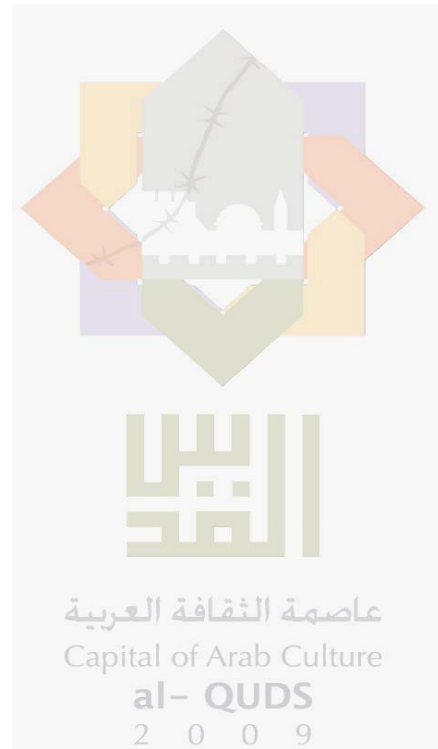
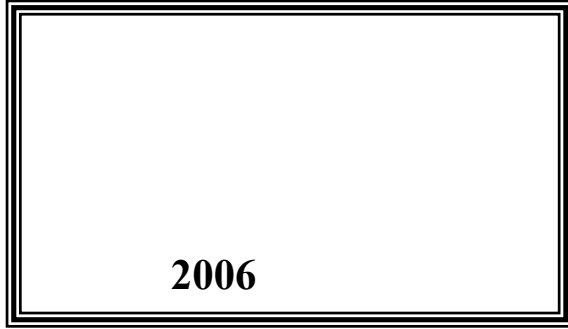


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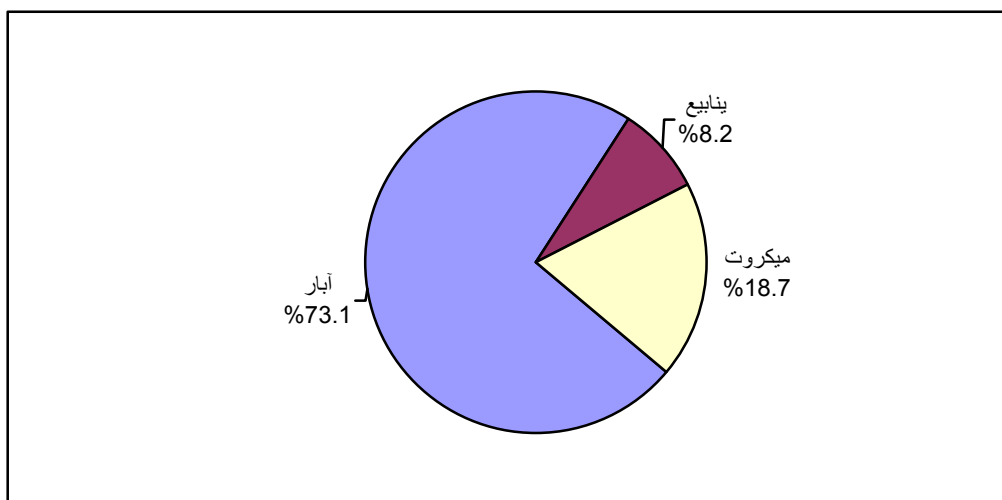
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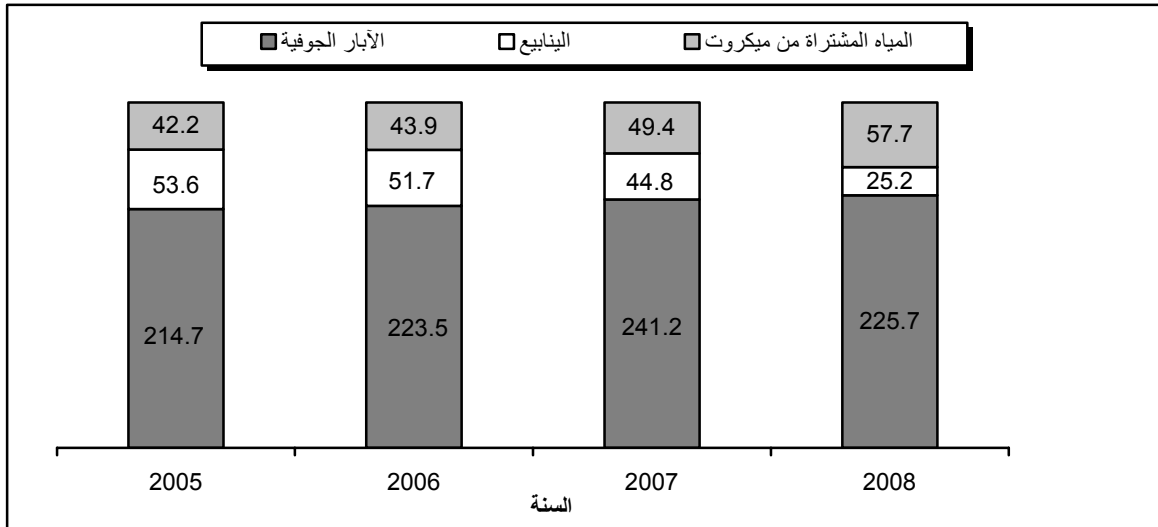
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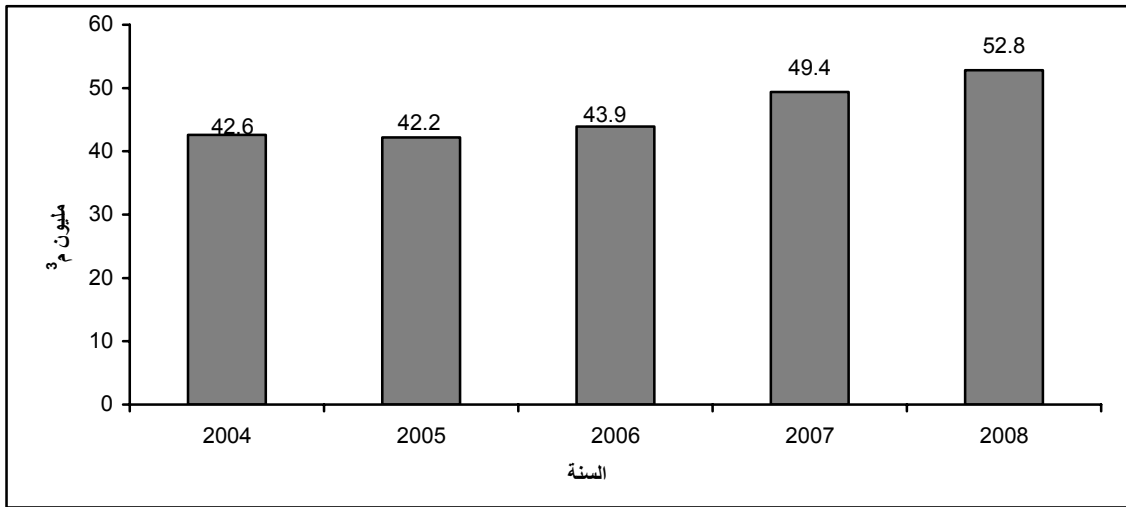
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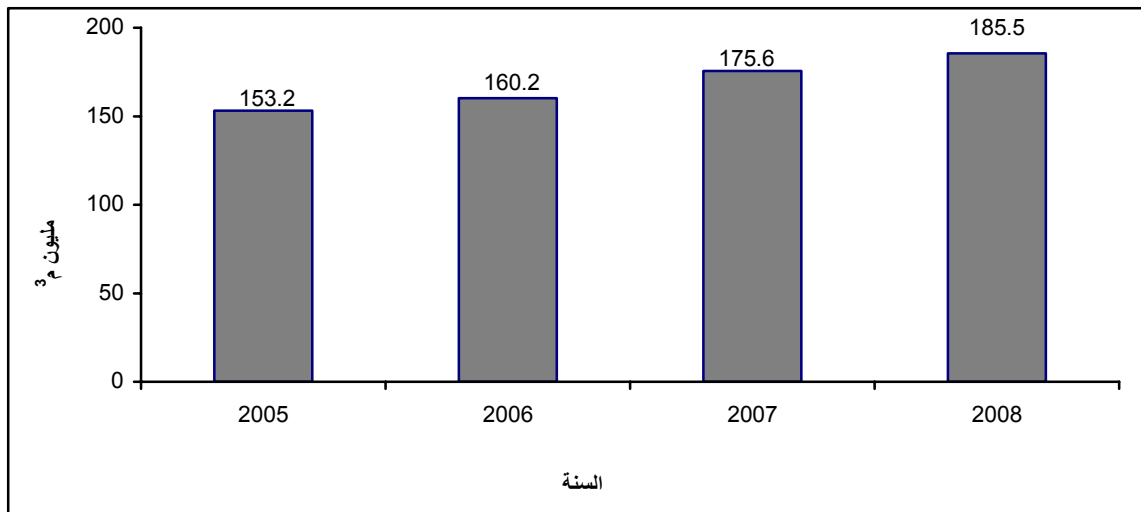
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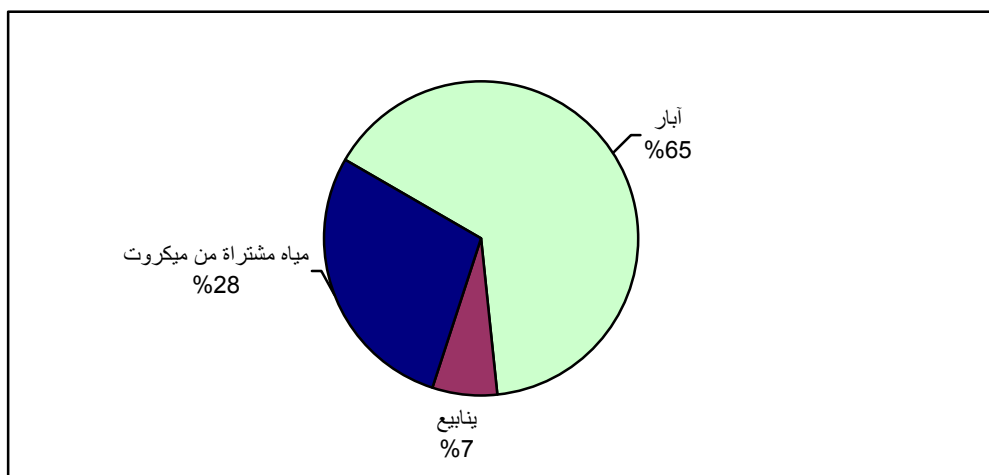
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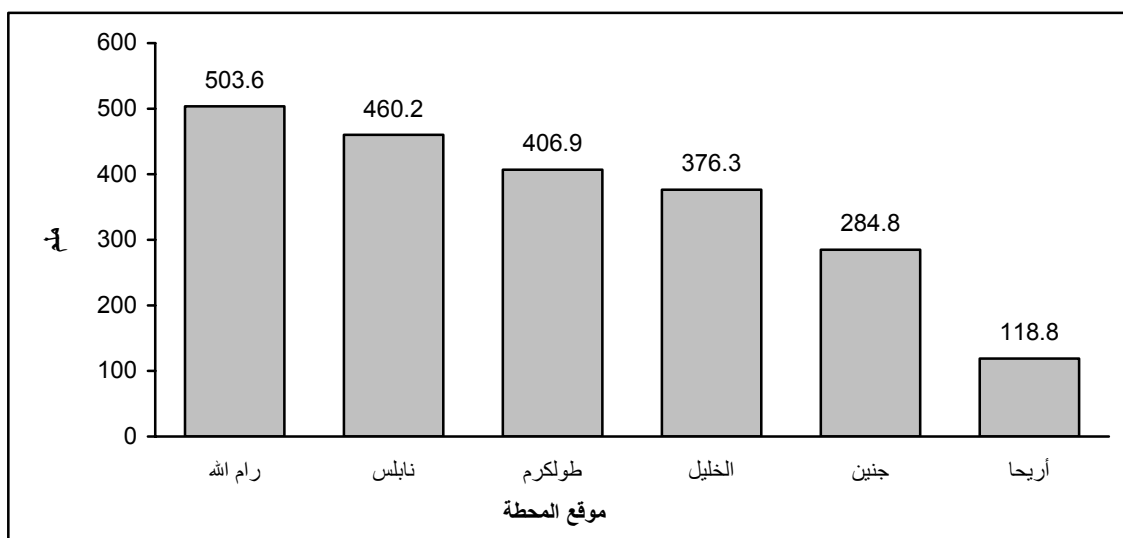
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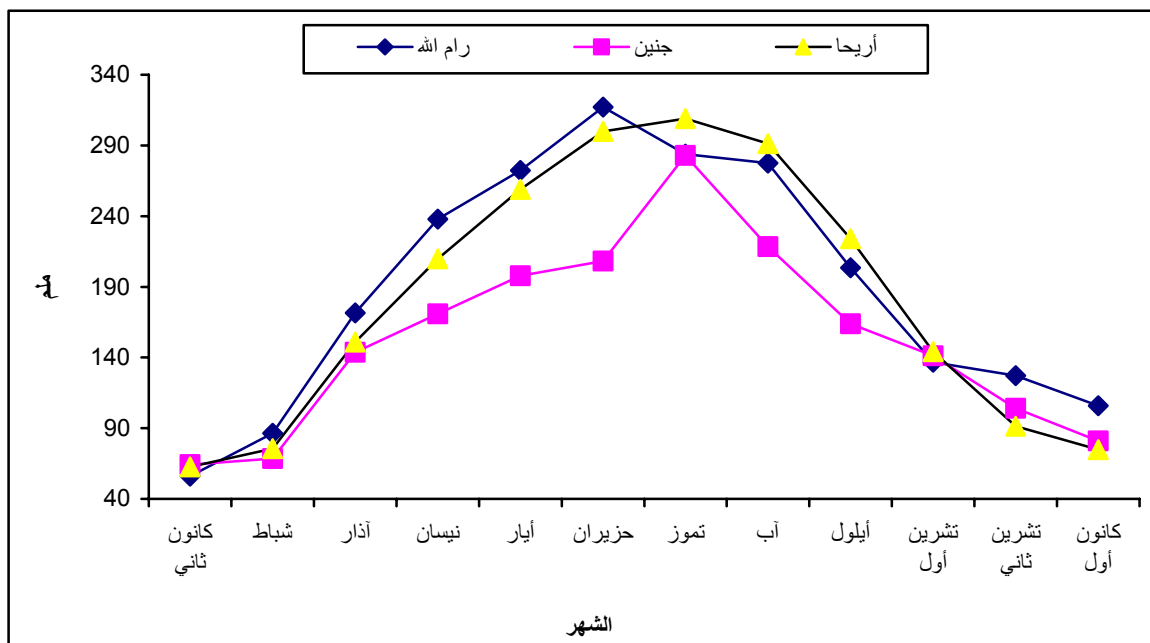
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# Tables



2008 - 2002

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Table 1: Selected Indicators for Water Statistics in the Palestinian Territory, 2002 – 2008

| Indicator                                                                                                               | Year  |       |       |       |       |      |       |                           |
|-------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|------|-------|---------------------------|
|                                                                                                                         | 2008  | 2007  | 2006  | 2005  | 2004  | 2003 | 2002  |                           |
| Annual Available Water Quantity (million m <sup>3</sup> /year)                                                          | 308.7 | 335.4 | 319.1 | 315.2 | 295.8 | ..   | 279.9 | ( / <sup>3</sup> )        |
| Annual Pumped Quantity from Groundwater Wells (million m <sup>3</sup> /year)                                            | 225.7 | 241.2 | 223.5 | 214.7 | 196.1 | ..   | 203.4 | ( / <sup>3</sup> )        |
| Annual Discharge of Springs Water (million m <sup>3</sup> /year)                                                        | 25.2  | 44.8  | 51.7  | 53.6  | 52.7  | 60.5 | 38.1  | ( / <sup>3</sup> )        |
| Annual Quantity of Water Purchased from Israeli Water Company (Mekorot) for Domestic Use (million m <sup>3</sup> /year) | 52.8  | 49.4  | 43.9  | 42.2  | 42.6  | 43.1 | 38.4  | ( )<br>( / <sup>3</sup> ) |
| Annual Quantity of Water Supply for Domestic Sector (million m <sup>3</sup> /year)                                      | 185.5 | 175.6 | 160.2 | 153.2 | 142.9 | ..   | 125.2 | ( / <sup>3</sup> )        |

Source: Palestinian Water Authority, 2008. Water Database. Ramallah - Palestine.

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Table 2: Annual Available Water Quantity in the Palestinian Territory by Region and Source, 2008

Unit: 1000 m<sup>3</sup>/year/<sup>3</sup> 1000 :

| Region                       | Source           |                                                                                             |                   |                                     |     |
|------------------------------|------------------|---------------------------------------------------------------------------------------------|-------------------|-------------------------------------|-----|
|                              | Total            | ( <sup>(1)</sup> ( )<br>Water purchased from Israeli water company (Mekorot) <sup>(1)</sup> | Springs discharge | Water pumped from Palestinian wells |     |
| <b>Palestinian Territory</b> | <b>308,659.4</b> | <b>57,726.3</b>                                                                             | <b>25,237.8</b>   | <b>225,695.3</b>                    | (2) |
| West Bank <sup>(2)</sup>     | <b>144,432.4</b> | 52,926.3                                                                                    | 25,237.8          | 66,268.3                            |     |
| Gaza Strip                   | <b>164,227.0</b> | 4,800.0                                                                                     | -                 | 159,427.0                           |     |

<sup>(1)</sup> Includes the pumped water from the wells which are located in the Palestinian Territory and controlled by Mekorot company for domestic and agricultural sectors.

(1)

<sup>(2)</sup> Exclude those parts of Jerusalem, which were annexed by Israel in 1967.

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(2)

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

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**Table 3: Number of Palestinian Water Wells and it's Annual Pumping Quantity in the Palestinian Territory by Governorate and Use, 2008**Quantity: 1000 m<sup>3</sup>/year/<sup>3</sup> 1000 :

| Governorate <sup>(1)</sup>      | <sup>(2)</sup><br>Pumping quantity <sup>(2)</sup> |                  |                  | Number of wells |              |            | (1) |
|---------------------------------|---------------------------------------------------|------------------|------------------|-----------------|--------------|------------|-----|
|                                 | Total                                             | Agricultural     | Domestic         | Total           | Agricultural | Domestic   |     |
| <b>Palestinian Territory</b>    | <b>225,695.3</b>                                  | <b>105,395.6</b> | <b>120,299.7</b> | <b>..</b>       | <b>..</b>    | <b>198</b> | (3) |
| <b>West Bank<sup>(3)</sup></b>  | <b>66,268.3</b>                                   | <b>30,145.6</b>  | <b>36,122.7</b>  | <b>325</b>      | <b>272</b>   | <b>53</b>  |     |
| Jenin                           | 5,122.9                                           | 2,913.7          | 2,209.2          | 66              | 59           | 7          |     |
| Tubas                           | 2,778.4                                           | 2,723.4          | 55.0             | 9               | 8            | 1          |     |
| Tulkarem                        | 13,162.8                                          | 9,326.0          | 3,836.8          | 64              | 52           | 12         |     |
| Nablus                          | 8,626.2                                           | 1,059.0          | 7,567.2          | 20              | 15           | 5          |     |
| Qalqiliya                       | 10,261.7                                          | 5,908.4          | 4,353.3          | 70              | 67           | 3          |     |
| Salfit                          | -                                                 | -                | -                | 1               | 1            | -          |     |
| Ramallah & Al-Bireh             | 3,441.5                                           | -                | 3,441.5          | 6               | -            | 6          |     |
| Jericho & Al-Aghwar             | 8,215.1                                           | 8,215.1          | -                | 70              | 70           | -          |     |
| Bethlehem                       | 12,105.1                                          | -                | 12,105.1         | 11              | -            | 11         |     |
| Hebron                          | 2,554.6                                           | -                | 2,554.6          | 8               | -            | 8          |     |
| <b>Gaza Strip<sup>(4)</sup></b> | <b>159,427.0</b>                                  | <b>75,250.0</b>  | <b>84,177.0</b>  | <b>..</b>       | <b>..</b>    | <b>145</b> | (4) |

<sup>(1)</sup>The wells existence is restricted to the governorates mentioned.

(1)

<sup>(2)</sup>Quantities pumped from the wells were calculated according to use, not to the well's permit.

(2)

<sup>(3)</sup> Exclude those parts of Jerusalem, which were annexed by Israel in 1967.

(3)

<sup>(4)</sup> Annual pumped quantities of agricultural wells are estimates data.

(4)

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

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Table 4: Number of Springs and it's Annual Discharge\* in the Palestinian Territory by Governorate and Year, 2006 - 2008

| Governorate                  | 2008                                                               |                      | 2007                                                               |                      | 2006                                                               |                      |           |
|------------------------------|--------------------------------------------------------------------|----------------------|--------------------------------------------------------------------|----------------------|--------------------------------------------------------------------|----------------------|-----------|
|                              | ( / <sup>3</sup> 1000)<br>Discharge (1000<br>m <sup>3</sup> /year) | Number of<br>Springs | ( / <sup>3</sup> 1000)<br>Discharge<br>(1000 m <sup>3</sup> /year) | Number of<br>Springs | ( / <sup>3</sup> 1000)<br>Discharge<br>(1000 m <sup>3</sup> /year) | Number of<br>Springs |           |
| <b>Palestinian Territory</b> | <b>25,237.8</b>                                                    | <b>117</b>           | <b>44,806.4</b>                                                    | <b>125</b>           | <b>51,683.0</b>                                                    | <b>126</b>           | <b>**</b> |
| <b>West Bank**</b>           | <b>25,237.8</b>                                                    | <b>117</b>           | <b>44,806.4</b>                                                    | <b>125</b>           | <b>51,683.0</b>                                                    | <b>126</b>           |           |
| Jenin                        | 152.8                                                              | 5                    | 205.1                                                              | 7                    | 232.4                                                              | 7                    |           |
| Tubas                        | 2,458.2                                                            | 10                   | 4,484.5                                                            | 10                   | 7,996.6                                                            | 10                   |           |
| Tulkarm                      | -                                                                  | -                    | -                                                                  | -                    | -                                                                  | -                    |           |
| Nablus                       | 2,382.3                                                            | 32                   | 8,775.2                                                            | 35                   | 8,942.3                                                            | 35                   |           |
| Qalqiliya                    | -                                                                  | -                    | -                                                                  | -                    | -                                                                  | -                    |           |
| Salfit                       | 152.5                                                              | 5                    | 245.3                                                              | 5                    | 271.7                                                              | 5                    |           |
| Ramallah & Al-Bireh          | 984.6                                                              | 27                   | 1,713.8                                                            | 31                   | 1,608.0                                                            | 31                   |           |
| Jericho & Al-Aghwar          | 17,127.1                                                           | 7                    | 25,931.9                                                           | 7                    | 29,090.6                                                           | 7                    |           |
| Jerusalem J <sub>2</sub>     | 1,476.1                                                            | 4                    | 2,645.4                                                            | 4                    | 2,530.7                                                            | 4                    |           |
| Bethlehem                    | 356.9                                                              | 15                   | 550.3                                                              | 15                   | 736.2                                                              | 15                   |           |
| Hebron                       | 147.3                                                              | 12                   | 254.9                                                              | 11                   | 274.5                                                              | 12                   |           |
| <b>Gaza Strip</b>            | <b>-</b>                                                           | <b>-</b>             | <b>-</b>                                                           | <b>-</b>             | <b>-</b>                                                           | <b>-</b>             |           |

\* Number of springs and quantity of discharged water are for the Palestinian Water Authority controlled springs.

\*

\*\* Exclude those parts of Jerusalem, which were annexed by Israel in 1967.

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Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

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2008 – 2004 ( ) :5  
**Table 5: Quantity of Water Purchased From Israeli Water Company (Mekorot) in the Palestinian Territory for Domestic Use by Governorate and Year, 2004-2008**

Unit: 1000 m<sup>3</sup>/year

/ <sup>3</sup> 1000 :

| Governorate <sup>(1)</sup>                                      | Year            |                 |                 |                 |                 | (1) |
|-----------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----|
|                                                                 | 2008            | 2007            | 2006            | 2005            | 2004            |     |
| <b>Palestinian Territory</b>                                    | <b>52,819.2</b> | <b>49,442.2</b> | <b>43,910.0</b> | <b>42,161.2</b> | <b>42,552.1</b> | (2) |
| <b>West Bank <sup>(2)</sup></b>                                 | <b>48,019.2</b> | <b>44,843.2</b> | <b>39,910.0</b> | <b>38,912.9</b> | <b>38,813.3</b> |     |
| Jenin                                                           | 1,984.1         | 1,363.2         | 1,047.0         | 2,699.8         | 2,480.5         |     |
| Tubas                                                           | 180.0           | 207.0           | 182.5           | 159.6           | 120.0           |     |
| Tulkarem                                                        | 353.7           | 325.0           | 331.0           | 326.8           | 268.0           |     |
| Nablus                                                          | 3,807.1         | 3,149.0         | 2,685.3         | 2,460.2         | 2,638.3         |     |
| Qalqiliya                                                       | 538.7           | 466.0           | 408.0           | 353.2           | 272.1           |     |
| Salfit                                                          | 2,022.2         | 1,879.0         | 1,737.0         | 1,664.0         | 1,501.4         |     |
| Ramallah & Al-Bireh and Jerusalem J <sub>2</sub> <sup>(3)</sup> | 19,006.0        | 18,335.0        | 16,646.2        | 16,047.5        | 16,094.7        |     |
| Jericho & Al-Aghwar                                             | 1,798.9         | 1,850.0         | 1,230.0         | 1,303.4         | 1,450.4         |     |
| Bethlehem and Hebron <sup>(4)</sup>                             | 18,328.5        | 17,269.0        | 15,643.0        | 13,898.4        | 13,987.9        |     |
| <b>Gaza strip</b>                                               | <b>4,800.0</b>  | <b>4,599.0</b>  | <b>4,000.0</b>  | <b>3,248.3</b>  | <b>3,738.8</b>  | (4) |

<sup>(1)</sup> Includes the pumped water from the wells which are located in the Palestinian Territory and controlled by Mekorot.

<sup>(2)</sup> Exclude those parts of Jerusalem, which were annexed by Israel in 1967.

<sup>(3)</sup> of them 3,806 thousand cubic meter were purchased by Jerusalem J<sub>2</sub> Area in 2008.

<sup>(4)</sup> of them 10,138 thousand cubic meter were purchased by Hebron Governorate in 2008.

Source: Palestinian Water Authority, 2008. Water Database. Ramallah - Palestine.

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2008 – 2005

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**Table 6: Quantity of Water Supply for Domestic Sector in the Palestinian Territory by Governorate and Year, 2005 –2008**Unit: Milion m<sup>3</sup>/year/<sup>3</sup> :

| Governorate                                       | Year          |               |               |               |                                                           |
|---------------------------------------------------|---------------|---------------|---------------|---------------|-----------------------------------------------------------|
|                                                   | 2008          | 2007          | 2006          | 2005          |                                                           |
| <b>Palestinian Territory</b>                      | <b>185.51</b> | <b>175.63</b> | <b>160.15</b> | <b>153.18</b> | (1)<br><br><br><br><br><br><br><br><br><br>J <sub>2</sub> |
| <b>West Bank<sup>(1)</sup></b>                    | <b>96.53</b>  | <b>85.53</b>  | <b>79.35</b>  | <b>75.03</b>  |                                                           |
| Jenin                                             | 4.32          | 5.30          | 5.00          | 4.79          |                                                           |
| Tubas                                             | 1.46          | 0.83          | 0.88          | 0.79          |                                                           |
| Tulkarm                                           | 4.19          | 8.27          | 7.88          | 6.63          |                                                           |
| Nablus                                            | 12.4          | 11.02         | 10.47         | 10.85         |                                                           |
| Qalqiliya                                         | 4.89          | 6.31          | 4.60          | 4.50          |                                                           |
| Salfit                                            | 2.17          | 2.00          | 1.82          | 1.87          |                                                           |
| Ramallah & Al-Bireh, and Jerusalem J <sub>2</sub> | 22.69         | 21.75         | 19.68         | 18.68         |                                                           |
| Jericho & Al-Aghwar                               | 11.42         | 4.52          | 3.90          | 2.69          |                                                           |
| Bethlehem and Hebron                              | 32.99         | 25.53         | 25.12         | 24.23         |                                                           |
| <b>Gaza Strip</b>                                 | <b>88.98</b>  | <b>90.10</b>  | <b>80.80</b>  | <b>78.15</b>  |                                                           |

<sup>(1)</sup> Exclude those parts of Jerusalem, which were annexed by Israel in 1967.

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<sup>(1)</sup>

Source: Palestinian Water Authority, 2008. Water Database. Ramallah - Palestine.

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**Table 7: Quantity of Water Supply for Domestic Sector in the Palestinian Territory by Governorate and Source, 2008**Unit: milion m<sup>3</sup>/year/ <sup>3</sup> :

| Governorate                    | Total         | Source                          |                               |                             |     |
|--------------------------------|---------------|---------------------------------|-------------------------------|-----------------------------|-----|
|                                |               | (3)<br>Purchased <sup>(3)</sup> | (2)<br>Springs <sup>(2)</sup> | (1)<br>Wells <sup>(1)</sup> |     |
| <b>Palestinian Territory</b>   | <b>185.51</b> | <b>52.82</b>                    | <b>12.39</b>                  | <b>120.30</b>               | (4) |
| <b>West Bank<sup>(4)</sup></b> | <b>96.53</b>  | <b>48.02</b>                    | <b>12.39</b>                  | <b>36.12</b>                |     |
| Jenin                          | 4.32          | 1.98                            | 0.13                          | 2.21                        |     |
| Tubas                          | 1.46          | 0.18                            | 1.22                          | 0.06                        |     |
| Tulkarm                        | 4.19          | 0.35                            | -                             | 3.84                        |     |
| Nablus                         | 12.40         | 3.81                            | 1.02                          | 7.57                        |     |
| Qalqiliya                      | 4.89          | 0.54                            | -                             | 4.35                        |     |
| Salfit                         | 2.17          | 2.02                            | 0.15                          | -                           |     |
| Ramallah & Al-Bireh            | 18.88         | 15.20                           | 0.24                          | 3.44                        |     |
| Jericho & Al-Aghwar            | 11.42         | 1.80                            | 9.62                          | -                           |     |
| Jerusalem J <sub>2</sub>       | 3.81          | 3.81                            | -                             | -                           |     |
| Bethlehem                      | 20.30         | 8.19                            | 0.01                          | 12.10                       |     |
| Hebron                         | 12.69         | 10.14                           | -                             | 2.55                        |     |
| <b>Gaza Strip</b>              | <b>88.98</b>  | <b>4.80</b>                     | <b>-</b>                      | <b>84.18</b>                |     |

<sup>(1)</sup> Represents water quantities pumped from wells with domestic permits.

(1)

<sup>(2)</sup> Includes water quantity discharged from springs and used to supply some localities through public networks.

(2)

<sup>(3)</sup> Includes the pumped water from the wells which are located in the Palestinian Territory and controlled by Mekorot.

(3)

<sup>(4)</sup> Exclude those parts of Jerusalem, which were annexed by Israel in 1967.

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(4)

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

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2008

:8

**Table 8: Quantity of Water Supply for Domestic Sector and Population and Daily Allocation per Capita in the Palestinian Territory by Governorate, 2008**

| Governorate                    | ( / / )<br>Daily allocation per capita<br>(liter/capita/day) | (2008/07/01)<br>Population (01/07/2008) | ( <sup>3</sup> )<br>Quantity of water supply for domestic<br>sector (Million m <sup>3</sup> ) |     |
|--------------------------------|--------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------|-----|
| <b>Palestinian Territory</b>   | <b>141.3</b>                                                 | <b>3,596,688</b>                        | <b>185.51</b>                                                                                 | (1) |
| <b>West Bank<sup>(1)</sup></b> | <b>122.6</b>                                                 | <b>2,156,356</b>                        | <b>96.53</b>                                                                                  |     |
| Jenin                          | 45.5                                                         | 260,216                                 | 4.32                                                                                          |     |
| Tubas                          | 78.1                                                         | 51,192                                  | 1.46                                                                                          |     |
| Tulkarm                        | 71.9                                                         | 159,594                                 | 4.19                                                                                          |     |
| Nablus                         | 104.6                                                        | 324,816                                 | 12.4                                                                                          |     |
| Qalqiliya                      | 144.8                                                        | 92,506                                  | 4.89                                                                                          |     |
| Salfit                         | 98.6                                                         | 60,309                                  | 2.17                                                                                          |     |
| Ramallah & Al-Bireh            | 182.0                                                        | 284,195                                 | 18.88                                                                                         |     |
| Jericho & Al-Aghwar            | 728.2                                                        | 42,964                                  | 11.42                                                                                         |     |
| Jerusalem J <sub>2</sub>       | 74.8                                                         | 139,570                                 | 3.81                                                                                          |     |
| Bethlehem                      | 311.0                                                        | 178,853                                 | 20.30                                                                                         |     |
| Hebron                         | 61.8                                                         | 562,141                                 | 12.69                                                                                         |     |
| <b>Gaza Strip</b>              | <b>169.3</b>                                                 | <b>1,440,332</b>                        | <b>88.98</b>                                                                                  |     |

<sup>(1)</sup> Exclude those parts of Jerusalem, which were annexed by Israel in 1967.

.1967

(1)

Sources: Palestinian Center Bureau of Statistics 2008. The Population, Housing, and Establishment Census - 2007, Press Conference on the Preliminary Findings.(Population, Buildings, Housing Units and Establishments), Ramallah – Palestine;

2007

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Palestinian Water Authority, 2007. Unpublished Data. Ramallah - Palestine.

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**2007** **:9**  
**Table 9: Chemical Properties for Wells Water in the West Bank by Governorate, 2007**

| Governorate <sup>(1)</sup> | Concentration (mg/Liter) ( / ) |               |                    |               | (1) |
|----------------------------|--------------------------------|---------------|--------------------|---------------|-----|
|                            | Sulphate (SO4)                 | Nitrate (NO3) | Bicarbonate (HCO3) | Chlorine (Cl) |     |
| <b>West Bank</b>           | <b>43.6</b>                    | <b>24.7</b>   | <b>198.7</b>       | <b>166.7</b>  |     |
| Jenin                      | 29.2                           | 22.3          | 211.5              | 107.1         |     |
| Tubas                      | 24.8                           | 14.1          | 164.9              | 47.1          |     |
| Tulkarm                    | 16.3                           | 34.4          | 223.1              | 72.7          |     |
| Nablus                     | 22.3                           | 13.6          | 183.1              | 52.0          |     |
| Qalqiliya                  | 11.4                           | 31.2          | 242.6              | 69.7          |     |
| Ramallah & Al-Bireh        | 8.8                            | 15.5          | 186.1              | 38.7          |     |
| Jericho & Al-Aghwar        | 220.6                          | 44.0          | 140.8              | 1,016.2       |     |
| Bethlehem                  | 21.4                           | 7.3           | 222.6              | 34.0          |     |
| Hebron                     | 37.6                           | 40.0          | 213.7              | 63.0          |     |

<sup>(1)</sup> The domestic wells existence is restricted to the governorates mentioned in this table.

(1)

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

.2008

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**2007** **:10**  
**Table 10: Chemical Properties for Springs Water in the West Bank by Governorate, 2007**

| Governorate <sup>(1)</sup> | Concentration (mg/Liter) ( / ) |               |                    |               | (1) |
|----------------------------|--------------------------------|---------------|--------------------|---------------|-----|
|                            | Sulphate (SO4)                 | Nitrate (NO3) | Bicarbonate (HCO3) | Chlorine (Cl) |     |
| <b>West Bank</b>           | ..                             | ..            | ..                 | ..            |     |
| Jenin                      | 22.7                           | 24.0          | 235.5              | 56.7          |     |
| Tubas                      | 25.7                           | 17.1          | 162.6              | 61.4          |     |
| Nablus                     | 24.7                           | 21.3          | 161.9              | 58.6          |     |
| Salfit                     | 45.9                           | 38.0          | 148.9              | 56.7          |     |
| Ramallah & Al-Bireh        | 48.4                           | 102.8         | 231.2              | 115.2         |     |
| Jericho & Al-Aghwar        | 25.2                           | 26.0          | 198.5              | 49.6          |     |
| Bethlehem                  | ..                             | ..            | ..                 | ..            |     |
| Hebron                     | ..                             | ..            | ..                 | ..            |     |

<sup>(1)</sup> Include only the Tested Springs in the governorates mentioned in this table.

(1)

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

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2007 :11  
**Table 11: Physical Properties for Wells Water in the West Bank by Governorate, 2007**

| Governorate <sup>(1)</sup> | Acidity (pH) | ( ° )<br>Temperature (°C) | ( / )<br>Electrical conductivity (s/cm) | (1) |
|----------------------------|--------------|---------------------------|-----------------------------------------|-----|
| <b>West Bank</b>           | ..           | <b>23.5</b>               | ..                                      |     |
| Jenin                      | 7.3          | 22.3                      | 971.1                                   |     |
| Tubas                      | 7.3          | 24.0                      | 612.0                                   |     |
| Tulkarm                    | 7.3          | 23.0                      | 739.6                                   |     |
| Nablus                     | 7.2          | 23.1                      | 597.1                                   |     |
| Qalqiliya                  | 7.2          | 23.4                      | 748.9                                   |     |
| Ramallah & Al-Bireh        | 7.4          | 22.0                      | 427.9                                   |     |
| Jericho & Al-Aghwar        | 7.4          | 26.8                      | 4,125.0                                 |     |
| Bethlehem                  | ..           | 23.8                      | ..                                      |     |
| Hebron                     | ..           | 22.7                      | ..                                      |     |

<sup>(1)</sup> The domestic wells existence is restricted to the governorates mentioned in this table.

(1)

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

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**2007** **:12**  
**Table 12: Physical Properties for Springs Water in the West Bank by Governorate, 2007**

| Governorate <sup>(1)</sup> | Acidity (pH) | ( ° )<br>Temperature (°C) | ( / )<br>Electrical conductivity EC (s/cm) | (1) |
|----------------------------|--------------|---------------------------|--------------------------------------------|-----|
| <b>West Bank</b>           | ..           | ..                        | ..                                         |     |
| Jenin                      | 7.5          | 18.0                      | 614.5                                      |     |
| Tubas                      | 7.0          | 24.0                      | 645.5                                      |     |
| Tulkarm                    | ..           | 23.6                      | ..                                         |     |
| Nablus                     | 7.4          | 21.0                      | 550.7                                      |     |
| Salfit                     | ..           | ..                        | ..                                         |     |
| Ramallah & Al-Bireh        | 7.6          | 21.0                      | 1,018.0                                    |     |
| Jericho & Al-Aghwar        | 7.4          | 21.7                      | 579.5                                      |     |
| Bethlehem                  | ..           | ..                        | ..                                         |     |
| Hebron                     | ..           | ..                        | ..                                         |     |

<sup>(1)</sup> Include only the Tested Springs in the governorates mentioned in this table.

(1)

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

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2008

:13

Table 13: Biological Properties of Water Wells and Springs Used for Domestic Purposes in the West Bank by Governorate, 2008

| Governorate              | Springs                                                     |                                                               |                                                | Wells                                                       |                                                             |                                                |                |
|--------------------------|-------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------|----------------|
|                          | Number of samples polluted by Total Coliform Bacteria (T.C) | Number of samples polluted by Fecal Coliform Bacteria ( F.C ) | (1)<br>Number of tested samples <sup>(1)</sup> | Number of samples polluted by Total Coliform Bacteria (T.C) | Number of samples polluted by Fecal Coliform Bacteria (F.C) | (1)<br>Number of tested samples <sup>(1)</sup> |                |
| <b>West Bank</b>         | ..                                                          | ..                                                            | ..                                             | ..                                                          | ..                                                          | ..                                             | J <sub>2</sub> |
| Jenin                    | -                                                           | -                                                             | 2                                              | 9                                                           | -                                                           | 12                                             |                |
| Tubas                    | ..                                                          | .                                                             | ..                                             | ..                                                          | ..                                                          | ..                                             |                |
| Tulkarem                 | ..                                                          | ..                                                            | ..                                             | 3                                                           | 1                                                           | 29                                             |                |
| Nablus                   | 23                                                          | 11                                                            | 26                                             | 2                                                           | 0                                                           | 8                                              |                |
| Qalqiliya                | ..                                                          | ..                                                            | ..                                             | 2                                                           | -                                                           | 12                                             |                |
| Salfit                   | 2                                                           | 1                                                             | 3                                              | ..                                                          | ..                                                          | ..                                             |                |
| Ramallah & Al-Bireh      | 6                                                           | 3                                                             | 6                                              | 5                                                           | 1                                                           | 8                                              |                |
| Jericho & Al-Aghwar      | 3                                                           | 1                                                             | 3                                              | 12                                                          | -                                                           | 14                                             |                |
| Jerusalem J <sub>2</sub> | ..                                                          | ..                                                            | ..                                             | ..                                                          | ..                                                          | ..                                             |                |
| Bethlehem                | 1                                                           | -                                                             | ..                                             | -                                                           | -                                                           | 7                                              |                |
| Hebron                   | ..                                                          | ..                                                            | ..                                             | 2                                                           | -                                                           | 6                                              |                |

<sup>(1)</sup> The sample is considered polluted if the average number of Fecal Coliform Bacteria reaches more than 0 per (100ml) and if the average number of Total Coliform Bacteria was more than 5 per (100ml). Keep in mind that the samples were tested for pollution by Total Coliform Bacteria and pollution by Fecal Coliform Bacteria.

( 100) 0

(1)

.( 100) 5

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

. 2008 :

2008 ( ) :14  
**Table 14: Price of Water Purchased From Israeli Water Company (Mekorot) in the Palestinian Territory by Region and Type of Use, 2008**

Unit: NIS/m<sup>3</sup>

3 / :

| Region                       | Type of Use                        |            |                |
|------------------------------|------------------------------------|------------|----------------|
|                              | (1)<br>Agricultural <sup>(1)</sup> | Domestic   |                |
| <b>Palestinian Territory</b> | <b>0.4</b>                         | <b>2.6</b> |                |
| West Bank <sup>(2)</sup>     | 0.4                                | 2.4        | (2)            |
| Jerusalem J <sub>2</sub>     | -                                  | 3.9        | J <sub>2</sub> |
| Gaza Strip                   | -                                  | 2.1        |                |

<sup>(1)</sup> Only Tubas district purchases water from (Mekorot) company for agricultural use.

<sup>(2)</sup> Exclude those parts of Jerusalem, which were annexed by Israel in 1967.

Source: Palestinian Water Authority, 2008. Unpublished Data. Ramallah - Palestine.

2008

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:15

Table 15: Evaporation Quantity (mm) in the West Bank by Month and Station Location, 2008

| Month        | Station Location |                |                |                |           |                |  |
|--------------|------------------|----------------|----------------|----------------|-----------|----------------|--|
|              | Hebron           | Jericho        | Ramallah       | Nablus         | Tulkarm   | Jenin          |  |
| January      | 50.5             | 62.6           | 56.0           | 63.8           | ..        | 64.3           |  |
| February     | 79.6             | 75.5           | 86.5           | 89.2           | ..        | 68.5           |  |
| March        | 174.6            | 151.0          | 171.5          | 149.8          | ..        | 143.6          |  |
| April        | 208.8            | 209.8          | 237.8          | 189.0          | ..        | 170.8          |  |
| May          | 203.8            | 259.0          | 272.4          | 197.0          | ..        | 197.9          |  |
| June         | 235.0            | 300.0          | 317.2          | 242.3          | ..        | 208.3          |  |
| July         | 266.5            | 308.9          | 283.9          | 230.0          | ..        | 283.0          |  |
| August       | 234.0            | 291.3          | 277.6          | 202.8          | ..        | 218.4          |  |
| September    | 193.0            | 224.1          | 203.5          | 155.4          | ..        | 163.9          |  |
| October      | 138.4            | 144.2          | 136.7          | 104.7          | ..        | 141.1          |  |
| November     | 126.8            | 91.5           | 127.2          | 82.8           | ..        | 104.0          |  |
| December     | 92.5             | 74.8           | 105.9          | 108.3          | ..        | 81.0           |  |
| <b>Total</b> | <b>2,003.5</b>   | <b>2,192.7</b> | <b>2,276.2</b> | <b>1,815.1</b> | <b>..</b> | <b>1,844.8</b> |  |

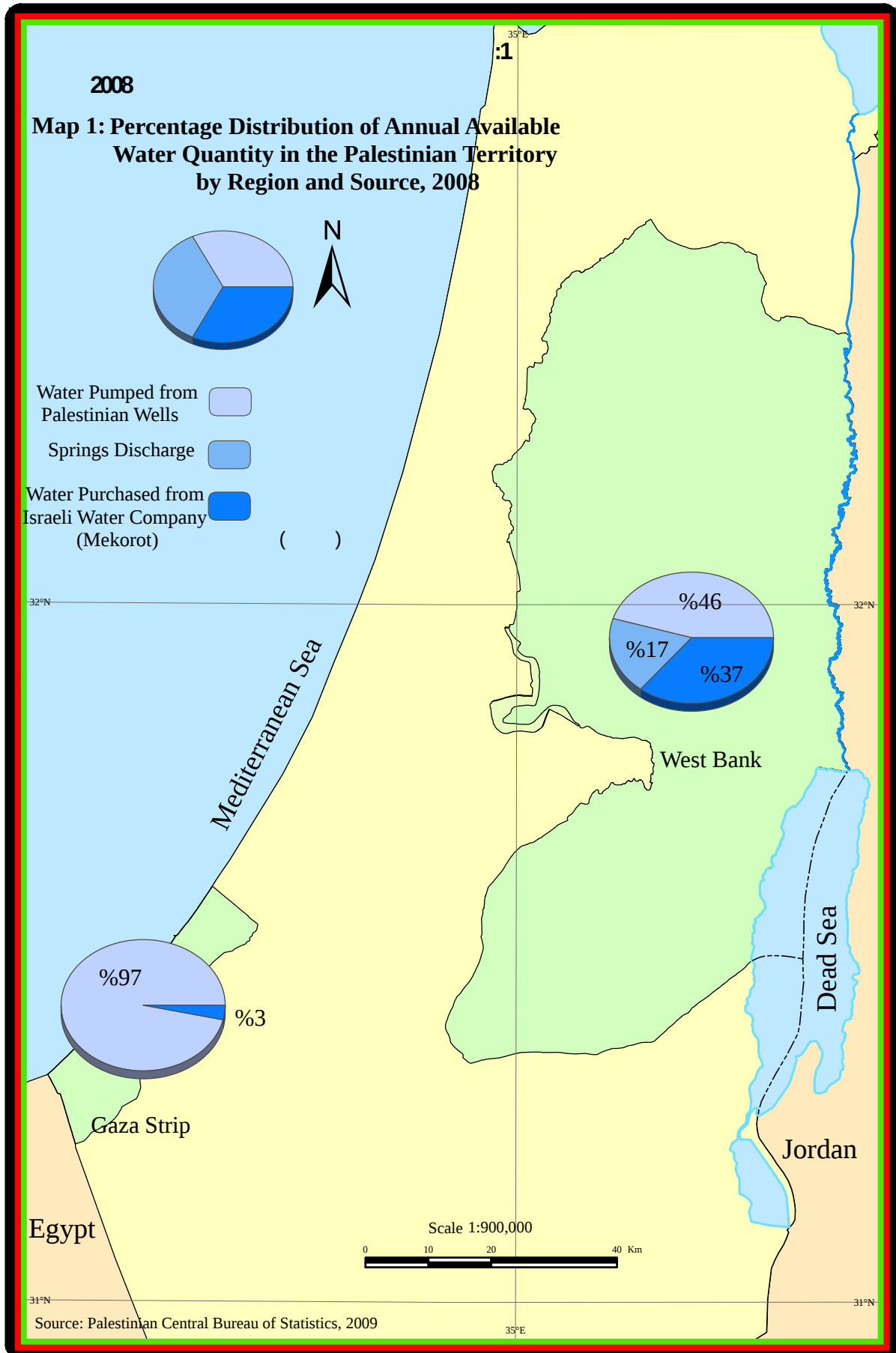
2008 ( ) :16  
**Table 16: Rainfall Quantity (mm) in the West Bank by Month and Station Location, 2008**

| Month        | Station Location |              |              |              |              |              |  |
|--------------|------------------|--------------|--------------|--------------|--------------|--------------|--|
|              | Hebron           | Jericho      | Ramallah     | Nablus       | Tulkarm      | Jenin        |  |
| January      | 151.1            | 52.5         | 224.8        | 157.7        | 77.8         | 101.5        |  |
| February     | 108.8            | 34.3         | 144.4        | 104.7        | 104.0        | 74.3         |  |
| March        | 0.6              | 0.0          | 1.5          | 6.0          | 10.5         | 11.1         |  |
| April        | 0.0              | 0.0          | 0.7          | 0.0          | 0.0          | 0.0          |  |
| May          | 0.0              | 0.0          | 0.0          | 0.0          | 2.1          | 1.0          |  |
| June         | 0.0              | 0.0          | 0.0          | 0.0          | 0.0          | 0.0          |  |
| July         | 0.0              | 0.0          | 0.0          | 0.0          | 0.0          | 0.0          |  |
| August       | 0.0              | 0.0          | 0.0          | 0.0          | 0.0          | 0.0          |  |
| September    | 7.8              | 0.2          | 10.2         | 11.0         | 10.5         | 5.0          |  |
| October      | 35.2             | 20.0         | 26.0         | 23.3         | 18.3         | 15.3         |  |
| November     | 22.5             | 6.2          | 11.5         | 4.2          | 32.7         | 17.8         |  |
| December     | 50.3             | 5.6          | 84.5         | 153.3        | 151.0        | 58.8         |  |
| <b>Total</b> | <b>376.3</b>     | <b>118.8</b> | <b>503.6</b> | <b>460.2</b> | <b>406.9</b> | <b>284.8</b> |  |

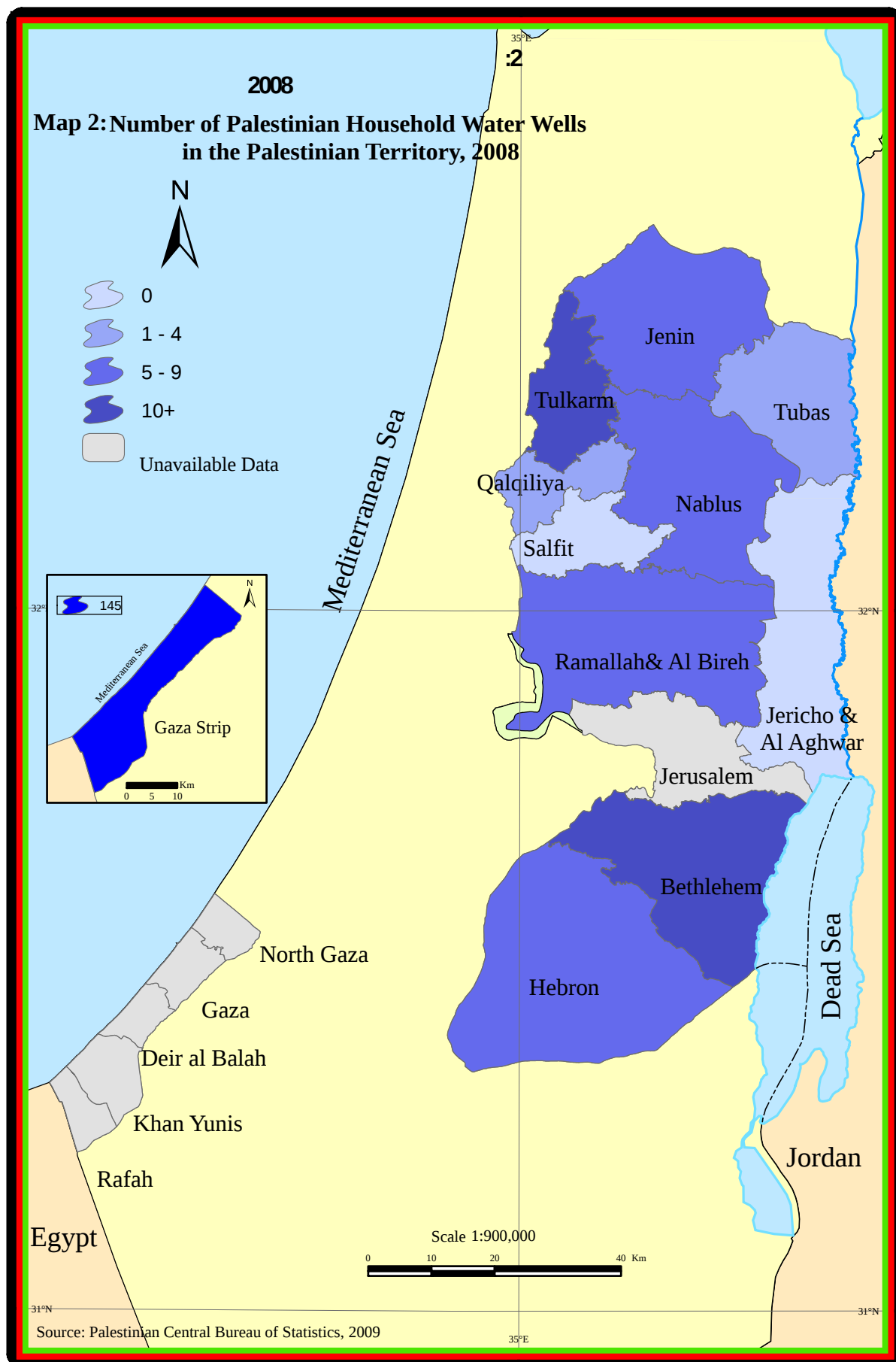


# Maps











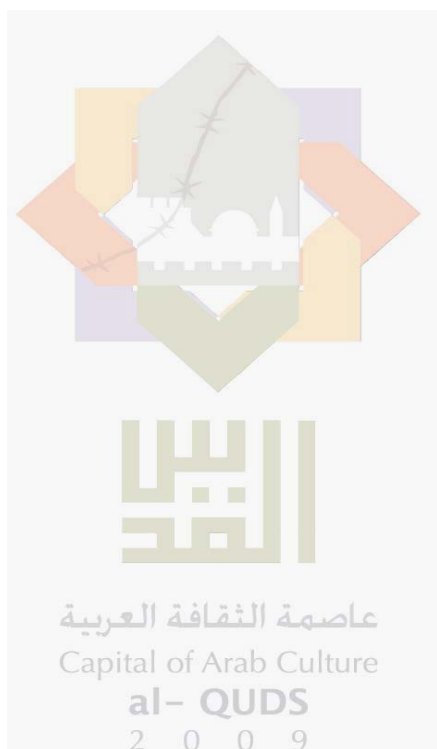
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Palestinian Central Bureau of Statistics**

**Water Statistics in the Palestinian Territory  
Annual Report, 2008**

**September, 2009**

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## **Preface**

PCBS is pleased to release this specialized statistical report on Water in the Palestinian Territory. This report has been prepared in accordance within the framework of our official efforts for creating and establishing the National Statistical System, and providing the necessary statistics to Palestinian policy planners and decision makers in water, environment and natural resources sector.

Water is considered to be one of the most important and sensitive issues in the Middle East, due to increasing water deficiency and deterioration of the available water. Water resources are very limited and do not meet the needs of the existing population, much less generations to come.

This is a more obvious and acute problem in the Palestinian Territory, where Palestinians suffer from water deficiency, and have no control on their limited resources resulting in Palestinians being deprived from legal water rights. The importance of providing accurate statistical data about this subject becomes a necessity.

This report forms one of a series to be published by PCBS on Natural Resources as a part of the requirements set by the Master Plan. This series aims to provide the necessary data that describe the status of the natural resources in the Palestinian Territory and including the basic characteristics of water situation and the substantive factors affecting it. This report presents statistical data about water resource indicators including quantities of consumed and purchased water, spring discharge, and other indicators.

PCBS hopes that the data of this report will assist the Palestinian planners and decision makers in natural resources domain to improve water status and to provide reliable and useful statistics.

**September, 2009**

**Ola Awad  
Acting President**



## Table of Contents

| Subject           | Page                                   |
|-------------------|----------------------------------------|
| List of Tables    |                                        |
| List of Figures   |                                        |
| List of Maps      |                                        |
| Executive Summary |                                        |
| Chapter One:      | <b>Introduction</b> [19]               |
|                   | 1.1 Introduction [19]                  |
|                   | 1.2 Aims of the Report [19]            |
|                   | 1.3 Report Structure [19]              |
| Chapter Two:      | <b>Concepts and Definitions</b> [21]   |
| Chapter Three:    | <b>Main Findings</b> [23]              |
|                   | 3.1 Water Resources [23]               |
|                   | 3.2 Water Supply for Domestic Use [24] |
|                   | 3.3 Water Price [24]                   |
|                   | 3.4 Rainfall [24]                      |
|                   | 3.5 Evaporation [25]                   |
| Chapter Four:     | <b>Methodology</b> [27]                |
|                   | 4.1 Methodology of the Report [27]     |
|                   | 4.2 Data Source [27]                   |
|                   | 4.3 Data Processing [27]               |
| Chapter Five:     | <b>Data Quality</b> [29]               |
|                   | 5.1 Accuracy of the Data [29]          |
|                   | 5.2 Comparison of the Data [29]        |
|                   | 5.3 Technical Notes [29]               |
|                   | <b>References</b> [31]                 |
|                   | <b>Tables</b> 37                       |
|                   | <b>Maps</b> 55                         |



## List of Tables

| Table                                                                                                                                                               | Page |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| <b>Table 1:</b> Selected Indicators for Water Statistics in the Palestinian Territory 2002 – 2008                                                                   | 39   |
| <b>Table 2:</b> Annual Available Water Quantity in the Palestinian Territory by Region and Source, 2008                                                             | 39   |
| <b>Table 3:</b> Number of Palestinian Water Wells and it's Annual Pumping Quantity in the Palestinian Territory by Governorate and Use, 2008                        | 40   |
| <b>Table 4:</b> Number of Springs and it's Annual Discharge in the Palestinian Territory by Governorate and Year, 2006 - 2008                                       | 41   |
| <b>Table 5:</b> Quantity of Water Purchased From Israeli Water Company (Mekorot) in the Palestinian Territory for Domestic Use by Governorate and Year, 2004 - 2008 | 42   |
| <b>Table 6:</b> Quantity of Water Supply for Domestic Sector in the Palestinian Territory by Governorate and Year, 2005 - 2008                                      | 43   |
| <b>Table 7:</b> Quantity of Water Supply for Domestic Sector in the Palestinian Territory by Governorate and Source, 2008                                           | 44   |
| <b>Table 8:</b> Quantity of Water Supply for Domestic Sector and Population and Daily Allocation per Capita in the Palestinian Territory by Governorate, 2008       | 45   |
| <b>Table 9:</b> Chemical Properties for Wells Water in the West Bank by Governorate 2007                                                                            | 46   |
| <b>Table 10:</b> Chemical Properties for Springs Water in the West Bank by Governorate 2007                                                                         | 47   |
| <b>Table 11:</b> Physical Properties for Wells Water in the West Bank by Governorate 2007                                                                           | 48   |
| <b>Table 12:</b> Physical Properties for Springs Water in the West Bank by Governorate 2007                                                                         | 49   |
| <b>Table 13:</b> Biological Properties of Water Wells and Springs Used for Domestic Purposes in the West Bank by Governorate, 2008                                  | 50   |
| <b>Table 14:</b> Price of Water Purchased From Israeli Water Company (Mekorot) in the Palestinian Territory by Region and Type of Use, 2008                         | 51   |
| <b>Table 15:</b> Evaporation Quantity (mm) in the Palestinian Territory by Month and Station Location, 2008                                                         | 52   |
| <b>Table 16:</b> Rainfall Quantity (mm) in the Palestinian Territory by Month and Station Location, 2008                                                            | 53   |



## **List of Figures**

| <b>Figure</b>    |                                                                                                 | <b>Page</b> |
|------------------|-------------------------------------------------------------------------------------------------|-------------|
| <b>Figure 1:</b> | Percentage Distribution of Water Resources in the Palestinian Territory, 2008                   | <b>23</b>   |
| <b>Figure 2:</b> | Annual Quantity of Water Supply for Domestic Sector in the Palestinian Territory, (2005 – 2008) | <b>24</b>   |
| <b>Figure 3:</b> | Annual Quantity of Rainfall in the Palestinian Territory by Station Location, 2008              | <b>25</b>   |



## **List of Maps**

| <b>Map</b>    |                                                                                                                    | <b>Page</b> |
|---------------|--------------------------------------------------------------------------------------------------------------------|-------------|
| <b>Map 1:</b> | Percentage Distribution of Annual Available Water Quantity in the Palestinian Territory by Region and Source, 2008 | <b>57</b>   |
| <b>Map 2:</b> | Number of Palestinian household Water Wells in the Palestinian Territory, 2008                                     | <b>59</b>   |



## Executive Summary

Water resources in the Palestinian Territory are restricted mainly to ground water that extracted from wells and springs and water purchased from the Israeli Water Company (Mekorot), the total water quantity obtained from these two sources in 2008 was 308.7 million m<sup>3</sup>, compared to 335.4 million m<sup>3</sup> in 2007, and 319.1 million m<sup>3</sup> in 2006.

Wells are considered the most important source, 225.7 million m<sup>3</sup> of water were pumped from water wells and that represents 73.1% of water resources. The quantity of water purchased from the Israeli Water Company (Mekorot) around 57.8 million m<sup>3</sup> and represented 18.7% of water resources, finally springs represent the third most important source with an annual discharge of 25.2 million m<sup>3</sup> representing 8.2% of water resources in the Palestinian Territory.

In the West Bank 325 wells pumped 66.3 million m<sup>3</sup> of water. Distributed by type of use, results were 36.1 million m<sup>3</sup> for domestic use, and 30.2 million m<sup>3</sup> for agricultural use. The quantity of water pumped in the Palestinian Territory in 2007 was 241.2 million m<sup>3</sup> for all uses.

Data shows that the maximum average annual discharges of springs for the years (2006 – 2008) was 51.7 million m<sup>3</sup> in 2006, while the average annual discharges of springs was 44.8 million m<sup>3</sup> in 2007, the average of annual discharges was 25.2 million m<sup>3</sup> in 2008.

Data shows that the quantity of water purchased from Israeli Water Company (Mekorot) for domestic use was 43.9 million m<sup>3</sup> in 2006 and increasing over the next two years 2007 and 2008 to 49.4 and 52.8 million m<sup>3</sup> respectively.

Data shows that the quantity of water supplied for domestic use in the Palestinian Territory was 185.5 million m<sup>3</sup> in 2008, of which 96.5 million m<sup>3</sup> was in the West Bank and 89.0 million m<sup>3</sup> in Gaza Strip. In 2007 it decreased to 175.6 million m<sup>3</sup>, of which 85.5 million m<sup>3</sup> was in the West Bank and 90.1 million m<sup>3</sup> was in Gaza Strip.



## Chapter One

### Introduction

#### 1.1 Introduction

Water resources in the Palestinian Territory are limited and controlled by the Israeli authority, which deprives the Palestinians from their legal share of water.

PCBS worked on providing statistical data about the water sector in the Palestinian Territory, especially regarding available and allocated quantities in order to have a base for future analytical studies concerning Palestinian water rights and development projects.

#### 1.2 Aims of the report

The main objective of this report is to provide statistical data related to the water status in the Palestinian Territory that covers the following indicators:

- Quantity of water pumped from wells
- Quantity of water discharged from springs
- Quantity of water purchased from Israeli Water Company (Mekorot)
- Quantity of supplied and consumed water
- Water Quality
- Water Prices

#### 1.3 Report Structure

This report is divided into five chapters. The first chapter contains the introduction, aims and report structure. The second chapter contains the concepts and definitions in this report. The third chapter defines the main findings of the report. The fourth chapter explains the methodology for collection and tabulation. The fifth chapter handles data quality through spreading the main notes on the data and estimations of the data sources of this report.



## Chapter Two

### Concepts and Definitions

This section presents the main concepts and definitions used to derive the main indicators of water statistics from different sources. These concepts and definitions are based on international recommendations in the field of water statistics, and they are the same in all subjects in Palestinian Central Bureau of Statistics. The main concepts and expressions mentioned in this report were as follows:

#### **Groundwater**

It is water (fresh or brackish) beneath earth surface (usually in aquifers) supplying wells and springs.

#### **Pumped Water**

It is quantity of water that pumped from groundwater wells.

#### **Springs**

It is water that discharged from the ground at an intersection point between the topographic surface and the ground water table, it could be permanent or seasonal.

#### **Supplied Water**

It is quantity of water, which has been distributed from its different resources after collection and treatment for consumers (industrial and commercial establishment, irrigation utilities and public institutions).

#### **Daily Allocation of water per Capita**

It is the amount of obtained by the individual supplied water for domestic sector, and is calculated as follows:

Daily allocation of water per capita (Liter):  $\text{Annual quantity of water supply for domestic sector (Million m}^3\text{)} \times 10^9 / (365 \times \text{Population})$ .

#### **Electrical Conductivity**

It is the ability of water to transmit electric current, where the ions of dissolved salts facilitates the flow of electrons. It is the reciprocal of electrical resistivity and measured by s/cm.

#### **Chemical Quality**

It is the concentration of the different chemical elements of dissolved salts in water. It is measured by mg/l.

#### **Rain**

It is water falling from the atmosphere and deposited on land or water surfaces.

#### **mm "Rain "**

It is 1 liter of water falling on 1 m<sup>2</sup> area.

#### **Evaporation**

It is transformation of liquid water to invisible gas is known as water vapor by the effect of heat and the process is called evaporation. The monthly amount of evaporation is defined as the depth or the thickness of water in (mm), that is lost by the liquid in a month in a specific geographic area.

## **West Bank**

It is divided into 11 Governorates (Jenin, Tubas, Tulkarm, Nablus, Qalqiliya, Salfit, Ramallah & Al-Bireh, Jericho & AlAghwar, Jerusalem, Bethlehem, and Hebron).

## **Definitions of Jerusalem J1&J2**

Given the geographical and political situations in the Jerusalem governorate, it has been divided into two parts (J1, and J2).

**The first part (J1)** includes that part of Jerusalem, which was annexed forcefully by Israel following its occupation of the West Bank in 1967. This part includes the following localities: (Beit Hanina, Shu'fat Refugees Camp, Shu'fat, Al' Isawiya, Jerusalem "Al - Quds"( Sheikh Jarrah, Wadi Al - Joz, Bab Al-Sahira, As Suwwana, At -Tur, , Ash - Shayyah, Ras Al-Amud), Silwan, Ath – Thuri, Jabal Al – Mukabbir, As – Sawahira Al – Gharbiya, Beit Safafa, Sharafat, Sur Bahir, and Um Tuba and Kufr A'qab).

**The second part (J2)** Includes Jerusalem governorate except that part of Jerusalem which was forcefully Annexed by Israel following its occupation of the West Bank in 1967. This part includes the following localities: Rafat, Mikhmas, Qalandya Refugees Camp, the Bedouin Community - Jaba', Qalandya, Beit Duqqu, Jaba', Al – Judeira, Beit Anan, Al-Ram, Dahiat Al-Pareed, Al Al – Jib, Bir Nabala, Beit Ijza, Al – Qubeiba, Khirbet Um Al – Lahem, Biddu, An – Nabi Samu'eil, Hezma, Beit Hanina Al Balad, Qatanna, Beit Surik, Beit Ikse, A'nata, Al Ka'abina (the Bedouin Community – Al – Khan Al – Ahmar), Arab al Jahalin (the Bedouin Communitates, Al – Eizariya and Abu Deis), Az Za'eem, Al – Sawahreh Al – Sharqiyeh and Ash – Sheikh Sa'd.

## **Symbols in the Tables:**

(-) Nil

(0) Less than half of the unit

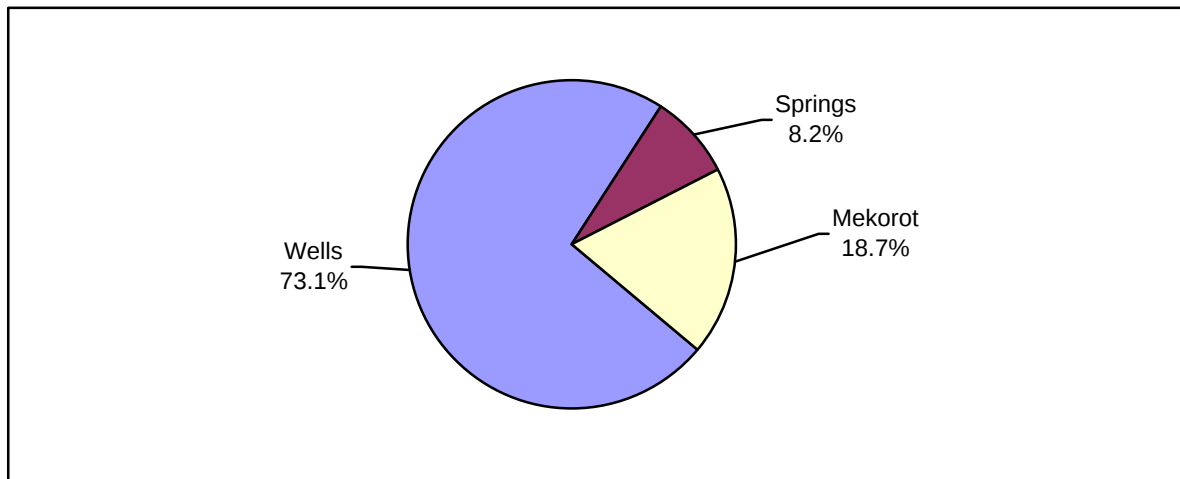
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## Main Findings

### 3.1 Water Resources

Water resources in the Palestinian Territory are restricted mainly to ground water that is extracted from wells and springs and water purchased from the Israeli Water Company (Mekorot). The total water quantity obtained from these two sources in 2008 was 308.7 million m<sup>3</sup>. Wells are considered the most important source, 225.7 million m<sup>3</sup> of water were pumped from water wells and that represents 73.1% of water resources. The quantity of water purchased from the Israeli Water Company (Mekorot) around 57.8 million m<sup>3</sup> and represented 18.7% of water resources. Finally, springs represent the third most important source with an annual discharge of 25.2 million m<sup>3</sup> representing 8.2% of water resources in the Palestinian Territory.

**Figure 1: Percentage Distribution of Water Resources in the Palestinian Territory, 2008**



The West Bank depends on spring water for domestic and agricultural uses. The production from wells in the West Bank totaled 66.3 million m<sup>3</sup> representing 45.9% of water resources in the West Bank. The discharge of water from springs was 25.2 million m<sup>3</sup> representing 17.5% of water resources in the West Bank, and the quantity of water purchased from Israeli Water Company (Mekorot) reached 52.9 million m<sup>3</sup> representing 36.6% of water resources in the West Bank. In Gaza Strip where there are no springs, water wells are the main source of water for various uses. The pumped water in Gaza Strip was approximately 159.4 million m<sup>3</sup> representing 97.2% of water resources in Gaza Strip. The quantity of water purchased from Israeli Water Company (Mekorot) was approximately 4.8 million m<sup>3</sup> and contributed 2.8% of water resources in Gaza Strip.

#### Palestinian Water Wells

The number of domestic groundwater wells in 2008 in the Palestinian Territories 198 wells, distributed among 53 wells in the West Bank and 145 wells in the Gaza Strip. The total quantity of water pumped from water wells for domestic use in the West Bank 36.1 million cubic meters against 84.2 million cubic meters in the Gaza Strip, and the quantity of water pumped for agricultural use 30.2 million cubic meters in the West Bank from 272 wells among around 75.2 million cubic meters in the Gaza Strip.

### Springs

Data shows that the maximum average annual discharges of springs for the years (2006–2008) was 51.7 million m<sup>3</sup> in 2006, 44.8 million m<sup>3</sup> in 2007, and 25.2 million m<sup>3</sup> in 2008.

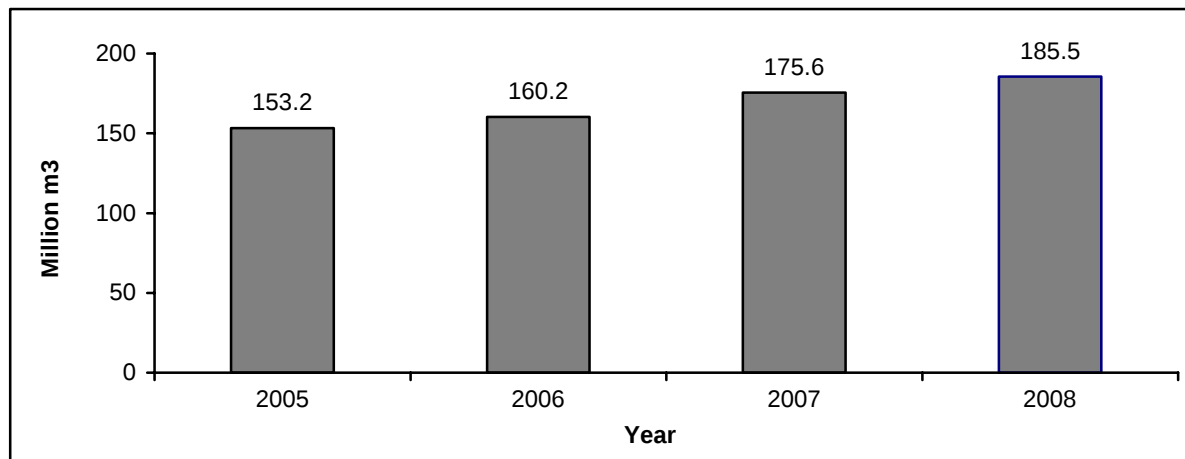
### Water Purchased from Israeli Water Company (Mekorot)

Data shows that the quantity of water purchased from Israeli Water Company (Mekorot) for domestic use was 43.9 million m<sup>3</sup> in 2006 and increasing over the next two years 2007 and 2008 to 49.4 and 52.8 million m<sup>3</sup> respectively.

### 3.2 Water Supply for Domestic Use

Data shows that the quantity of water supplied for domestic use in the Palestinian Territory was 185.5 million m<sup>3</sup> in 2008, of which 96.5 million m<sup>3</sup> was in the West Bank and 89.0 million m<sup>3</sup> in Gaza Strip. In 2007 it decreased to 175.6 million m<sup>3</sup>, of which 85.5 million m<sup>3</sup> was in the West Bank and 90.1 million m<sup>3</sup> was in Gaza Strip.

**Figure 2: Annual Quantity of Water Supply for Domestic Sector in the Palestinian Territory, (2005 – 2008)**



The sources of supplied water for domestic use in the Palestinian Territory varied during the year 2008, from dependence on water pumped from domestic and agricultural water wells for domestic use of 120.3 million m<sup>3</sup>, to water purchased from the Israeli Water Company (Mekorot) of 52.8 million m<sup>3</sup>, and finally to spring discharge of 12.4 million m<sup>3</sup>.

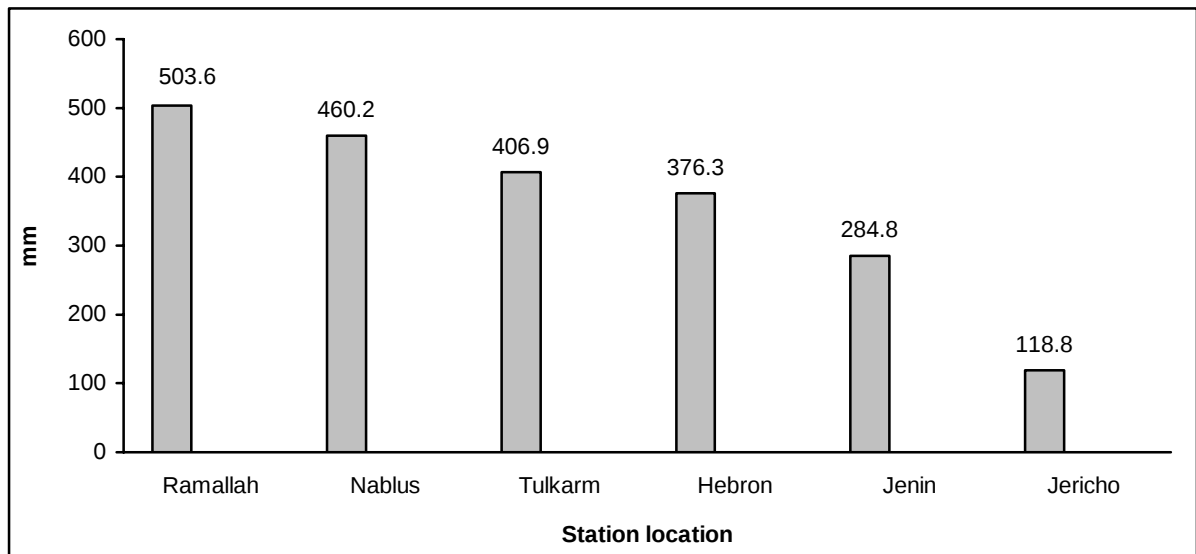
### 3.3 Water Price

Data shows in 2008 that the average price of one cubic meter of purchased water from the Israeli Water Company (Mekerot) used in the domestic sector was 2.6 NIS in the Palestinian Territory, and 0.4 NIS in the agricultural sector for the West Bank only.

### 3.4 Rainfall

The data of 2008 indicates that January has the highest rainfall quantity, while the quantity of rainfall decreased until May. As is usual in the summer months, the summer of 2008 had no rainfall. The quantities of rainfall ranges between 503.6 mm in Ramallah Station and 118.8 mm in Jericho Station.

**Figure 3: Annual Quantity of Rainfall in the Palestinian Territory by Station Location, 2008**



### **3.5 Evaporation**

The main findings indicate that for 2008 the quantity of evaporation was between 1,815 mm in Nablus Station and 2,276 mm in Ramallah Station.



## Chapter Four

### **Methodology**

#### **4.1 Methodology of the Report**

The data of this report is based primarily on administrative records of various institutions, in addition to data extracted from some surveys carried out by PCBS. After obtaining data from its sources, it was rearranged, reclassified, and then tabulated in a way to achieve the purpose of this report.

#### **4.2 Data Sources**

##### **Palestinian Water Authority**

After obtaining data from the Palestinian Water Authority, it was rearranged, reclassified, and then tabulated.

##### **Meteorological Conditions, 2008**

The indicators: Rainfall Quantity in the Palestinian Territory, and Evaporation Quantity in the Palestinian Territory.

#### **4.3 Data Processing**

Before data entry starts, an auditing process occurred to ensure data logic and completeness. Excel software is used for data processing and entry. After finishing data entry, an additional audit and check occurred on data in order to have the data file without errors and to give the technicians in the PWA the chance to revise and approve data before publishing.



## Chapter Five

### Data Quality

#### 5.1 Accuracy of the Data

Two types of errors affected the quality of the report's data, sampling and non sampling errors. Sampling errors are measurable and very limited in this report. The non-sampling errors could not be determined easily, due to the diversity of sources (e.g. the interviewers, respondents, editors, coders, data entry operators...,etc). To minimize such errors data was edited before and after the entry process.

#### Comprehensiveness

The main aim of publishing annual reports about water is to create and update the time series data of the water indicators in the Palestinian Territory. The report mainly includes the water data for 2007. Some of The available data does not cover all governorates of the Palestinian Territory.

#### 5.2 Comparison of the Data

Some comparisons were applied to data with the previous annual reports of water reports of past years which indicate some reasonable matching between the results of that reports.

#### 5.3 Technical Notes

This section presents technical notes on the quality of statistical data. Such notes are as follows:

- The unavailability of the time series for some indicators included in the report.
- It is necessary to know that, the price of water purchased from Israeli Water Company (Mekerot) is the import price.
- It is necessary to know that, the quantity of supplied water for domestic use is the quantity of purchased water from Israeli Water Company (Mekerot), the quantity of pumped water from wells, and part of water discharged from springs.
- All data for Jerusalem governorate, which is mentioned in the tables, exclude those parts of Jerusalem, which were annexed by Israel in 1967.
- Report data does not include water quantities from domestic rain collecting wells.



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