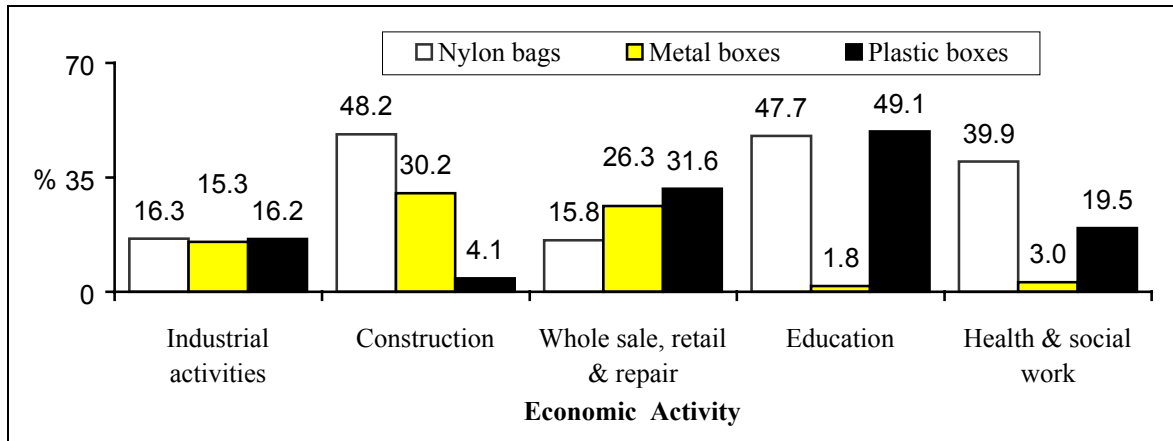
**Food waste is the common separated component.**

Results show that the food waste ranked as the first among the separated solid waste components, with a percent of 22.4% of the economical establishments in the Palestinian Territory in 2003, followed by the soil and stones (19.7%) and paper and cartoon (16.3%). Geographically, separation of paper and cartoon rank as the first among the separated solid waste components of the total establishments in the West Bank (23.4%), whereas food waste rank as the same in Gaza Strip (32.2%).

**Plastic bags are widely used in solid waste collection**

The percent of the establishments in the Palestinian Territory in 2003 that use plastic bags to put the collected separated solid waste in was 24.8%, comparing with 22.7% of the establishments use plastic boxes. Concerning the non-separated solid waste, the percent of the establishments that use plastic bags to put these wastes in was 66.8%, comparing with 14.0% of the establishments use plastic boxes.

**Figure 6: Percent of Establishments in the Palestinian Territory by Separated Solid Waste Collection Means and Economic Activity, 2003**



**More than two-third of the economical establishments dispose its solid waste 4 times a week.**

Data show that 26.4% of establishments in the Palestinian Territory in 2003 dispose separated solid waste less than or equal 3 times a week, comparing with 29.6% of the establishments dispose solid waste more than 7 times a week. Concerning the non-separated solid waste, the percent of the establishments that dispose these wastes less than or equal 3 times a week was 31.6%, comparing with 18.4% of the establishments dispose solid waste more than 7 times a week.

**The manual transportation of the solid waste is the common method**

Data show that 89.4% of the percent of establishments transport separated solid waste manually in the Palestinian Territory in 2003, comparing with 10.3% of the establishments transport separated solid waste by special tools. While 96.9% of establishment transport the non-separated solid waste manually, comparing with 1.8% of the establishments transport solid waste by special tools.

**3.3.3 Solid Waste Treatment**

**More than 98% of the establishments do not treat solid waste**

The results show that the percent of establishments that treat solid waste in the Palestinian Territory in 2003 was 1.4%, from which 2.9% industrial establishments. This percents is distributed into 1.7% in the West Bank and 0.7% in Gaza Strip. Data show that 68.0% of the establishments in the Palestinian Territory in 2003 use the open burning method in treating the solid waste, where 24.3% of the establishments use the mechanical treatment.

**More than 75% of the establishments treat its solid waste by itself**

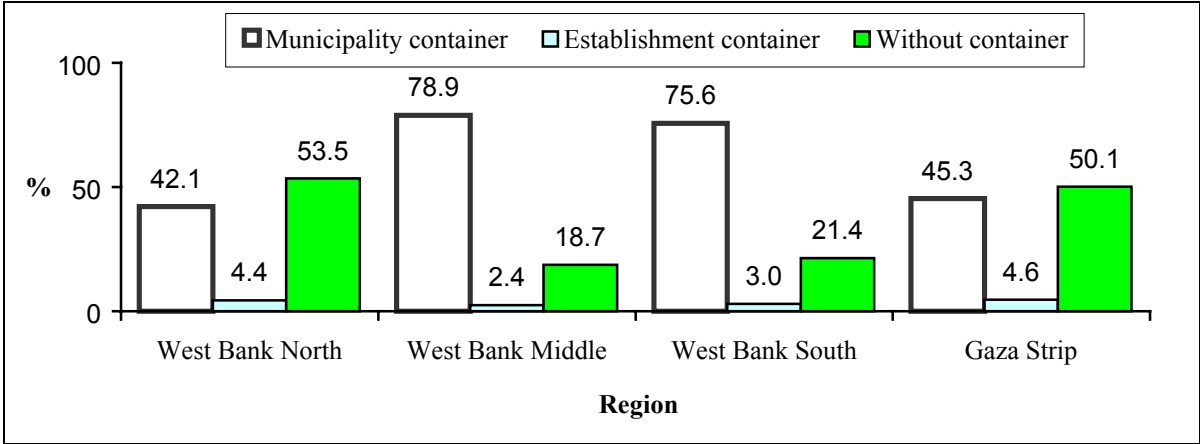
Data show that 75.2% of the establishments that treat solid waste in the Palestinian Territory in 2003 do the treatment by itself, comparing with 24.8% of the establishments say that the treatment process is done by another party. Geographically, these percents are distributed into 71.1% in the West Bank treat its solid waste by it self and 98.4% in Gaza Strip.

**3.3.4 Solid Waste Disposal**

**More than 50% of the establishments use municipality open container**

Data show that 52.2% of the establishments in the Palestinian Territory in 2003 use municipality open container for solid waste collection comparing with 39.2% of the establishments do not use containers. The percent of the establishments that use municipality open container for solid waste collection was 56.2% of the total establishments in the West Bank (76.1% of the total establishments in West Bank Middle, and 67.4% of the total establishments in West Bank South) comparing with 42.4% of the total establishments in Gaza Strip.

**Figure 7: Percent Distribution of Establishments in the Palestinian Territory by the Solid Waste Collection Mean and Region, 2003**



**Metal containers is the common type in solid waste collection**

Data show that 93.7% of the establishments in the Palestinian Territory in 2003 use metal containers for solid waste collection, of which 92.9% of the total establishments in the West Bank and 96.2% of the total establishments in Gaza Strip.

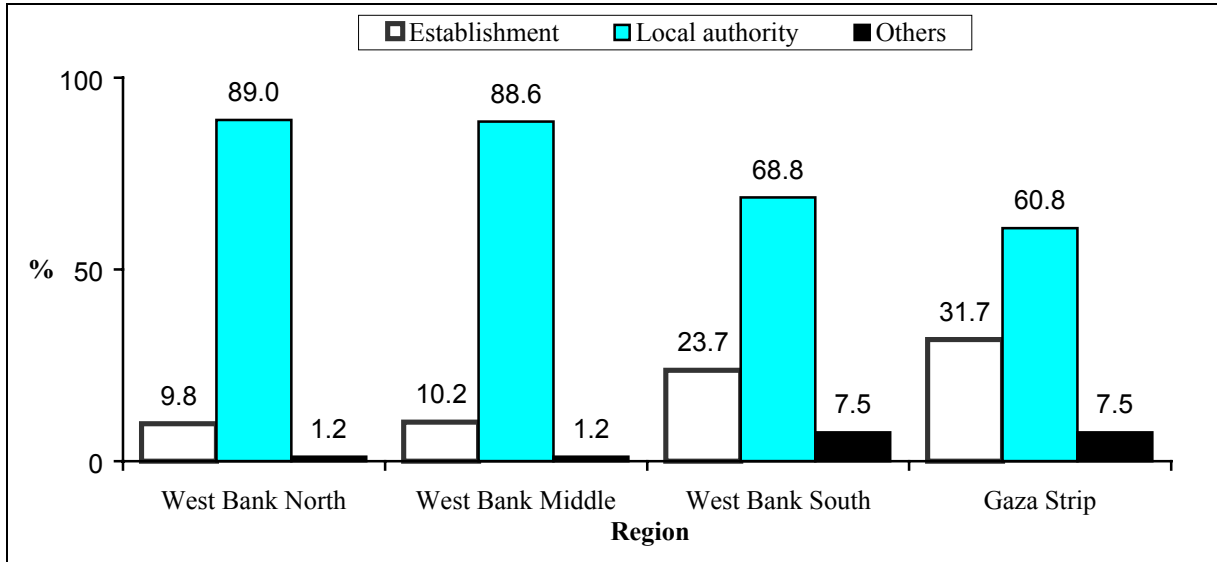
**More than 75% of the establishments served by local authority solid waste disposal services**

The percent of the establishments in the Palestinian Territory in 2003 that dispose its solid waste by itself was 19.4%, of which 29.3% in the industrial activities establishments, whereas the percent of the establishments which is served by local authority disposal services was 76.1% of which 63.9% in the industrial activities establishments. Also, data reveal that, 14.4% of the total establishments in the West Bank dispose its solid waste by itself (23.7% of the total establishments in West Bank South, and 10.2% of the total establishments in West Bank Middle) comparing with 31.7% of the total establishments in Gaza Strip.

**Common solid waste disposal places are the local authority dumping sites**

Data show that 90.1% of the establishments in the Palestinian Territory in 2003 dispose its solid waste in a local authority dumping sites, of which 97.2% hotels and restaurants establishments.

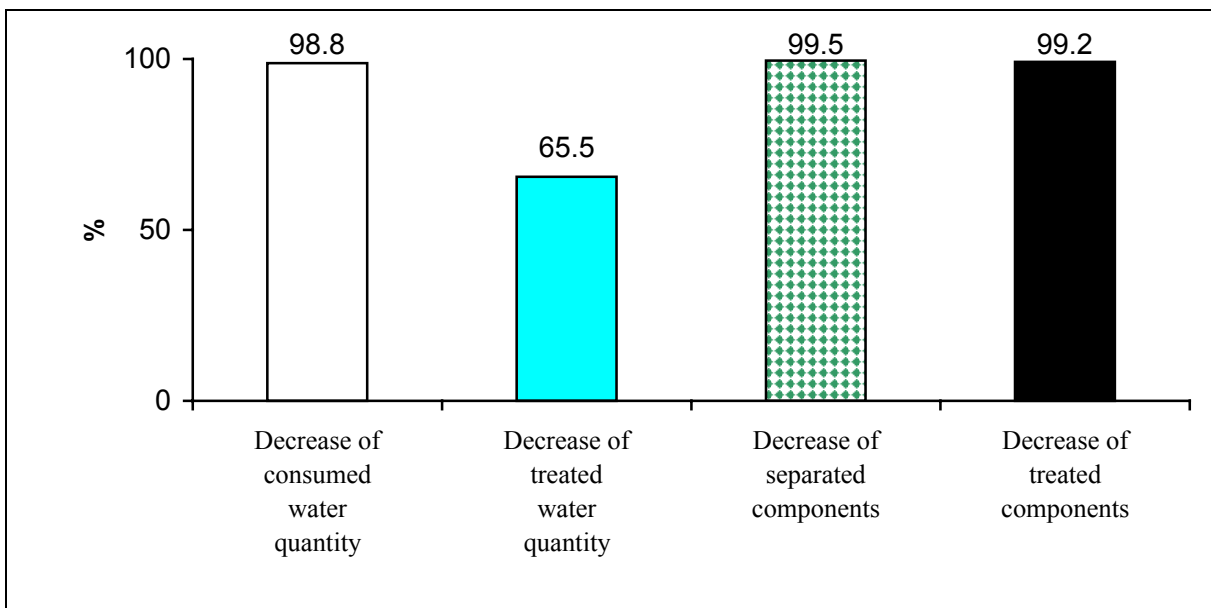
**Figure 8: Percent of Establishments in the Palestinian Territory by the Responsible Party for Solid Waste Disposal and Region, 2003**



**3.4 The Establishments Problems During Al–Aqsa Intifada**

Establishments faced many problems due to Israeli destruction of the infrastructure of the Palestinian community during Al–Aqsa intifada, the most important problem was the reduction in the number of separated solid waste components which considered as a problem for 98.8% of the establishments.

**Figure 9: Percent of Establishments in the Palestinian Territory by the Most Important Problems During Al-Aqsa Intifada, 2003**



## **4. Methodology**

### **4.1 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.

### **4.2 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.

### **4.3 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.

#### **4.3.1 Target Population**

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

#### **4.3.2 Sample Frame**

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

#### **4.3.3 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.

## **4.4 Fieldwork**

### **4.4.1 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.

#### 4.4.2 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.

#### 4.5 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.

#### 5. 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.

#### Responding rates:

The results of responding were divided into the following:

<b>Interview result</b>	<b>Frequency</b>	<b>Percent, %</b>
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
<b>Total</b>	<b>2548</b>	<b>100.0</b>

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





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