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| Category 3 | 16.8%      |       | Category 4 | 93.3%      | U     |
| Category 5 | 52.2%      | P     | Category 6 | 19.7%      | U     |
| Category 7 | 12.2%      | P     | Category 8 |            | U     |

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# Tables



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**Table 1: Percentage of Households by Region, the Means of Obtaining Water, and Average Monthly Household Consumption (m<sup>3</sup>)\***

| Region                       | Spring                                | نوع او عين                             | Water Tank                            | تتكات مياه                             | Domestic well                         | بئر منزلي                              | Net work                              | شبكة مياه عامة                         | Number of households |  |
|------------------------------|---------------------------------------|----------------------------------------|---------------------------------------|----------------------------------------|---------------------------------------|----------------------------------------|---------------------------------------|----------------------------------------|----------------------|--|
|                              | Average monthly household consumption | نسبة الأسر<br>Percentage of households | Average monthly household consumption | نسبة الأسر<br>Percentage of households | Average monthly household consumption | نسبة الأسر<br>Percentage of households | Average monthly household consumption | نسبة الأسر<br>Percentage of households |                      |  |
| West Bank - North            | 10.4                                  | 1.7                                    | 8.3                                   | 47.8                                   | 13.2                                  | 10.7                                   | 20.4                                  | 73.5                                   | 1022                 |  |
| West Bank - Center           | 11.6                                  | 1.7                                    | 8.9                                   | 11.1                                   | 6.4                                   | 1.0                                    | 19.6                                  | 96.9                                   | 649                  |  |
| West Bank - South            | 6.3                                   | 0.5                                    | 6.2                                   | 61.8                                   | 10.3                                  | 10.5                                   | 19.1                                  | 78.7                                   | 630                  |  |
| <b>Total West Bank</b>       | 10.5                                  | 1.4                                    | 7.5                                   | 39.9                                   | 11.9                                  | 7.6                                    | 19.8                                  | 82.2                                   | <b>2301</b>          |  |
| <b>Total Gaza Strip</b>      | -                                     | -                                      | 31.3                                  | 1.9                                    | -                                     | 0.1                                    | 24.7                                  | 97.6                                   | <b>918</b>           |  |
| <b>Palestinian Territory</b> | 10.5                                  | 1.1                                    | 7.9                                   | 30.7                                   | 11.8                                  | 5.8                                    | 21.2                                  | 85.9                                   | <b>3219</b>          |  |

\* Consumption quantities bear error possibility due to respondents estimates

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**Table 2: Percentage of Households by Region and Uses of Domestic Water\***

| Region                       | Others      | Industrial | Domestic     | Number of households |  |
|------------------------------|-------------|------------|--------------|----------------------|--|
| West Bank - North            | 28.2        | 0.3        | 99.2         | 1022                 |  |
| West Bank - Center           | 22.0        | 0.3        | 99.7         | 649                  |  |
| West Bank - South            | 15.6        | 1.2        | 99.6         | 630                  |  |
| <b>Total West Bank</b>       | <b>23.0</b> | <b>0.6</b> | <b>99.8</b>  | <b>2301</b>          |  |
| <b>Total Gaza Strip</b>      | <b>3.8</b>  | <b>0.0</b> | <b>100.0</b> | <b>918</b>           |  |
| <b>Palestinian Territory</b> | <b>18.3</b> | <b>0.4</b> | <b>99.8</b>  | <b>3219</b>          |  |

\*The household could have more than one use of domestic water

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**Table 3: Percent Distribution of Households by Region and Household Evaluation of Water Quality**

| Region                       | المجموع<br>Total | سيئة<br>Bad | متوسطة<br>Fairly Good | جيدة<br>Good | عدد الأسر<br>Number of households | المنطقة |
|------------------------------|------------------|-------------|-----------------------|--------------|-----------------------------------|---------|
| West Bank - North            | 100              | 1.3         | 16.5                  | 82.2         | 1022                              |         |
| West Bank - Center           | 100              | 0.6         | 9.1                   | 90.3         | 649                               |         |
| West Bank - South            | 100              | -           | 12.5                  | 87.5         | 630                               |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>0.8</b>  | <b>13.1</b>           | <b>86.1</b>  | <b>2301</b>                       |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>30.7</b> | <b>54.3</b>           | <b>15.0</b>  | <b>918</b>                        |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>8.0</b>  | <b>23.1</b>           | <b>68.9</b>  | <b>3219</b>                       |         |

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**Table 4: Percent Distribution of Households by Region and the Solid Waste Disposal Part**

| Region                       | المجموع<br>Total | الجهة التي تقوم بعملية الجمع<br>Solid Waste Disposal Part |                      |                               |                                      | عدد الأسر<br>Number of households | المنطقة |
|------------------------------|------------------|-----------------------------------------------------------|----------------------|-------------------------------|--------------------------------------|-----------------------------------|---------|
|                              |                  | أخرى<br>Others                                            | الاثنتين معا<br>Both | سلطة محلية<br>Local authority | أحد أفراد المنزل<br>Household member |                                   |         |
| West Bank - North            | 100              | 0.5                                                       | 1.1                  | 80.7                          | 17.7                                 | 1022                              |         |
| West Bank - Center           | 100              | 2.6                                                       | 0.4                  | 74.8                          | 22.2                                 | 649                               |         |
| West Bank - South            | 100              | 1.8                                                       | 4.5                  | 65.5                          | 28.2                                 | 630                               |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>1.4</b>                                                | <b>1.8</b>           | <b>74.9</b>                   | <b>21.9</b>                          | <b>2301</b>                       |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>0.9</b>                                                | <b>4.7</b>           | <b>52.6</b>                   | <b>41.8</b>                          | <b>918</b>                        |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>1.3</b>                                                | <b>2.5</b>           | <b>69.5</b>                   | <b>26.7</b>                          | <b>3219</b>                       |         |

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**Table 5: Percent Distribution of Not Served Households by Region and Most Important Disposal Method of Solid Wastes**

| Region                       | المجموع<br>Total | أهم طريقة للتخلص من النفايات الصلبة<br>Most Important Disposal Method of Solid Wastes |                                               |                 |                                                             | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|-----------------|-------------------------------------------------------------|--------------------------------------|---------|
|                              |                  | أخرى<br>Others                                                                        | إلقاؤها في مكب النفايات<br>Thrown into a dump | حرقها<br>Burned | إلقائها في أقرب حاوية<br>Thrown in the nearest<br>container |                                      |         |
| West Bank - North            | 100              | 8.2                                                                                   | 11.7                                          | 49.6            | 30.5                                                        | 196                                  |         |
| West Bank - Center           | 100              | 17.1                                                                                  | 2.2                                           | 23.5            | 57.2                                                        | 191                                  |         |
| West Bank - South            | 100              | 2.6                                                                                   | 36.6                                          | 53.4            | 7.4                                                         | 144                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>9.4</b>                                                                            | <b>16.8</b>                                   | <b>42.1</b>     | <b>31.7</b>                                                 | <b>531</b>                           |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>1.1</b>                                                                            | <b>4.0</b>                                    | <b>1.6</b>      | <b>93.3</b>                                                 | <b>393</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>6.2</b>                                                                            | <b>12.1</b>                                   | <b>27.2</b>     | <b>54.5</b>                                                 | <b>924</b>                           |         |

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**Table 6: Percent Distribution of Not Served Households by Region and Second Important Disposal Method of Solid Wastes**

| Region                       | المجموع<br>Total | أهم طريقة للتخلص من النفايات الصلبة<br>Most Important Disposal Method of Solid Wastes |                   |                                        |                                         |                 |                 |                                                             | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|---------------------------------------------------------------------------------------|-------------------|----------------------------------------|-----------------------------------------|-----------------|-----------------|-------------------------------------------------------------|--------------------------------------|---------|
|                              |                  | أخرى<br>Others                                                                        | استعمالها<br>Used | إلقاءها بشكل عشوائي<br>Thrown randomly | إلقاءها في مكب<br>Thrown into a<br>dump | دفنها<br>Buried | حرقها<br>Burned | إلقائها في أقرب حاوية<br>Thrown in the<br>nearest container |                                      |         |
| West Bank - North            | 100              | 18.7                                                                                  | 8.3               | 16.8                                   | 15.8                                    | 3.1             | 31.8            | 5.5                                                         | 196                                  |         |
| West Bank - Center           | 100              | 3.8                                                                                   | 0.8               | 22.3                                   | 30.5                                    | 3.3             | 37.7            | 1.6                                                         | 191                                  |         |
| West Bank - South            | 100              | 5.3                                                                                   | 27.8              | 21.3                                   | 24.0                                    | 0.0             | 15.8            | 5.8                                                         | 144                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>6.4</b>                                                                            | <b>12.9</b>       | <b>21.2</b>                            | <b>25.9</b>                             | <b>1.9</b>      | <b>27.9</b>     | <b>3.8</b>                                                  | <b>531</b>                           |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>3.5</b>                                                                            | <b>0.0</b>        | <b>3.0</b>                             | <b>79.1</b>                             | <b>1.5</b>      | <b>11.4</b>     | <b>1.5</b>                                                  | <b>393</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>5.0</b>                                                                            | <b>6.5</b>        | <b>12.2</b>                            | <b>52.2</b>                             | <b>1.7</b>      | <b>19.7</b>     | <b>2.7</b>                                                  | <b>924</b>                           |         |

جدول 7: التوزيع النسبي للأسر حسب المنطقة ودورية جمع النفايات الصلبة من قبل السلطة المحلية

Table 7: Percent Distribution of Households by Region and Periodicity of Solid Wastes Collection by Local Authority

| Region                       | المجموع<br>Total | عدد مرات الجمع في الأسبوع<br>Number of Weekly Times of Collection |             |            |            |             |             |             |            | عدد الأسر<br>Number of<br>households | المنطقة |
|------------------------------|------------------|-------------------------------------------------------------------|-------------|------------|------------|-------------|-------------|-------------|------------|--------------------------------------|---------|
|                              |                  | 7                                                                 | 6           | 5          | 4          | 3           | 2           | 1           | 0          |                                      |         |
| West Bank - North            | 100              | 0.8                                                               | 31.6        | 0.5        | 2.1        | 14.4        | 40.7        | 5.7         | 4.2        | 826                                  |         |
| West Bank - Center           | 100              | 13.7                                                              | 22.7        | 0.7        | 5.6        | 17.0        | 19.6        | 19.3        | 1.4        | 458                                  |         |
| West Bank - South            | 100              | 0.2                                                               | 8.6         | 0.9        | 4.6        | 17.1        | 35.9        | 31.3        | 1.4        | 486                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>4.6</b>                                                        | <b>23.4</b> | <b>0.7</b> | <b>3.8</b> | <b>15.8</b> | <b>33.1</b> | <b>16.0</b> | <b>2.6</b> | <b>1770</b>                          |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>3.0</b>                                                        | <b>38.9</b> | <b>8.3</b> | <b>6.1</b> | <b>30.5</b> | <b>7.9</b>  | <b>4.7</b>  | <b>0.6</b> | <b>525</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>4.4</b>                                                        | <b>26.4</b> | <b>2.1</b> | <b>4.2</b> | <b>18.7</b> | <b>28.2</b> | <b>13.8</b> | <b>2.2</b> | <b>2295</b>                          |         |

جدول 8: التوزيع النسبي للأسر حسب توفر مكان قريب من المنزل لجمع النفايات الصلبة

Table 8: Percent Distribution of Households by Availability of a Close Solid Wastes Collection Location

| Region                       | المجموع<br>Total | Existence of Solid Waste Collection Location |                        |                                                                     | المنطقة |
|------------------------------|------------------|----------------------------------------------|------------------------|---------------------------------------------------------------------|---------|
|                              |                  | لا يوجد مكان للجمع<br>No                     | يوجد مكان للجمع<br>Yes | توفر مكان لجمع النفايات الصلبة<br>عدد الأسر<br>Number of households |         |
| West Bank - North            | 100              | 80.4                                         | 19.6                   | 1022                                                                |         |
| West Bank - Center           | 100              | 79.4                                         | 20.6                   | 649                                                                 |         |
| West Bank - South            | 100              | 86.7                                         | 13.3                   | 630                                                                 |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>81.7</b>                                  | <b>18.3</b>            | <b>2300</b>                                                         |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>38.3</b>                                  | <b>61.7</b>            | <b>918</b>                                                          |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>71.2</b>                                  | <b>28.8</b>            | <b>3219</b>                                                         |         |

جدول 9: التوزيع النسبي للأسر حسب المنطقة وأهم مكون للنفايات الصلبة

Table 9: Percent Distribution of Households by Region and Most Important Component of Solid Wastes

| Region                | المجموع | مكونات النفايات الصلبة |              |                   |               | عدد الأسر            | المنطقة |
|-----------------------|---------|------------------------|--------------|-------------------|---------------|----------------------|---------|
|                       | Total   | أخرى                   | حفاضات أطفال | ورق و كرتون       | مخلفات الطعام | Number of Households |         |
|                       |         | Others                 | Baby's nabs  | Paper and cartoon | Food wastes   |                      |         |
| West Bank - North     | 100     | 0.4                    | 2.1          | 1.3               | 96.2          | 1022                 |         |
| West Bank - Center    | 100     | 2.4                    | 5.2          | 7.8               | 84.6          | 649                  |         |
| West Bank - South     | 100     | 1.1                    | 5.2          | 11.6              | 82.1          | 630                  |         |
| Total West Bank       | 100     | 1.2                    | 3.9          | 6.0               | 88.9          | 2301                 |         |
| Total Gaza Strip      | 100     | 0.0                    | 0.0          | 0.0               | 100.0         | 918                  |         |
| Palestinian Territory | 100     | 1.0                    | 2.9          | 4.5               | 91.6          | 3219                 |         |

جدول 10: التوزيع النسبي للأسر حسب المنطقة وثاني أهم مكون للنفايات الصلبة

Table 10: Percent of Households by Region and Second Most Important Component of Solid Wastes

| Region                       | المجموع<br>Total | مكونات النفايات الصلبة<br>Solid Waste ( |                                                          |                             |                                      |                                  |                              | عدد الأسر<br>Number of<br>households | المنطقة |
|------------------------------|------------------|-----------------------------------------|----------------------------------------------------------|-----------------------------|--------------------------------------|----------------------------------|------------------------------|--------------------------------------|---------|
|                              |                  | أخرى<br>Others                          | أعشاب ومخلفات زراعية<br>Grass and agricultural<br>wastes | حفاضات أطفال<br>Baby's nabs | بلاستيك و مطاط<br>Plastic and rubber | ورق و كرتون<br>Paper and cartoon | مخلفات الطعام<br>Food wastes |                                      |         |
| West Bank - North            | 100              | 1.1                                     | 12.5                                                     | 41.4                        | 3.4                                  | 36.9                             | 4.7                          | 1022                                 |         |
| West Bank - Center           | 100              | 0.8                                     | 2.2                                                      | 9.4                         | 2.2                                  | 76.2                             | 9.2                          | 649                                  |         |
| West Bank - South            | 100              | 1.8                                     | 11.6                                                     | 36.3                        | 0.4                                  | 26.3                             | 23.6                         | 630                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>1.2</b>                              | <b>8.0</b>                                               | <b>26.9</b>                 | <b>2.1</b>                           | <b>50.4</b>                      | <b>11.4</b>                  | <b>2301</b>                          |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>10.8</b>                             | <b>6.9</b>                                               | <b>33.8</b>                 | <b>6.8</b>                           | <b>41.7</b>                      | <b>0.0</b>                   | <b>918</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>3.8</b>                              | <b>7.7</b>                                               | <b>28.9</b>                 | <b>3.5</b>                           | <b>48.0</b>                      | <b>8.1</b>                   | <b>3219</b>                          |         |

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**Table 11: Percent Distribution of Households by Region and existence of a Cesspit and Domestic Well**

| Region                | المجموع<br>Total | عدم وجود كلاهما<br>Not having both | وجود حفرة وبئر              | وجود بئر فقط       | وجود حفرة فقط         | عدد الأسر<br>Number of households | المنطقة |
|-----------------------|------------------|------------------------------------|-----------------------------|--------------------|-----------------------|-----------------------------------|---------|
|                       |                  |                                    | Having a cesspit and a well | Having a well only | Having a cesspit only |                                   |         |
| West Bank - North     | 100              | 31.2                               | 0.3                         | 17.8               | 50.7                  | 1022                              |         |
| West Bank - Center    | 100              | 39.7                               | 5.1                         | 35.2               | 20.0                  | 649                               |         |
| West Bank - South     | 100              | 3.8                                | 9.0                         | 29.7               | 57.5                  | 630                               |         |
| Total West Bank       | 100              | 26.7                               | 4.1                         | 26.4               | 42.8                  | 2301                              |         |
| Total Gaza Strip      | 100              | 57.3                               | 7.7                         | 34.8               | 0.2                   | 918                               |         |
| Palestinian Territory | 100              | 34.2                               | 4.9                         | 28.4               | 32.5                  | 3219                              |         |

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**Table 12: Percent Distribution of Households Having Cesspit and Well by Region and Location of Cesspit and Well**

| Region                       | المجموع<br>Total | على نفس المستوى<br>On the same level | البئر أعلى من الحفرة<br>Well above cesspit | البئر أخفض من الحفرة<br>Well below cesspit | عدد الأسر<br>Number of households | المنطقة |
|------------------------------|------------------|--------------------------------------|--------------------------------------------|--------------------------------------------|-----------------------------------|---------|
| West Bank - North            | 100              | 14.5                                 | 70.3                                       | 15.2                                       | 519                               |         |
| West Bank - Center           | 100              | 15.9                                 | 74.7                                       | 9.4                                        | 122                               |         |
| West Bank - South            | 100              | 5.8                                  | 77.5                                       | 16.7                                       | 377                               |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>11.6</b>                          | <b>73.5</b>                                | <b>14.9</b>                                | <b>1018</b>                       |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>-</b>                             | <b>-</b>                                   | <b>-</b>                                   | <b>2</b>                          |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>11.8</b>                          | <b>73.3</b>                                | <b>14.9</b>                                | <b>1020</b>                       |         |

Note: (-) insufficient number of observations

(-) :

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**Table 13: Percent Distribution of Households Having Cesspit and Well by Region and Distance Between Cesspit and Well(m)**

| Region                       | المجموع<br>Total | أكثر من 50<br>More than 50 | من 30-50<br>From 30-50 | أقل من 30<br>Less than 30 | عدد الأسر<br>Number of households |  |
|------------------------------|------------------|----------------------------|------------------------|---------------------------|-----------------------------------|--|
| West Bank - North            | 100              | 7.9                        | 24.2                   | 67.9                      | 519                               |  |
| West Bank - Center           | 100              | 33.6                       | 34.8                   | 31.6                      | 122                               |  |
| West Bank - South            | 100              | 5.1                        | 34.9                   | 60                        | 377                               |  |
| <b>Total West Bank</b>       | <b>100</b>       | <b>10.7</b>                | <b>29.5</b>            | <b>59.8</b>               | <b>1018</b>                       |  |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>-</b>                   | <b>-</b>               | <b>-</b>                  | <b>2</b>                          |  |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>10.7</b>                | <b>29.4</b>            | <b>59.9</b>               | <b>1020</b>                       |  |

Note: (-) insufficient number of observations

(-) :

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**Table 14: Percent Distribution of Households Having Cesspit by Region and Periodicity of Evacuation**

| Region                       | المجموع<br>Total | أخرى<br>Others | مرة كل ثلاث سنوات<br>Every three years | مرة كل سنتين<br>Every two years | مرة في السنة<br>Once a year | عدة مرات في السنة<br>Many times a year | عدد الأسر<br>Number of households |  |
|------------------------------|------------------|----------------|----------------------------------------|---------------------------------|-----------------------------|----------------------------------------|-----------------------------------|--|
| West Bank - North            | 100              | 18.2           | 9.2                                    | 9.3                             | 24.2                        | 39.1                                   | 283                               |  |
| West Bank - Center           | 100              | 2.4            | 2.9                                    | 2.4                             | 20.7                        | 71.6                                   | 200                               |  |
| West Bank - South            | 100              | 10.3           | 11.2                                   | 2.9                             | 29.7                        | 45.9                                   | 153                               |  |
| <b>Total West Bank</b>       | <b>100</b>       | <b>11.1</b>    | <b>7.6</b>                             | <b>5.5</b>                      | <b>24.3</b>                 | <b>51.5</b>                            | <b>636</b>                        |  |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>3.0</b>     | <b>10.4</b>                            | <b>6.0</b>                      | <b>13.4</b>                 | <b>67.2</b>                            | <b>280</b>                        |  |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>9.0</b>     | <b>8.3</b>                             | <b>5.6</b>                      | <b>21.6</b>                 | <b>55.5</b>                            | <b>916</b>                        |  |

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**Table 15: Percentage Distribution of Households by Region and Waste Water Leakage Outside the House**

| Region                       | المجموع<br>Total | Waste Water Leakage تسريب المياه العادمة |                             |                                | عدد الأسر<br>Number of households | المنطقة |
|------------------------------|------------------|------------------------------------------|-----------------------------|--------------------------------|-----------------------------------|---------|
|                              |                  | لا يعرف<br>Do Not Know                   | لا يوجد تسريب<br>No leakage | يوجد تسريب<br>There is leakage |                                   |         |
| West Bank - North            | 100              | 11.0                                     | 85.9                        | 3.1                            | 1022                              |         |
| West Bank - Center           | 100              | 1.2                                      | 93.2                        | 5.6                            | 649                               |         |
| West Bank - South            | 100              | 0.3                                      | 97.3                        | 2.4                            | 630                               |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>5.1</b>                               | <b>91.2</b>                 | <b>3.7</b>                     | <b>2301</b>                       |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>2.0</b>                               | <b>94.9</b>                 | <b>3.1</b>                     | <b>918</b>                        |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>4.3</b>                               | <b>92.1</b>                 | <b>3.6</b>                     | <b>3219</b>                       |         |

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**Table 16: Percent Distribution of Households by Region and Exposure to Noise**

| Region                       | المجموع<br>Total | التعرض للضجيج<br>Exposure to Noise |                      |                  | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|------------------------------------|----------------------|------------------|--------------------------------------|---------|
|                              |                  | غالباً<br>Very Often               | أحياناً<br>Sometimes | نادراً<br>Seldom |                                      |         |
| West Bank - North            | 100              | 23.2                               | 12.6                 | 64.2             | 1022                                 |         |
| West Bank - Center           | 100              | 6.0                                | 21.8                 | 72.2             | 649                                  |         |
| West Bank - South            | 100              | 17.5                               | 8.0                  | 74.5             | 630                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>16.3</b>                        | <b>14.3</b>          | <b>69.4</b>      | <b>2301</b>                          |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>18.7</b>                        | <b>18.5</b>          | <b>62.8</b>      | <b>918</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>16.9</b>                        | <b>15.3</b>          | <b>67.8</b>      | <b>3219</b>                          |         |

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**Table 17: Percent Distribution of Households by Region and the Most Important Source of Noise**

| Region                         | المجموع<br>Total | Sources of noise |                            |                                                  |                                       |                        | عدد الأسر<br>Number of<br>Households | المنطقة |
|--------------------------------|------------------|------------------|----------------------------|--------------------------------------------------|---------------------------------------|------------------------|--------------------------------------|---------|
|                                |                  | أخرى<br>Others   | أعمال بناء<br>Construction | محاجر و تقطيع أحجار<br>Queries and stone cutting | أنشطة صناعية<br>Industrial activities | حركة المرور<br>Traffic |                                      |         |
| West Bank - North              | 100              | 2.6              | 23.8                       | 7.2                                              | 9.0                                   | 57.4                   | 364                                  |         |
| West Bank - Center             | 100              | 2.7              | 34.1                       | 11.0                                             | 4.1                                   | 48.1                   | 201                                  |         |
| West Bank - South              | 100              | 1.6              | 14.4                       | 1.5                                              | 13.8                                  | 68.7                   | 151                                  |         |
| <b>Total West Bank</b>         | <b>100</b>       | <b>2.5</b>       | <b>24.7</b>                | <b>7.0</b>                                       | <b>8.6</b>                            | <b>57.2</b>            | <b>716</b>                           |         |
| <b>Total Gaza Strip</b>        | <b>100</b>       | <b>0.2</b>       | <b>44.0</b>                | <b>2.5</b>                                       | <b>6.9</b>                            | <b>46.4</b>            | <b>339</b>                           |         |
| <b>Palestinian Territories</b> | <b>100</b>       | <b>1.8</b>       | <b>30.1</b>                | <b>5.8</b>                                       | <b>8.1</b>                            | <b>54.2</b>            | <b>1055</b>                          |         |

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**Table 18: Percent Distribution of Households by Region and Exposure to Smell**

| Region                       | المجموع<br>Total | التعرض للروائح<br>Exposure to smell |                      |                  | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|-------------------------------------|----------------------|------------------|--------------------------------------|---------|
|                              |                  | غالباً<br>Very Often                | أحياناً<br>Sometimes | نادراً<br>Seldom |                                      |         |
| West Bank - North            | 100              | 13.8                                | 11.2                 | 75.0             | 1022                                 |         |
| West Bank - Center           | 100              | 3.4                                 | 14.9                 | 81.7             | 649                                  |         |
| West Bank - South            | 100              | 22.1                                | 14.0                 | 63.9             | 630                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>12.7</b>                         | <b>13.1</b>          | <b>74.2</b>      | <b>2301</b>                          |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>10.6</b>                         | <b>22.1</b>          | <b>67.3</b>      | <b>918</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>12.1</b>                         | <b>15.3</b>          | <b>72.6</b>      | <b>3219</b>                          |         |

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**Table 19: Percent Distribution of Households by Region and the Most Important Source of Smell**

| Region                       | المجموع<br>Total | Sources of smell |                  |                    |                           | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|------------------|------------------|--------------------|---------------------------|--------------------------------------|---------|
|                              |                  | أخرى<br>Others   | public restrooms | مكب نفايات<br>Dump | مياه عادمة<br>Waste Water |                                      |         |
| West Bank - North            | 100              | 19.3             | 38.6             | 8.2                | 33.9                      | 144                                  |         |
| West Bank - Center           | 100              | 16.2             | 30.2             | 21.7               | 31.9                      | 119                                  |         |
| West Bank - South            | 100              | 27.7             | 24.3             | 7.5                | 40.5                      | 191                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>20.9</b>      | <b>32.0</b>      | <b>11.9</b>        | <b>35.2</b>               | <b>554</b>                           |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>13.0</b>      | <b>17.4</b>      | <b>20.9</b>        | <b>48.7</b>               | <b>299</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>18.3</b>      | <b>27.3</b>      | <b>14.8</b>        | <b>39.6</b>               | <b>853</b>                           |         |

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**Table 20: Percent Distribution of Households by Region and Exposure to Dust**

| Region                       | المجموع<br>Total | التعرض للغبار<br>Exposure to dust |                      |                  | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|-----------------------------------|----------------------|------------------|--------------------------------------|---------|
|                              |                  | غالباً<br>Very Often              | أحياناً<br>Sometimes | نادراً<br>Seldom |                                      |         |
| West Bank - North            | 100              | 16.9                              | 12.9                 | 70.2             | 1022                                 |         |
| West Bank - Center           | 100              | 2.1                               | 22.9                 | 75.0             | 649                                  |         |
| West Bank - South            | 100              | 15.6                              | 10.9                 | 73.5             | 630                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>11.9</b>                       | <b>15.5</b>          | <b>72.6</b>      | <b>2301</b>                          |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>17.2</b>                       | <b>14.2</b>          | <b>68.6</b>      | <b>918</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>13.2</b>                       | <b>15.2</b>          | <b>71.6</b>      | <b>3219</b>                          |         |

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**Table 21: Percent Distribution of Households by Region and the Most Important Source of Dust**

| Region                       | المجموع<br>Total | Source of Dust                                              |                            |                                                     |                                | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|-------------------------------------------------------------|----------------------------|-----------------------------------------------------|--------------------------------|--------------------------------------|---------|
|                              |                  | نشاطات صناعية و غيرها<br>Industrial and other<br>activities | اعمال بناء<br>Construction | محاجر و تقطيع أحجار<br>Queries and<br>stone cutting | طرق غير معبدة<br>Unpaved roads |                                      |         |
| West Bank - North            | 100              | 36.4                                                        | 4.2                        | 8.0                                                 | 51.4                           | 316                                  |         |
| West Bank - Center           | 100              | 13.5                                                        | 1.5                        | 13.6                                                | 71.4                           | 180                                  |         |
| West Bank - South            | 100              | 24.7                                                        | 7.0                        | 2.0                                                 | 66.8                           | 145                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>26.9</b>                                                 | <b>4.1</b>                 | <b>8.1</b>                                          | <b>61.0</b>                    | <b>641</b>                           |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>16.7</b>                                                 | <b>4.4</b>                 | <b>4.8</b>                                          | <b>74.1</b>                    | <b>290</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>24.2</b>                                                 | <b>4.2</b>                 | <b>7.1</b>                                          | <b>64.5</b>                    | <b>931</b>                           |         |

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**Table 22: Percent Distribution of Households by Region and Exposure to Smoke**

| Region                       | المجموع<br>Total | Exposure to smoke<br>التعرض للدخان |                      |                  | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|------------------------------------|----------------------|------------------|--------------------------------------|---------|
|                              |                  | غالباً<br>Very Often               | أحياناً<br>Sometimes | نادراً<br>Seldom |                                      |         |
| West Bank - North            | 100              | 5.0                                | 5.6                  | 89.4             | 1022                                 |         |
| West Bank - Center           | 100              | 0.2                                | 6.1                  | 93.7             | 649                                  |         |
| West Bank - South            | 100              | 5.0                                | 9.1                  | 85.9             | 630                                  |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>3.5</b>                         | <b>6.7</b>           | <b>89.8</b>      | <b>2301</b>                          |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>1.3</b>                         | <b>5.0</b>           | <b>93.7</b>      | <b>918</b>                           |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>2.9</b>                         | <b>6.3</b>           | <b>90.8</b>      | <b>3219</b>                          |         |

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**Table 23: Percent Distribution of Households by Region and the Most Important Source of Smoke**

| Region                       | المجموع<br>Total | Source of Smoke |                            |                           |                             |                                       | عدد الأسر<br>Number of<br>Households | المنطقة |
|------------------------------|------------------|-----------------|----------------------------|---------------------------|-----------------------------|---------------------------------------|--------------------------------------|---------|
|                              |                  | أخرى<br>Others  | أعمال بناء<br>Construction | مواصلات<br>Transportation | حرق نفايات<br>Waste Burning | أنشطة صناعية<br>Industrial Activities |                                      |         |
| West Bank - North            | 100              | 47.5            | 1.0                        | 12.0                      | 30.6                        | 8.9                                   | 112                                  |         |
| West Bank - Center           | 100              | 4.7             | 11.5                       | 32.3                      | 42.3                        | 9.2                                   | 45                                   |         |
| West Bank - South            | 100              | 13.2            | 0.9                        | 23.0                      | 40.9                        | 22.0                                  | 79                                   |         |
| <b>Total West Bank</b>       | <b>100</b>       | <b>26.9</b>     | <b>3.0</b>                 | <b>19.8</b>               | <b>36.6</b>                 | <b>13.7</b>                           | <b>236</b>                           |         |
| <b>Total Gaza Strip</b>      | <b>100</b>       | <b>25.6</b>     | <b>1.8</b>                 | <b>12.6</b>               | <b>31.0</b>                 | <b>29.0</b>                           | <b>57</b>                            |         |
| <b>Palestinian Territory</b> | <b>100</b>       | <b>26.6</b>     | <b>2.8</b>                 | <b>18.6</b>               | <b>35.7</b>                 | <b>16.3</b>                           | <b>293</b>                           |         |

:

**Table A: Results of variance and Sampling Error**

| Variable                                                                      | No. Observations | %95                     |              | Relative Error | Standard Error | Estimate |  |
|-------------------------------------------------------------------------------|------------------|-------------------------|--------------|----------------|----------------|----------|--|
|                                                                               |                  | Confidence Interval 95% |              |                |                |          |  |
|                                                                               |                  | الأعلى Upper            | الأدنى Lower | C.V (%)        | S.E            | Total    |  |
| Monthly water consumption of households by the most important source of water |                  |                         |              |                |                |          |  |
| Net work                                                                      | 2710             | 3654483                 | 3041086      | 5              | 156479         | 3347784  |  |
| Domestic well                                                                 | 202              | 27224                   | 18631        | 10             | 2192           | 22927    |  |
| Water tank                                                                    | 1019             | 134711                  | 108897       | 5              | 6585           | 121804   |  |
| Spring or wells                                                               | 35               | 6564                    | 1907         | 28             | 1188           | 4235     |  |
| Number of households by the most important source of water                    |                  |                         |              |                |                |          |  |
| net work                                                                      | 2710             | 370674                  | 311520       | 4              | 15090          | 341097   |  |
| Domestic well                                                                 | 202              | 307955                  | 193293       | 12             | 29251          | 250624   |  |
| Water tank                                                                    | 1019             | 867331                  | 538714       | 12             | 83831          | 703023   |  |
| Spring or wells                                                               | 35               | 80359                   | 2179         | 48             | 19944          | 41269    |  |

| Variable                                                                                       | No.<br>Observations | %95                     |              | Relative<br>Error | Standard Error | Estimate |  |
|------------------------------------------------------------------------------------------------|---------------------|-------------------------|--------------|-------------------|----------------|----------|--|
|                                                                                                |                     | Confidence Interval 95% |              |                   |                |          |  |
|                                                                                                |                     | Upper الأعلى            | Lower الأدنى | C.V (%)           | S.E            | %        |  |
| <b>Percentage of not served households by second important disposal method of solid wastes</b> |                     |                         |              |                   |                |          |  |
| Thrown in the nearest container                                                                | 2538                | 0.097                   | 0.066        | 10                | 0.008          | 0.081    |  |
| Burned                                                                                         | 2538                | 0.511                   | 0.448        | 3                 | 0.016          | 0.480    |  |
| Thrown into a dump                                                                             | 2538                | 0.045                   | 0.025        | 15                | 0.005          | 0.035    |  |
| Percentage of answering the second component from the answers of the question                  | 2538                | 0.023                   | 0.009        | 22                | 0.004          | 0.016    |  |
| <b>Percentage of households by solid waste disposal part</b>                                   |                     |                         |              |                   |                |          |  |
| Household member                                                                               | 3411                | 0.297                   | 0.209        | 9                 | 0.023          | 0.253    |  |
| Local authority                                                                                | 3411                | 0.708                   | 0.607        | 4                 | 0.026          | 0.658    |  |
| Both                                                                                           | 3411                | 0.031                   | 0.016        | 17                | 0.004          | 0.023    |  |
| Others                                                                                         | 3411                | 0.019                   | 0.006        | 28                | 0.004          | 0.012    |  |

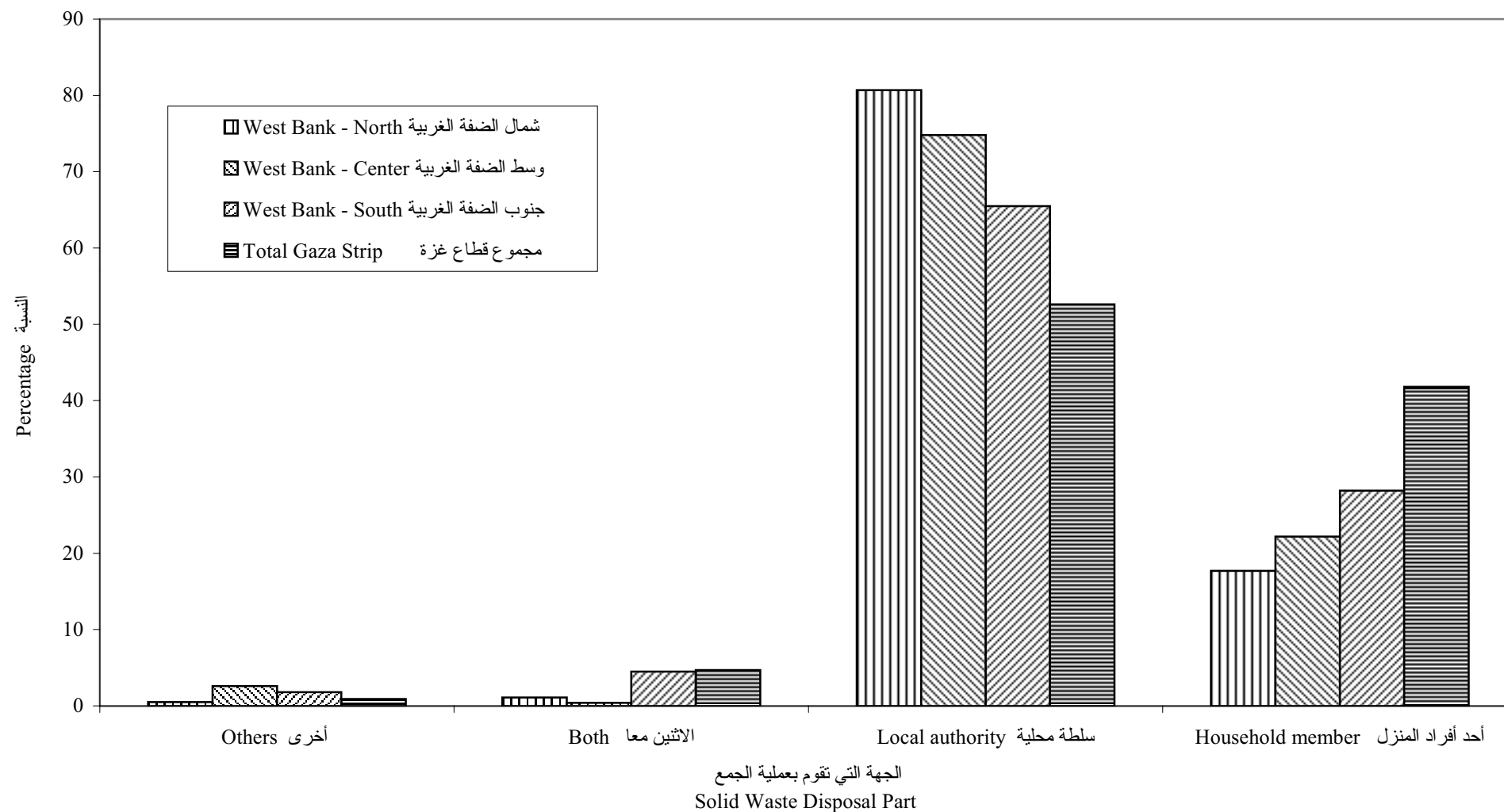
| Variable                                                              | No.<br>Observations | %95                     |              | Relative<br>Error | Standard Error | Estimate |  |
|-----------------------------------------------------------------------|---------------------|-------------------------|--------------|-------------------|----------------|----------|--|
|                                                                       |                     | Confidence Interval 95% |              |                   |                |          |  |
|                                                                       |                     | Upper الأعلى            | Lower الأدنى | C.V (%)           | S.E            | %        |  |
| <b>Percentage of households by water source</b>                       |                     |                         |              |                   |                |          |  |
| Net work                                                              | 3411                | 0.844                   | 0.783        | 2                 | 0.016          | 0.813    |  |
| Water tank                                                            | 3411                | 0.07                    | 0.039        | 14                | 0.008          | 0.055    |  |
| Domestic well                                                         | 3411                | 0.32                    | 0.261        | 5                 | 0.015          | 0.290    |  |
| Spring                                                                | 3411                | 0.203                   | 0.000        | 54                | 0.053          | 0.098    |  |
| <b>Percentage of households by location of cesspit and well</b>       |                     |                         |              |                   |                |          |  |
| Well Below cesspit                                                    | 1020                | 0.177                   | 0.122        | 9                 | 0.014          | 0.149    |  |
| Well above cesspit                                                    | 1020                | 0.769                   | 0.698        | 2                 | 0.018          | 0.733    |  |
| On the same level                                                     | 1020                | 0.141                   | 0.093        | 11                | 0.012          | 0.117    |  |
| <b>Percentage of households by the Most Important source of noise</b> |                     |                         |              |                   |                |          |  |
| Traffic                                                               | 1055                | 0.588                   | 0.492        | 5                 | 0.025          | 0.540    |  |
| Queries and stone cutting                                             | 1055                | 0.018                   | 0.003        | 34                | 0.004          | 0.010    |  |
| Construction                                                          | 1055                | 0.084                   | 0.031        | 23                | 0.013          | 0.057    |  |
| Industrial activities                                                 | 1055                | 0.104                   | 0.058        | 15                | 0.012          | 0.081    |  |

# Figures



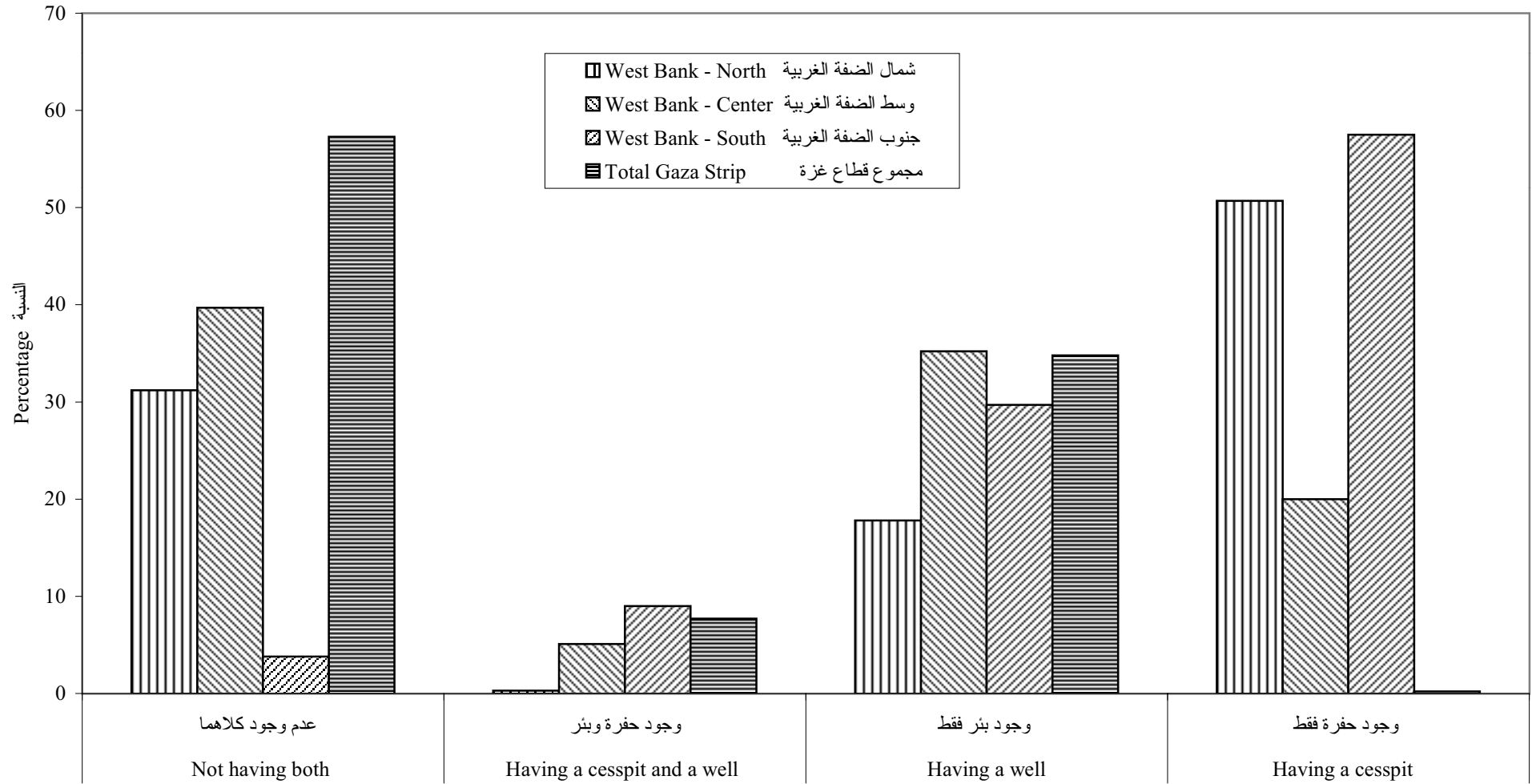
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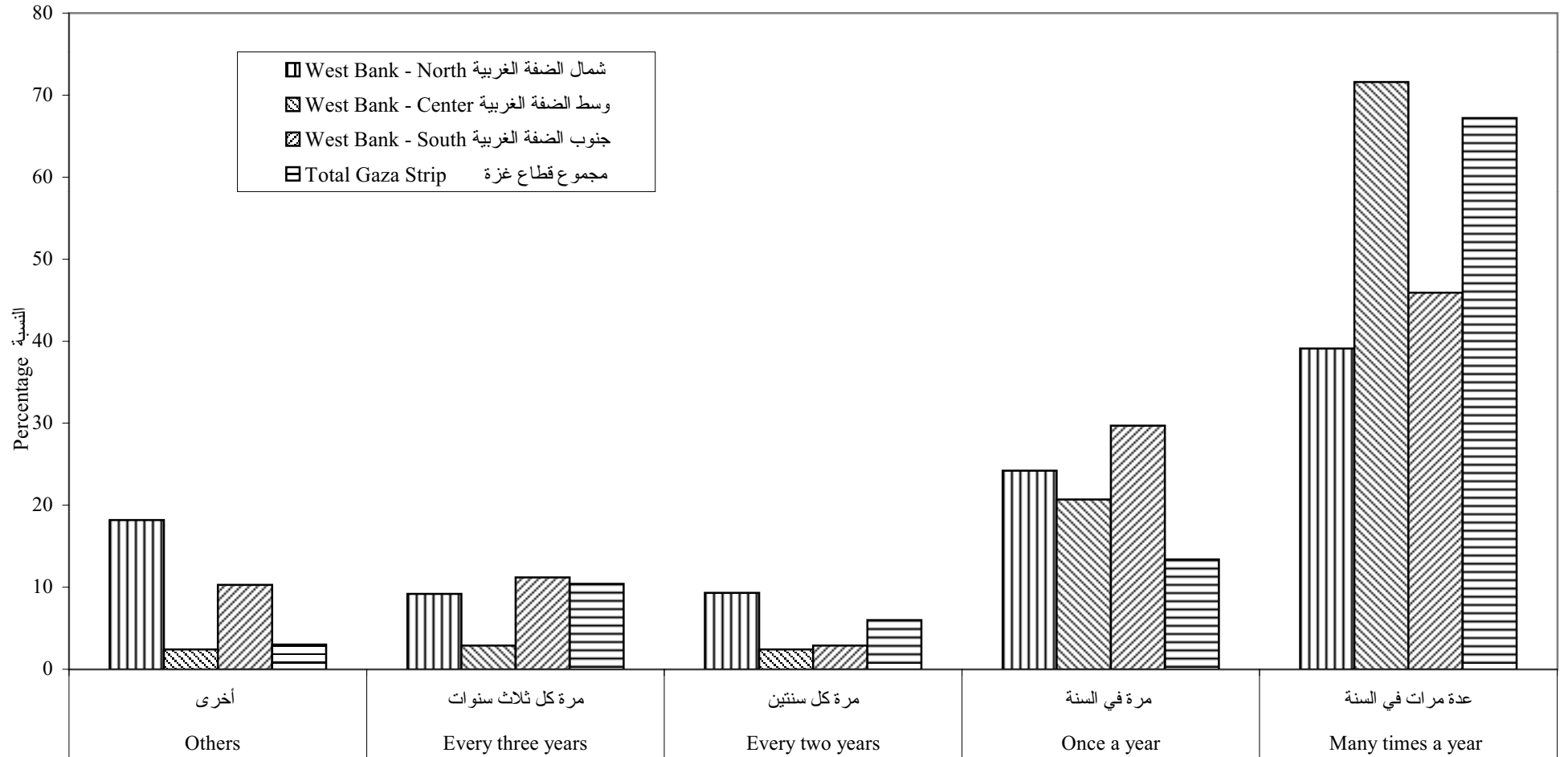
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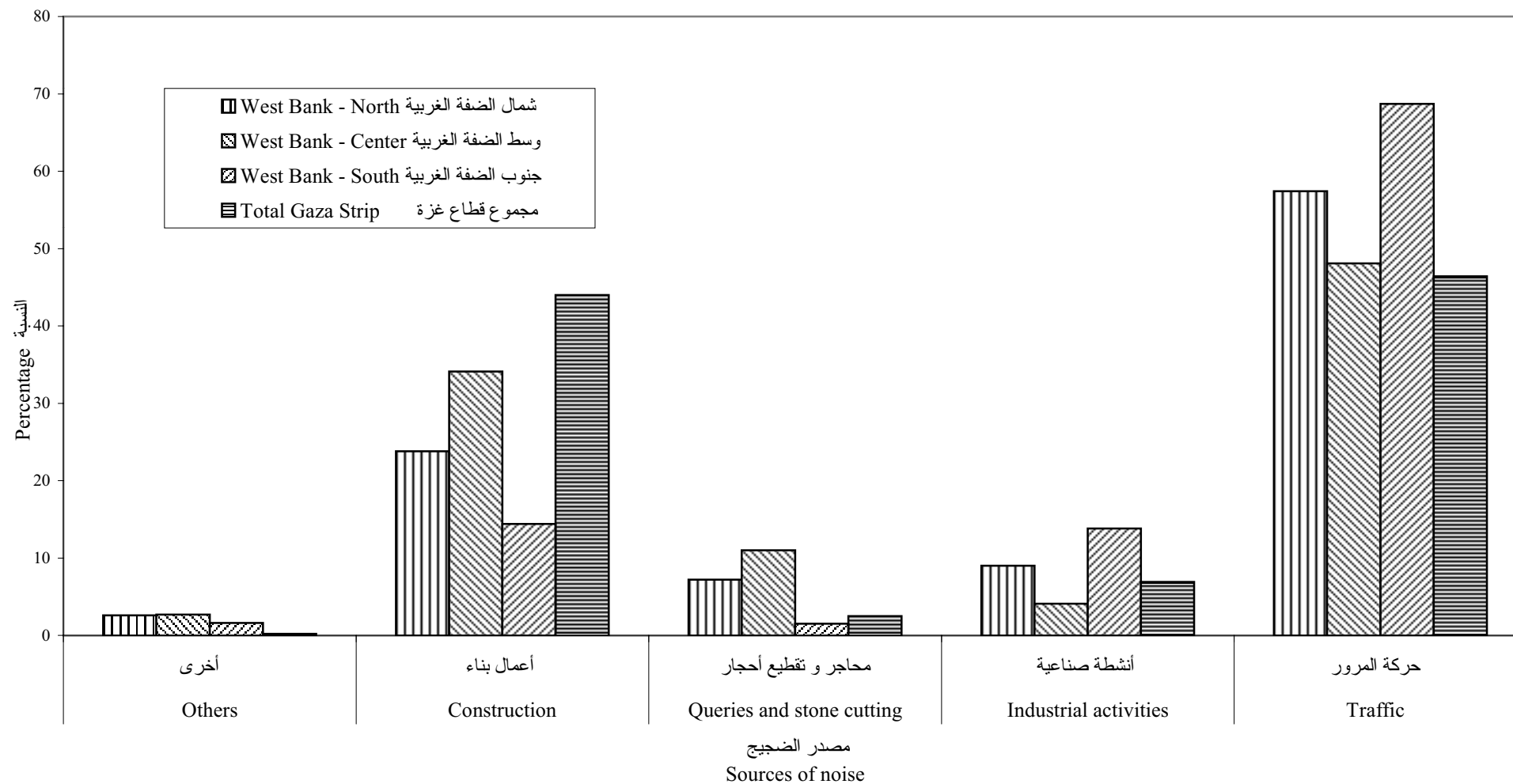
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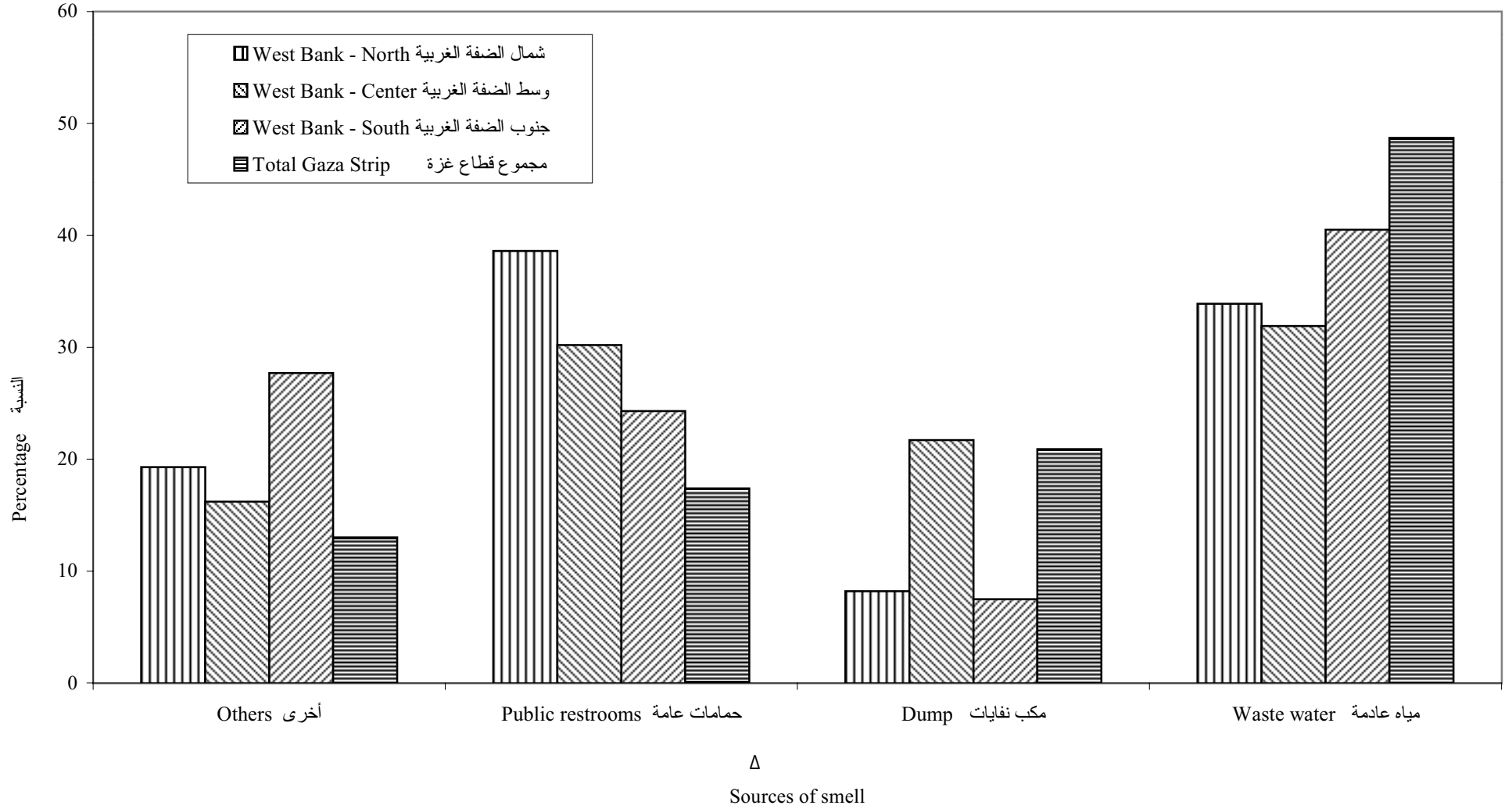
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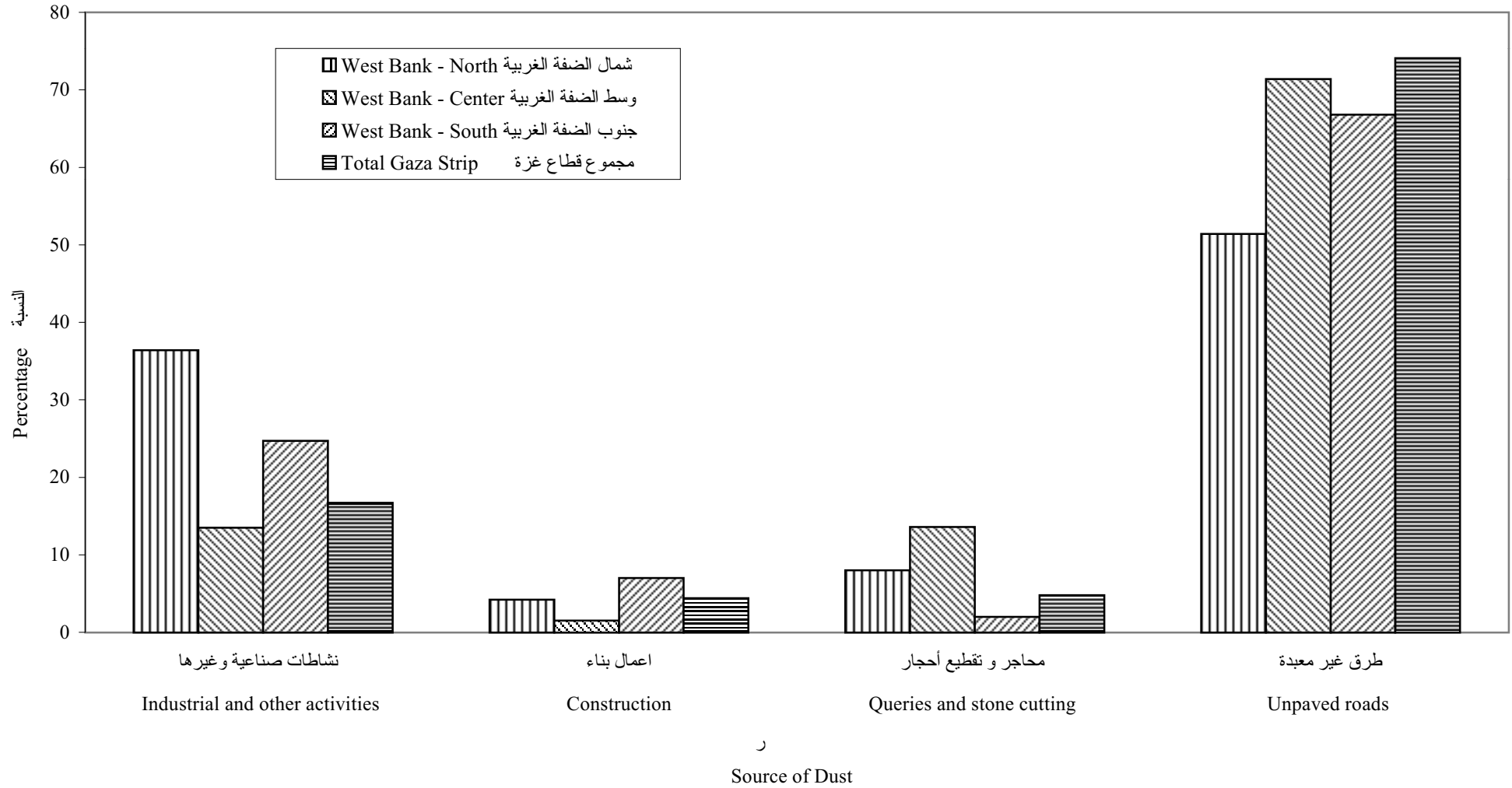
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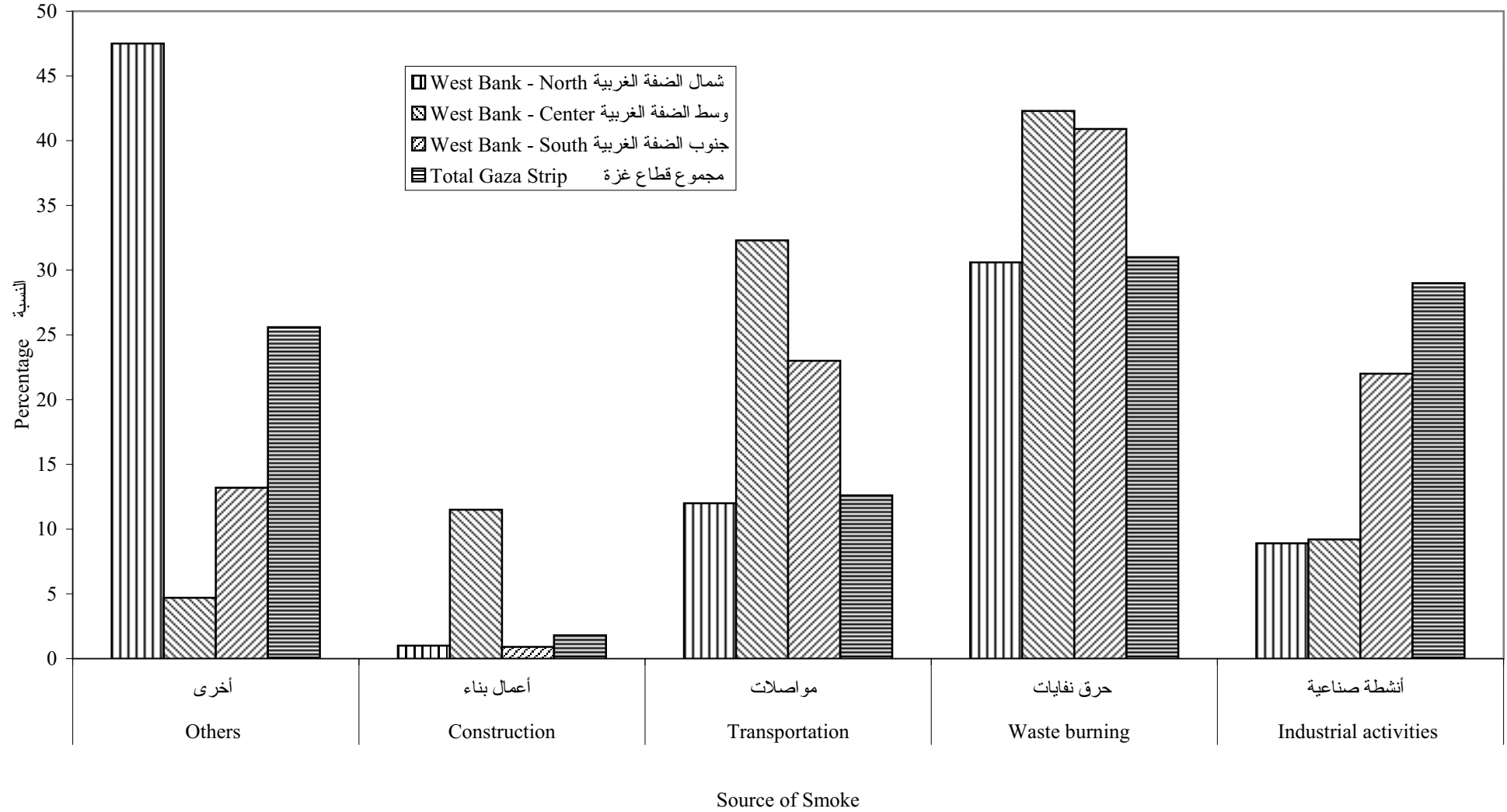
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# **Palestinian Central Bureau of Statistics**

## **Household Environmental Survey 1998 Main Findings**

**December, 1998**

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TABLES ARE PRINTED IN THE ARABIC ORDER (FROM RIGHT TO LEFT).

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Palestinian Central Bureau of Statistics (PCBS) expresses its gratitude to all the target Palestinian households and appreciates their commitment to bring this achievement into light.

The Statistical data were collected through an attached module to labour force survey (LFS). This environmental survey was conducted through a generous grant provided by the Norwegian Government represented by the Norwegian Agency for Development Cooperation (NORAD). PCBS expresses its gratitude to the Government of Norway and to NORAD for their financial support.



## **Preface**

The world attention increased to provide environmental statistical data on the household 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 and natural resources according to the submaster plan for the Environment and Natural Resources Statistical Department, as a tool for describing the status of environment in the Palestinian Territory.

This report handles the main results of the environmental household survey that have been conducted in parallel with the LFS survey during the period from 30/5/1998 to 10/7/1998.

The main objective of this survey is to provide reliable data on environmental reality about the household sector in the Palestinian Territory, including the methods used to handle the solid waste and waste water. 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 on water consumption for the household sector by the water source, the methods of solid waste disposal and their main components the disposal of wastewater, existence of cesspits and water wells. In addition to exposure to noise and air pollution by the source and time.

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.

**December, 1998**

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



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# Summary

## 1. Introduction:

This survey is based on a household sample survey which was conducted during the period from 30/5/1998 until 10/7/1998. It provides basic statistics on various aspects of environment, including water, solid wastes, wastewater, noise and air pollution. A special questionnaire was designed in accordance with United Nation standards and recommendations in the field of environment statistics adapted to the Palestinian conditions. The questionnaire covered the following items:

1. Water consumption, sources, and types of use and existence of wells.
2. Solid waste disposal and its components.
3. Waste water disposal and the existence of cesspits.
4. Air pollution in the area of the house.
5. Exposure to noise, smells, dust, and smoke.

## 2. Concepts and Definitions:

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Air pollution:</b>            | The presence of contaminants or pollutant substances in the air that do not disperse properly and that interfere with human health or welfare.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Cesspit:</b>                  | A well or a pit in which night-soil and other refuse is stored, constructed with either tight or porous walls.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Dump:</b>                     | Uncovered site used for disposal of solid waste.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Environment:</b>              | The totality of all the external conditions affecting the life, development and survival of an organism.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Environmental protection:</b> | <p>Any activity to maintain or restore the quality of environmental media through preventing the emissions of pollutants or reducing the presence of polluting substances in the environmental media. It may consist of:</p> <ol style="list-style-type: none"><li>1. Changes in characteristics of goods and services.</li><li>2. Changes in consumption patterns.</li><li>3. Changes in production techniques.</li><li>4. Treatment or disposals in separate environmental protection facilities.</li><li>5. Recycling and prevention of degradation of the landscape and ecosystems.</li></ol> |

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environment statistics:</b>              | Statistics that describe the state and the trends of the environment, covering the media of the natural environment (air/climate, land/soil), the biota within the media and human settlements. Environment statistics are integrative in nature, measuring human activities and natural events that affect the environment, the impacts of these activities and events, social responses to environmental impacts, and the quality and availability of natural assets. Broad definitions include environmental indicators, indices and accounting. |
| <b>Exposure to noise and air pollution:</b> | The respondent is considered to be exposed to noise, dust, smell or smoke if he considers it a real problem.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Household:</b>                           | One or group of persons living together who make common provision for food or other essentials for living. Households members may be related, unrelated or a combination of both.                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Household waste:</b>                     | Waste material usually generated in the residential environment. Waste with similar characteristics may be generated in other economic activities and can thus be treated and disposed together with household waste.                                                                                                                                                                                                                                                                                                                               |
| <b>Region:</b>                              | The Palestinian Territory was divided for statistical purpose into two main areas: The West Bank and Gaza Strip.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Sewage network:</b>                      | System of collectors, pipelines, conduits and pumps to evacuate wastewater from any of the points of generation either to municipal sewage treatment plant or to a point where waste water is discharged.                                                                                                                                                                                                                                                                                                                                           |
| <b>Smoke:</b>                               | Particles suspended in air after incomplete combustion of materials.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Solid wastes:</b>                        | Useless and sometimes hazardous material with low liquid content, solid wastes include municipal garbage, industrial and commercial waste, sewage sludge, wastes resulting from agricultural and animal husbandry operations and other connected activities, demolition wastes and mining residues                                                                                                                                                                                                                                                  |
| <b>Solid waste burning:</b>                 | Out door burning of wastes such as lumber, textiles and so forth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Solid waste disposal:</b>                | Ultimate deposition or placement of refuse that is not salvaged or recycled                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Water quality:</b>                       | The water without colour, taste, smell or precipitates is considered as good water, the water with some colour or taste or smell or precipitates but still acceptable from the respondent's point of view is considered to be fairly good water, and the water with some colour or taste or smell or precipitates to an extent that is not acceptable from the respondent's point of view is considered to be bad water.                                                                                                                            |

- 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.
- Waste water:** Used water, typically discharged into the sewage system. It contains matter and bacteria in solution and suspension.
- Wastewater leakage:** Leakage is considered to exist if the respondent knows that there is leakage, either from the connections to the cesspit or to the network or from the cesspit itself or the nearby network.

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

This section presents the main findings of the survey. Statistical results are classified according to the main components of environmental elements, including water, solid waste, waste water, exposures to noise and air pollution.

#### **3.1 Water:**

##### **3.1.1 Water Sources:**

Results show that 85.9% of households in the Palestinian Territory are connected to water network, 30.7% of households in the Palestinian Territory depend on buying water tanks, and the households with water wells are 5.8% of West Bank and Gaza Strip. The use of water from springs is nearly almost none existent in Gaza Strip, while it is about 1.4% in the West Bank.

##### **3.1.2 Household Water Consumption:**

The households average monthly consumption of water in the Palestinian Territory from public networks is 21.2 cubic meters. The corresponding figure for tanks is nearly 7.9 cubic meters, while it is 11.8 cubic meters for wells in West Bank, that almost none existent in Gaza Strip. The households average monthly consumption from springs is about 10.5 cubic meters in West Bank.

##### **3.1.3 Household Water quality:**

Results show that 68.9% of households in the Palestinian Territory consider the water quality as good, and this percentage increases in West Bank to reach 86.1%, while in Gaza Strip 54.3% of households consider the water quality as fairly good and 30.7% of households consider it as bad quality.

#### **3.2 Solid Wastes:**

##### **3.2.1 Disposal of solid wastes:**

Results show that local authorities collect solid wastes for 69.5% of households in the Palestinian Territory, while 26.7% of households dispose wastes by themselves. The local authority in the Palestinian Territory collects wastes twice a week for 28.2% of households, While for about 26.4%

of households, the wastes is collected six times a week and for about 18.7% the collection periodicity is three times a week.

For the households who dispose wastes by themselves in the West Bank, burning is the most important disposal method for 42.1% of them, throwing to the nearest container is the most important method for 31.7% against 16.8% for throwing the wastes into a dump. In Gaza Strip, throwing wastes into the nearest container is the most important method for 93.3% of the households who dispose wastes by themselves.

The survey results showed that 18.3% of the household in the West Bank reported that there is a place near the house for waste collection as a dump or a big container, against 61.7% of households in Gaza Strip.

### **3.2.2 Components of Solid wastes:**

Food wastes are the most important component of solid wastes for 91.6% of households in the Palestinian Territory. About 48.0% of households reported that paper and cartoon is the second most important component, while the diapers are the second most important component for 28.9% of households.

### **3.3 Waste water and availability of household wells:**

The results indicated that 60.9% of households in the Palestinian Territory have cesspits, of which 69.2% in the West Bank. On the other hand 37.4% of households in the Palestinian Territory have wells, while 32.5% have both cesspit and well. For households that have both cesspit and well, 59.9% reported that the distance between the well and cesspit is less than 30 meters, and 14.9% reported that the level of the well is lower than the cesspit.

The Survey results indicated that 55.5% of households in the Palestinian Territory pumps out the cesspit several times a year, while 21.6% of households pumps out the cesspit once a year. The percentage of households with no wastewater leakage outside the house is about 92.1%.

### **3.4 Exposure to noise:**

The results indicated that 69.4% of households in the West Bank are seldomly exposed to noise, against 62.8% in Gaza Strip. The percentage of households that are sometimes exposed to noise is 18.5% in Gaza Strip and 14.3% in West Bank, while 16.9% of households in the Palestinian Territory are exposed to noise very often.

Results show that traffic is the most important source of noise in the Palestinian Territory for 54.2% of households, while construction work is the most important source of noise for 44.0% of households in the Gaza Strip and for 24.7% in West Bank.

### **3.5 Air pollution:**

#### **3.5.1 Exposure to smells:**

The percentages of households which are seldomly exposed to bad smells are very close for West Bank and Gaza Strip where it is about 74.2% in the West Bank against 67.3% for Gaza Strip. About 22.1% of the households in Gaza Strip are sometimes exposed to bad smells against 13.1% for the West Bank, while 12.1% of the households in the Palestinian Territory are exposed to bad smell very often.

Results show that 39.6% of the households in the Palestinian Territory consider the waste water as the main source for bad smells and 27.3% of the households consider public rest rooms as the main source of bad smells, while 14.8% of households consider waste dump as the main source of bad smells.

#### **3.5.1 Exposure to dust:**

The percentage of households which are seldomly exposed to dust are very close for both West Bank and Gaza Strip where it is 72.6% for the West Bank against 68.6% for Gaza Strip. On the other hand, 15.2% of households are some times exposed to dust, while 11.9% of the households are exposed to dust very often against 17.2% in Gaza Strip.

About 64.5% of the household in the Palestinian Territory consider unpaved roads as the main source of dust, while 7.1% consider quarries and stone cutting ad the main source of dust.

#### **3.5.1 Exposure to smoke:**

Results show that 90.8% of the households in the Palestinian Territory are seldomly exposed to smoke, and 6.3% of the Palestinian households are sometimes exposed to smokes, while 2.9% are very often exposed to smoke.

Wastes burning is considered as the main source of smoke for 35.7% of the households in the Palestinian Territory, while 18.6% of the households consider the traffic smoke as the main source of smoke, and 16.3% considered the industrial activities as the main source of smoke.

## **4. Methodology:**

### **4.1 Questionnaire:**

The environmental questionnaire was designed in accordance with the similar country experiments and with international standards and recommendations for the most important indicators, taking into account the special situation of Palestine.

### **4.2 Sample and Frame:**

The sample is a two-stage stratified cluster random sample.

#### **4.2.1 Target Population:**

All Palestinians living in the Palestinian Territory, excluding nomads and persons living in institutions such as prisons or shelters.

#### **4.2.2 Sampling Frame:**

Since it was not possible to use the population census<sup>1</sup> data, the major task, with regard to constructing a master sample, was developing a sampling frame covering the whole country (master sample). Such frame has been used as the Primary Sampling Units (PSUs) in the first stage of selection. For the second stage of selection, all PSUs have been listed in the field at the household level, this provided a sampling frame for selecting the households.

#### **4.2.3 Sample Design:**

The sample of this survey is part of the sample of the labour force survey (LFS), that is conducted every 13 weeks. The total sample of LFS is about 7,500 households distributed over 13 weeks. The sample of the households environmental survey occupies six weeks of the ninth round of the LFS.

#### **Stratification:**

In designing the sample of LFS four levels of stratification have been made:

1. Stratification by District.
2. Stratification by place of residence which comprises:  
(a) Municipalities                      (b) Villages                      (c) Refugee Camps
3. Stratification by locality size.
4. Stratification by cell identification in that order.

#### **Sampling Unit:**

First stage sampling units are the area units (Cells) in the master sample. The second stage sampling units are households.

#### **Sample Size:**

The sample size is 3411 Palestinian households in West Bank and Gaza Strip, where this sample has been distributed according to the locality. 1257 households in the main cities according to the whole sample, against 1591 households in the villages and 563 in the refugee camps.

#### **Target Cluster Size:**

The next important issue in sample design is the target cluster size or “sample-take”, the number of households to be selected per PSU on the average. In the labour force survey,

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<sup>1</sup>The census was implemented in December 1997, but the data was not ready for sampling at the date of implementing this survey

about 7,500 households have been selected from 480 master sample areas. Therefore, the sample- take is around 16 households per PSU.

### **4.3 The Pre - Test:**

In April 1998, a pre-test was conducted in the West Bank to test the environmental questionnaire and the survey tools. Seventeen households comprised the sample of the pre-test, other than those included in the main survey. Results indicated that the survey tools were appropriate except for ambiguity in some of the terms used. It was found that the Palestinian households would cooperate with the field workers.

### **4.4 Field Work:**

#### **4.4.1 Training Field Workers:**

As apart of the LFS training, 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 the training course in Ramallah for West Bank trainees. Instructions for filling the questionnaire were made available for the interviewers. The training 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 30/5/1998 and lasted until 10/7/1998. Fieldwork teams were distributed to all districts proportional to the sample size in each district. The fieldwork team consists of 24 members including one fieldwork coordinator, (4) supervisors, (4) editors and 15 interviewers.

### **4.5 Data Processing:**

The data processing stage consisted 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 a data entry template written in BLAISE. 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 field work 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. The non sampling errors, could not be determined easily, due to the diversity of sources (e.g. the interviewers, respondent, editor, coders, data entry operator... etc).

However, several measures were adopted to minimize the effects of these errors. The interviewers, editors and coders hand 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.

## References

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