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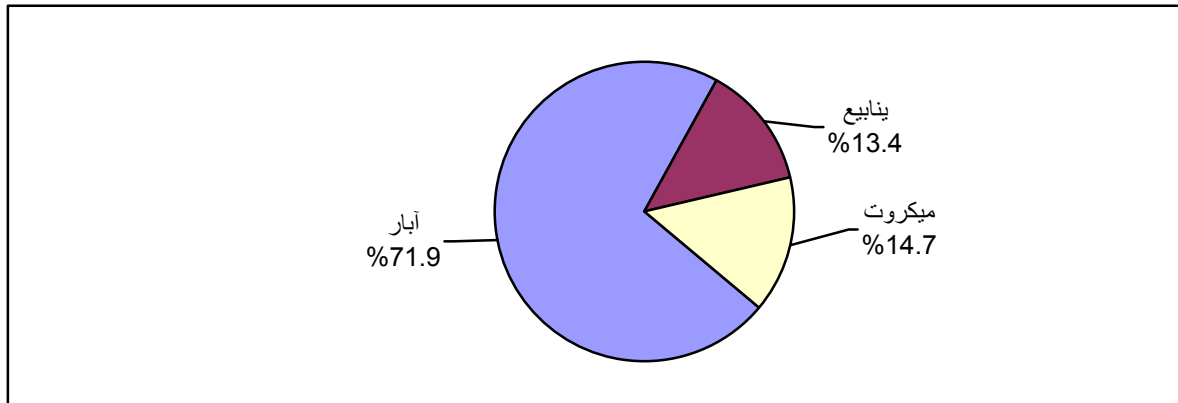


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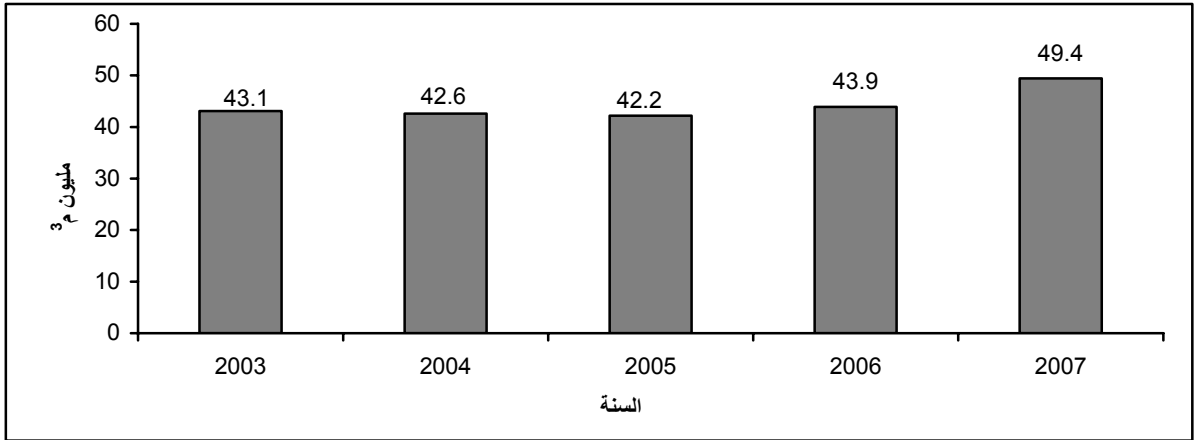
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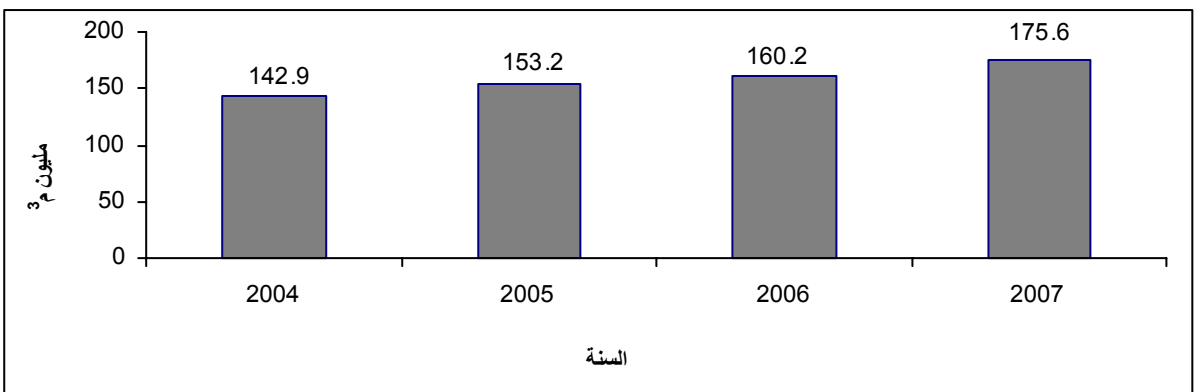
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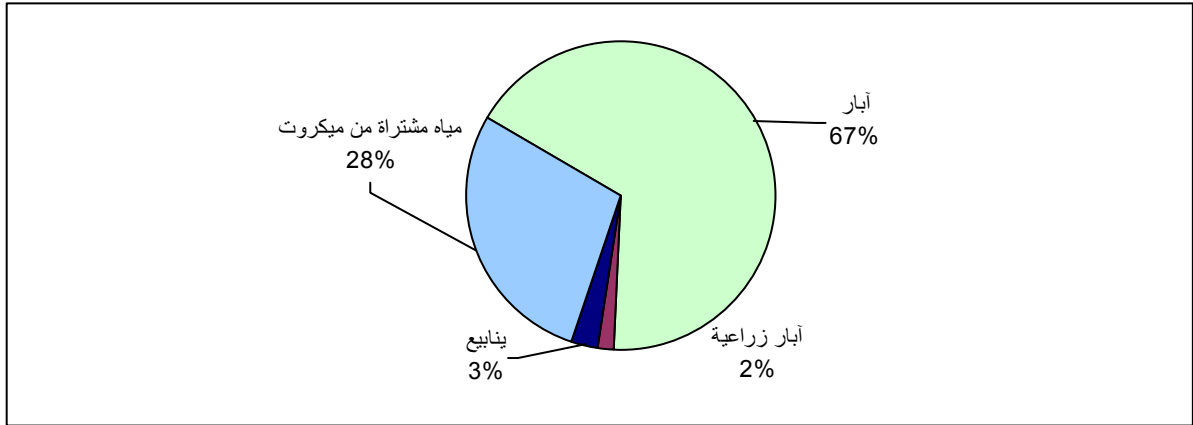
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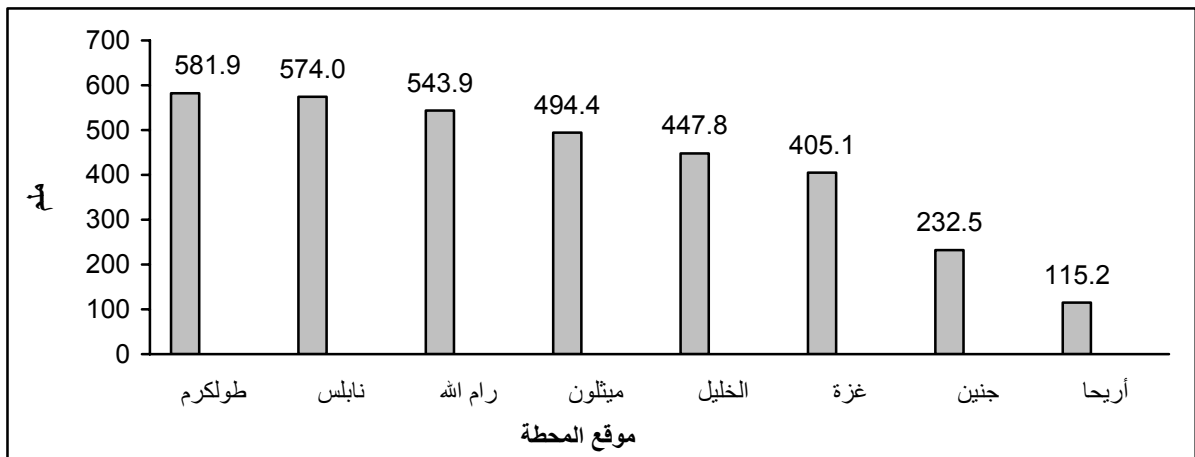
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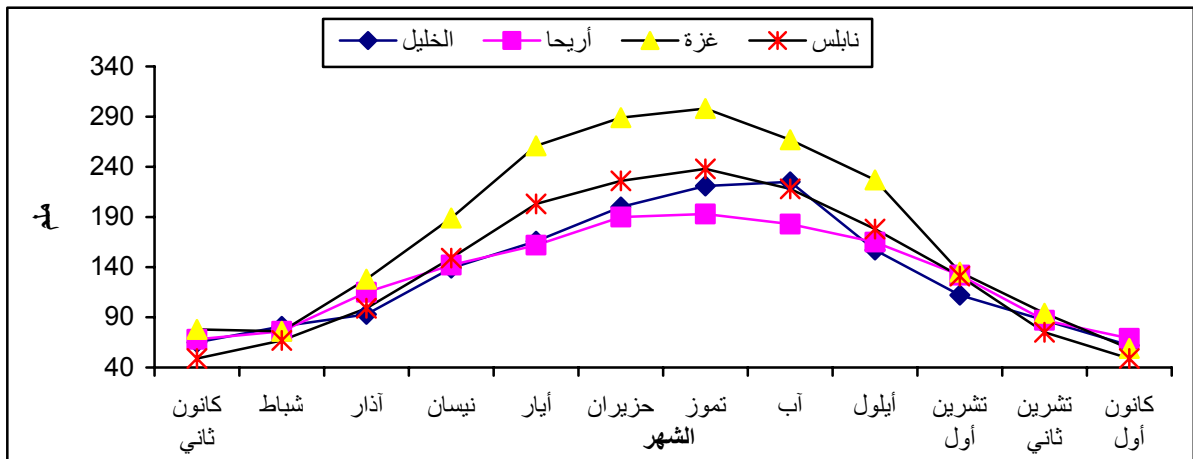
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## **Tables**



2007 -2001

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**Table 1: Selected Indicators for Water Statistics in the Palestinian Territory, 2001 – 2007**

Indicator	Year							
	2007	2006	2005	2004	2003	2002	2001	
Annual Available Water Quantity (million m <sup>3</sup> /year)	335.4	319.1	315.2	295.8	..	279.9	244.1	( / <sup>3</sup> )
Annual Pumped Quantity from Groundwater Wells (million m <sup>3</sup> /year)	241.2	223.5	214.7	196.1	..	203.4	181.2	( / <sup>3</sup> )
Annual Discharge of Springs Water (million m <sup>3</sup> /year)	44.8	51.7	53.6	52.7	60.5	38.1	25.9	( / <sup>3</sup> )
Annual Quantity of Water Purchased from Israeli Water Company (Mekorot) for Domestic Use (million m <sup>3</sup> /year)	49.4	43.9	42.2	42.6	43.1	38.4	37.0	( ) ( / <sup>3</sup> )
Annual Quantity of Water Supply for Domestic Sector (million m <sup>3</sup> /year)	175.6	160.2	153.2	142.9	..	125.2	104.0	( / <sup>3</sup> )

Source: Palestinian Water Authority, 2007. Water Database. Ramallah - Palestine.

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Table 2: Annual Available Water Quantity in the Palestinian Territory by Region and Source, 2007

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

Region	Source				
	Total	( <sup>(1)</sup> ( ) Water purchased from Israeli water company (Mekorot) <sup>(1)</sup>	Springs discharge	Water pumped from Palestinian wells	
<b>Palestinian Territory</b>	<b>335,435.4</b>	<b>49,447.0</b>	<b>44,806.4</b>	<b>241,182.0</b>	
Remaining West Bank	158,336.4	44,848.0	44,806.4	68,682.0	
Gaza Strip	177,099.0	4,599.0	-	172,500.0	

<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)

Source: Palestinian Water Authority, 2007. 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, 2007**Quantity: 1000 m<sup>3</sup>/year/<sup>3</sup> 1000 :

Governorate <sup>(1)</sup>	(2) Pumping quantity <sup>(2)</sup>			Number of wells			(1)
	Total	Agricultural	Domestic	Total	Agricultural	Domestic	
<b>Palestinian Territory</b>	<b>241,182.0</b>	<b>117,555.5</b>	<b>123,626.5</b>	<b>..</b>	<b>..</b>	<b>192</b>	
<b>Remaining West Bank</b>	<b>68,682.0</b>	<b>30,555.5</b>	<b>38,126.5</b>	<b>306</b>	<b>257</b>	<b>49</b>	
Jenin	6,868.0	3,237.9	3,630.1	55	51	4	
Tubas	1,747.8	1,558.9	188.9	8	7	1	
Tulkarem	14,558.3	9,365.0	5,193.3	63	51	12	
Nablus	7,947.9	1,155.2	6,792.7	19	14	5	
Qalqiliya	10,347.9	5,890.1	4,457.8	70	64	6	
Ramallah & Al-Bireh	3,355.8	-	3,355.8	5	-	5	
Jericho & Al-Aghwar	9,348.4	9,348.4	-	70	70	-	
Bethlehem	11,651.1	-	11,651.1	10	-	10	
Hebron	2,856.8	-	2,856.8	6	-	6	
<b>Gaza Strip<sup>(3)</sup></b>	<b>172,500.0</b>	<b>87,000.0</b>	<b>85,500.0</b>	<b>..</b>	<b>..</b>	<b>143</b>	(3)

<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>Annual pumped quantities of agricultural wells are estimates data.

(3)

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

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2007 – 2005

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**Table 4: Number of Springs and it's Annual Discharge in the Palestinian Territory by Governorate and Year, 2005 - 2007**

Governorate <sup>(1)</sup>	2007		2006		2005		(1)
	( / <sup>3</sup> 1000) Discharge (1000 m <sup>3</sup> /year)	Number of Springs	( / <sup>3</sup> 1000) Discharge (1000 m <sup>3</sup> /year)	Number of Springs	( / <sup>3</sup> 1000) Discharge (1000 m <sup>3</sup> /year)	Number of Springs	
<b>Palestinian Territory</b>	<b>44,806.4</b>	<b>125</b>	<b>51,683.0</b>	<b>126</b>	<b>53,641.3</b>	<b>126</b>	
<b>Remaining West Bank</b>	<b>44,806.4</b>	<b>125</b>	<b>51,683.0</b>	<b>126</b>	<b>53,641.3</b>	<b>126</b>	
Jenin	205.1	7	232.4	7	211.6	7	
Tubas	4,484.5	10	7,996.6	10	7,610.0	10	
Tulkarm	-	-	-	-	-	-	
Nablus	8,775.2	35	8,942.3	35	9,109.7	35	
Qalqiliya	-	-	-	-	-	-	
Salfit	245.3	5	271.7	5	278.3	5	
Ramallah & Al-Bireh	1,713.8	31	1,608.0	31	1,471.1	31	
Jericho & Al-Aghwar	25,931.9	7	29,090.6	7	31,962.7	7	
Jerusalem J <sub>2</sub>	2,645.4	4	2,530.7	4	2,107.4	4	J <sub>2</sub>
Bethlehem	550.3	15	736.2	15	681.7	15	
Hebron	254.9	11	274.5	12	208.8	12	
<b>Gaza Strip</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	

<sup>(1)</sup> Number of springs and quantity of discharged water are for the Palestinian Water Authority controlled springs.

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

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**Table 5: Quantity of Water Purchased From Israeli Water Company (Mekorot) in the Palestinian Territory for Domestic Use by Governorate and Year, 2003-3007**

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

Governorate <sup>(1)</sup>	Year					(1)
	2007	2006	2005	2004	2003	
<b>Palestinian Territory</b>	<b>49,442.2</b>	<b>43,910.0</b>	<b>42,161.2</b>	<b>42,552.1</b>	<b>43,144.4</b>	
<b>Remaining West Bank</b>	<b>44,843.2</b>	<b>39,910.0</b>	<b>38,912.9</b>	<b>38,813.3</b>	<b>39,494.7</b>	
Jenin	1,363.2	1,047.0	2,699.8	2,480.5	2,185.0	
Tubas	207.0	182.5	159.6	120.0	105.0	
Tulkarem	325.0	331.0	326.8	268.0	265.3	
Nablus	3,149.0	2,685.3	2,460.2	2,638.3	2,534.8	
Qalqiliya	466.0	408.0	353.2	272.1	335.0	
Salfit	1,879.0	1,737.0	1,664.0	1,501.4	1,298.6	
Ramallah & Al-Bireh and Jerusalem J <sub>2</sub> <sup>(2)</sup>	18,335.0	16,646.2	16,047.5	16,094.7	16,397.2	(2) J <sub>2</sub>
Jericho & Al-Aghwar	1,850.0	1,230.0	1,303.4	1,450.4	1,042.1	
Bethlehem and Hebron <sup>(3)</sup>	17,269.0	15,643.0	13,898.4	13,987.9	15,331.7	(3)
<b>Gaza strip</b>	<b>4,599.0</b>	<b>4,000.0</b>	<b>3,248.3</b>	<b>3,738.8</b>	<b>3,649.7</b>	

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

(1)

<sup>(2)</sup> of them 7,460 thousand cubic meter were purchased by Jerusalem J<sub>2</sub> Area in 2007.

.2007 J<sub>2</sub> 7,460 (2)

<sup>(3)</sup> of them 10,166 thousand cubic meter were purchased by Hebron Governorate in 2007.

.2007 10,166 (3)

Source: Palestinian Water Authority, 2006. Water Database. Ramallah - Palestine.

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**Table 6: Quantity of Water Supply for Domestic Sector in the Palestinian Territory by Governorate and Year, 2004 –2007**Unit: Milion m<sup>3</sup>/year/<sup>3</sup> :

Governorate	Year				
	2007	2006	2005	2004	
<b>Palestinian Territory</b>	<b>175.63</b>	<b>160.15</b>	<b>153.18</b>	<b>142.85</b>	
<b>Remaining West Bank</b>	<b>85.53</b>	<b>79.35</b>	<b>75.03</b>	<b>73.02</b>	
Jenin	5.30	5.00	4.79	4.93	
Tubas	0.83	0.88	0.79	0.69	
Tulkarm	8.27	7.88	6.63	6.67	
Nablus	11.02	10.47	10.85	9.84	
Qalqiliya	6.31	4.60	4.50	3.96	
Salfit	2.00	1.82	1.87	1.67	
Ramallah & Al-Bireh, and Jerusalem J <sub>2</sub>	21.75	19.68	18.68	19.98	J <sub>2</sub>
Jericho & Al-Aghwar	4.52	3.90	2.69	3.09	
Bethlehem and Hebron	25.53	25.12	24.23	22.19	
<b>Gaza Strip</b>	<b>90.10</b>	<b>80.80</b>	<b>78.15</b>	<b>69.83</b>	

Source: Palestinian Water Authority, 2006. 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, 2007**Unit: milion m<sup>3</sup>/year/<sup>3</sup> :

Governorate	Total	Source				
		(4) Purchased <sup>(4)</sup>	(3) Springs <sup>(3)</sup>	(2) Agricultural wells <sup>(2)</sup>	(1) Wells <sup>(1)</sup>	
<b>Palestinian Territory</b>	<b>175.63</b>	<b>49.46</b>	<b>5.39</b>	<b>2.90</b>	<b>117.88</b>	
<b>Remaining West Bank</b>	<b>85.53</b>	<b>44.86</b>	<b>5.39</b>	<b>2.90</b>	<b>32.38</b>	
Jenin	5.30	1.36	0.14	0.98	2.82	
Tubas	0.83	0.21	0.12	0.00	0.50	
Tulkarm	8.27	0.33	0.00	0.89	7.05	
Nablus	11.02	3.15	2.37	0.05	5.45	
Qalqiliya	6.31	0.47	0.00	0.95	4.89	
Salfit	2.00	1.88	0.12	0.00	0.00	
Ramallah & Al-Bireh	13.70	10.88	0.00	0.00	2.82	
Jericho & Al-Aghwar	4.52	1.85	2.64	0.03	0.00	
Jerusalem J <sub>2</sub>	8.05	7.46	0.00	0.00	0.59	J <sub>2</sub>
Bethlehem	8.66	7.10	0.00	0.00	1.56	
Hebron	16.87	10.17	0.00	0.00	6.70	
<b>Gaza Strip</b>	<b>90.10</b>	<b>4.60</b>	<b>0.00</b>	<b>0.00</b>	<b>85.50</b>	

(1) Represents water quantities pumped from wells with domestic permits. (1)

(2) Represents water quantities used for domestic use and pumped from agricultural wells with agricultural permits. (2)

(3) Includes water quantity discharged from springs and used to supply some localities through public networks. (3)

(4) Includes the pumped water from the wells which are located in the Palestinian Territory and controlled by Mekorot. (4)

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

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**Table 8: Quantity of Water Supply for Domestic Sector and Population and Daily Allocation per Capita in the Palestinian Territory by Governorate, 2007**

Governorate	( / / ) Daily allocation per capita (liter/capita/day)	(2007/12/01) Population (01/12/2007)	( <sup>3</sup> ) Quantity of water supply for domestic sector (Milion m <sup>3</sup> )	
<b>Palestinian Territory<sup>(1)</sup></b>	<b>135.8</b>	<b>3,540,643</b>	<b>175.63</b>	<sup>(1)</sup>
<b>Remaining West Bank</b>	<b>110.2</b>	<b>2,124,104</b>	<b>85.53</b>	
Jenin	56.6	256,212	5.30	
Tubas	46.6	48,771	0.83	
Tulkarm	143.1	158,213	8.27	
Nablus	93.8	321,493	11.02	
Qalqiliya	189.7	91,046	6.31	
Salfit	92.1	59,464	2.00	
Ramallah & Al-Bireh	134.9	278,018	13.70	
Jericho & Al-Aghwar	296.6	41,724	4.52	
Jerusalem J <sub>2</sub>	296.6	141,518	8.05	J <sub>2</sub>
Bethlehem	134.3	176,515	8.66	
Hebron	83.8	551,130	16.87	
<b>Gaza Strip</b>	<b>174.1</b>	<b>1,416,539</b>	<b>90.10</b>	

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

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<sup>(1)</sup>

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;

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

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

Governorate <sup>(1)</sup>	Concentration (mg/Liter)				( / )	(1)
	Sulphate (SO <sub>4</sub> )	Nitrate (NO <sub>3</sub> )	Bicarbonate (HCO <sub>3</sub> )	Chlorine (Cl)		
<b>Remaining 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, 2007. Unpublished Data. Ramallah - Palestine.

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

Governorate <sup>(1)</sup>	Concentration (mg/Liter)				( / )	(1)
	Sulphate (SO <sub>4</sub> )	Nitrate (NO <sub>3</sub> )	Bicarbonate (HCO <sub>3</sub> )	Chlorine (Cl)		
<b>Remaining 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, 2007. Unpublished Data. Ramallah - Palestine.

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

Governorate <sup>(1)</sup>	Acidity (pH)	(°) Temperature (°C)	( / ) Electrical conductivity (s/cm)	(1)
<b>Remaining 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, 2007. Unpublished Data. Ramallah - Palestine.

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

Governorate <sup>(1)</sup>	Acidity (pH)	(°) Temperature (°C)	( / ) Electrical conductivity EC (s/cm)	(1)
<b>Remaining 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, 2007. Unpublished Data. Ramallah - Palestine.

.2007

**Table 13: Biological Properties of Water Wells and Springs Used for Domestic Purposes in the Remaining West Bank by Governorate, 2007**

Governorate	Springs			Wells			
	Number of samples polluted by Total Coliform Bacteria (T.C)	Number of samples polluted by Fecal Coliform Bacteria ( F.C )	(1) 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) Number of tested samples <sup>(1)</sup>	
<b>Remaining West Bank</b>	..	..	..	..	..	..	
Jenin	2	0	2	9	1	23	
Tubas	2	2	2	..	..	..	
Tulkarem	..	..	..	3	-	38	
Nablus	33	17	39	1	-	9	
Qalqiliya	..	..	..	6	1	20	
Salfit	2	1	3	..	..	..	
Ramallah & Al-Bireh	11	5	12	2	-	7	
Jericho & Al-Aghwar	8	4	8	1	-	2	
Jerusalem J <sub>2</sub>	3	3	3	..	..	..	J <sub>2</sub>
Bethlehem	..	..	..	-	-	5	
Hebron	..	..	..	1	-	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, 2007. Unpublished Data. Ramallah - Palestine.

.2007

2007

( )

:14

**Table 14: Price of Water Purchased From Israeli Water Company (Mekorot) in the Palestinian Territory by Region and Type of Use, 2007**

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

3 / :

Region	Type of Use		
	(1) Agricultural <sup>(1)</sup>	Domestic	
<b>Palestinian Territory</b>	<b>0.4</b>	<b>2.6</b>	
Remaining West Bank	0.4	2.4	
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>(1)</sup>

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

.2007

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2007

( ) :15

Table 15: Evaporation Quantity (mm) in the Palestinian Territory by Month and Station Location, 2007

Month	Station Location							
	Gaza	Hebron	Jericho	Ramallah	Nablus	Tulkarm	Meithaloun	Jenin
January	68	65	78	110	49	..	..	..
February	76	81	76	104	67	..	..	..
March	115	93	128	157	99	..	..	..
April	142	139	189	195	149	..	..	..
May	162	166	261	238	203	..	..	..
June	190	200	289	232	226	..	..	..
July	193	221	298	252	238	..	..	..
August	183	225	267	228	218	..	..	..
September	165	157	227	127	178	..	..	..
October	132	112	135	128	131	..	..	..
November	87	87	94	63	75	..	..	..
December	69	62	59	55	49	..	..	..
<b>Total</b>	<b>1,582</b>	<b>1,608</b>	<b>2,101</b>	<b>1,889</b>	<b>1,682</b>	..	..	..

Source: Palestinian Central Bureau of Statistics, 2008. Meteorological Conditions in the Palestinian Territory: Annual Report 2007. Ramallah - Palestine.

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2007

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:16

Table 16: Rainfall Quantity (mm) in the Palestinian Territory by Month and Station Location, 2007

Month	Station Location							
	Gaza	Hebron	Jericho	Ramallah	Nablus	Tulkarm	Meithaloun	Jenin
January	159.5	153.1	23.5	81.2	105.6	102.0	102.0	30.1
February	98.8	109.0	22.5	130.4	174.9	162.0	142.4	53.3
March	69.7	103.2	26.4	146.1	116.6	74.3	88.7	51.9
April	0.5	9.4	8.2	5.0	8.2	3.7	18.1	4.0
May	0.8	5.8	0.0	16.2	4.9	8.5	0.0	0.0
June	0.0	0.0	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	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
October	1.0	0.0	0.2	1.0	0.1	0.5	0.0	0.0
November	43.1	23.4	19.9	106.5	85.3	148.3	66.7	70.5
December	31.7	43.9	14.5	57.5	78.4	82.0	78.5	22.7
<b>Total</b>	<b>405.1</b>	<b>447.8</b>	<b>115.2</b>	<b>543.9</b>	<b>574.0</b>	<b>581.9</b>	<b>496.4</b>	<b>232.5</b>

Source: Palestinian Central Bureau of Statistics, 2008. Meteorological Conditions in the Palestinian Territory: Annual Report 2007. Ramallah – Palestine.

.2008

.2007

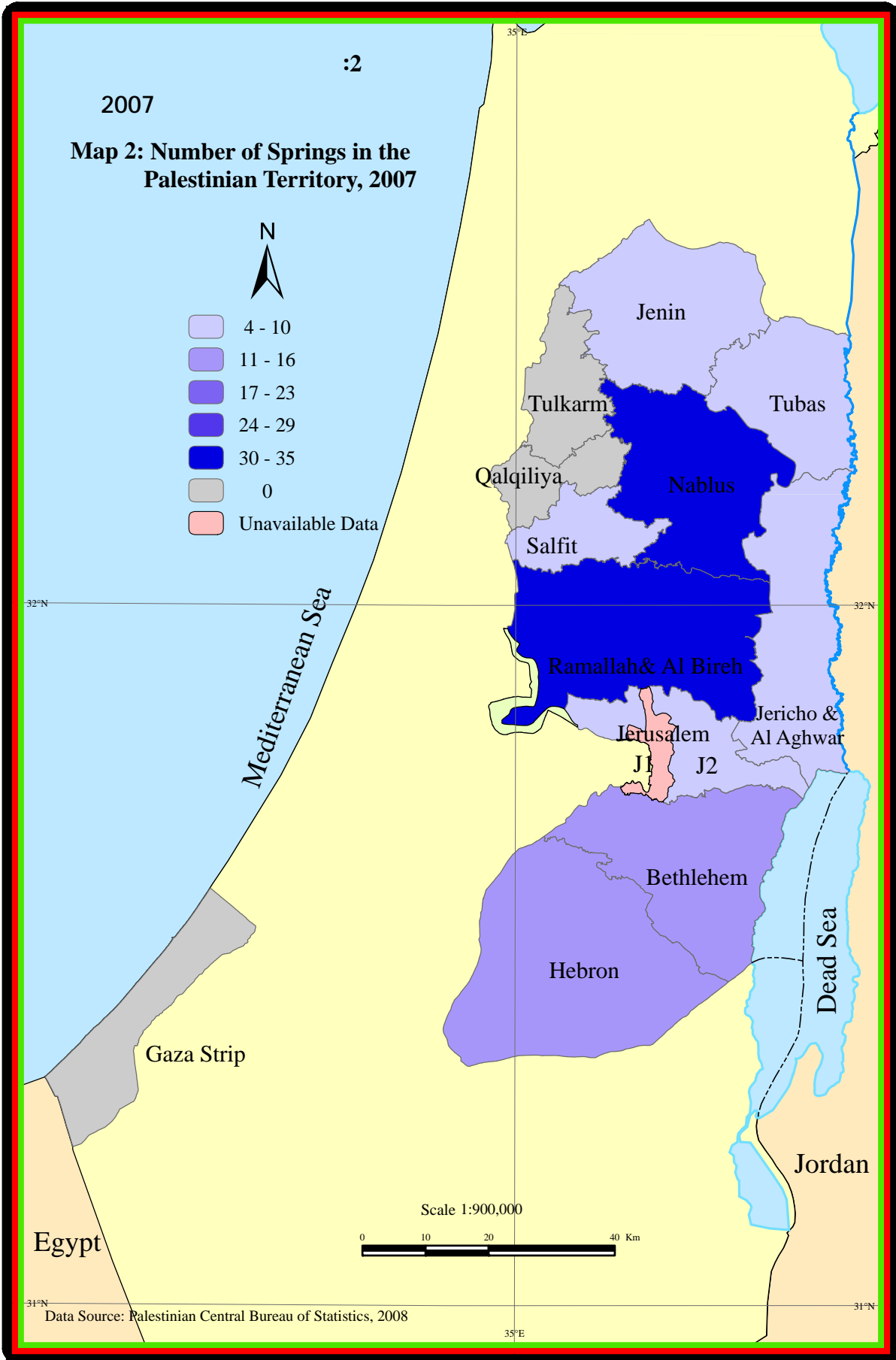
## **Maps**













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Palestinian Central Bureau of Statistics**

**Water Statistics in the Palestinian Territory  
Annual Report, 2007**

**August, 2008**

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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-planner and decision-makers in water, environment and natural resources sector.

Water is considered as one of the most important and sensitive issues in the Middle East, where increasing water deficiency and deterioration of the available water are imminent. A major issue is that water resources are very limited and do not meet the existing population albeit generations to come.

This is a more obvious and acute problem in the Palestinian Territory, which suffers from water deficiency, and has no control on the limited resources as Palestinians are deprived from legal water rights. Therefore the importance of providing accurate statistical data about this subject become a necessity.

This report forms one of a series to be published by the Palestinian Central Bureau of Statistics (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 resources indicators including quantities of consumed and purchased water, spring discharge, and other indicators.

PCBS hopes that the main findings of this report will contribute to improve water status and to provide reliable and useful statistics for Palestinian planners and decision makers.

**August, 2008**

**Luay Shabanah, Ph.D.  
President**



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## 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 2007 was 335.4 million m<sup>3</sup>, compared to 319.1 million m<sup>3</sup> in 2006 and 315.2 million m<sup>3</sup> in 2005 and 295.8 million m<sup>3</sup> in 2004.

Wells are considered the most important source, 241.2 million m<sup>3</sup> of water were pumped from water wells and that represents 71.9% of water resources. The quantity of water purchased from the Israeli Water Company (Mekorot) totaled 49.4 million m<sup>3</sup> and represented 14.7% of water resources, finally springs represent the third most important source with an annual discharge of 44.8 million m<sup>3</sup> representing 13.4% of water resources in the Palestinian Territory.

In the Remaining West Bank 306 wells pumped 68.7 million m<sup>3</sup> of water. Distributed by type of use, results were 38.1 million m<sup>3</sup> for domestic use, and 30.6 million m<sup>3</sup> for agricultural use.

Data shows that the maximum average annual discharges of springs for the years (2005 – 2007) was 53.6 million m<sup>3</sup> in 2005, while the minimum average annual discharges of springs was 44.8 million m<sup>3</sup> in 2007. The average of annual discharges was 51.7 million m<sup>3</sup> in 2006.

Data shows that the quantity of water purchased from Israeli Water Company (Mekorot) was 42.2 million m<sup>3</sup> in 2005 and increasing over the next two years 2006 and 2007 to 43.9 and 49.4 million m<sup>3</sup> respectively.

Data shows that the quantity of water supplied for domestic use in the Palestinian Territory was 175.6 million m<sup>3</sup> in 2007, of which 85.5 million m<sup>3</sup> was in the Remaining West Bank and 90.1 million m<sup>3</sup> in Gaza Strip. In 2006 it decreased to 160.2 million m<sup>3</sup>, of which 79.4 million m<sup>3</sup> was in the Remaining West Bank and 80.8 million m<sup>3</sup> was in Gaza Strip.

The data of 2007 indicates that February has the highest rainfall quantity, while the quantity of rainfall decreased until May. As in the summer months, the summer of 2007 had no rainfall. The quantities of rainfall ranges between 581.9 mm in Tulkarm Station and 115.2 mm in Jericho Station.



## Chapter One

### **Introduction**

#### **1.1 Introduction**

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

Therefore the Palestinian Central Bureau of Statistics (PCBS) worked on providing statistical data about water sector in the Palestinian Territory, especially regarding available and allocated quantities in order to be a base for future analytical studies concerning the 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 cover 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 of collecting and tabulated. 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).

#### **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 rate of evaporation is defined as the size of liquid water that is evaporated from a unit area per unit time. It is expressed as the depth of water in (mm) that would be potentially lost during the time period (24-hour) from the total area.

#### **Jerusalem (J1)**

Includes that part of Jerusalem, which was annexed forcefully by Israel following its occupation of the West Bank in 1967.



**Jerusalem (J2)**

Includes Jerusalem governorate except that part of Jerusalem which was forcefully Annexed by Israel following its occupation of the West Bank in 1967.

**Remaining West Bank**

Includes the West Bank except that part of Jerusalem which was forcefully Annexed by Israel following its occupation of the West Bank in 1967.

**Symbols in the Tables:**

(-) Nil

(0) Less than half of the unit

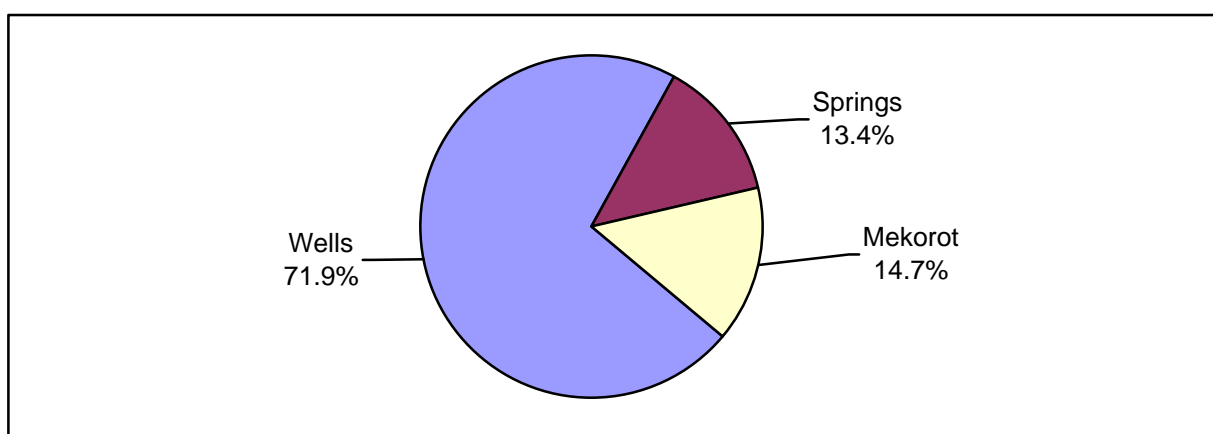
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## Main Findings

### 3.1 Water Resources

Water resources in the Palestinian Territory are restricted mainly to ground water that extracted from wells and springs and water purchased from the Israeli Water Company (Mekorot), the total water quantity obtained from these two sources in 2007 was 335.4 million m<sup>3</sup>. Wells are considered the most important source, 241.2 million m<sup>3</sup> of water were pumped from water wells and that represents 71.9% of water resources. The quantity of water purchased from the Israeli Water Company (Mekorot) totaled 49.4 million m<sup>3</sup> and represented 14.7% of water resources, finally springs represent the third most important source with an annual discharge of 44.8 million m<sup>3</sup> representing 13.4% of water resources in the Palestinian Territory.

**Figure 1: Percentage Distribution of Water Resources in the Palestinian Territory, 2007**

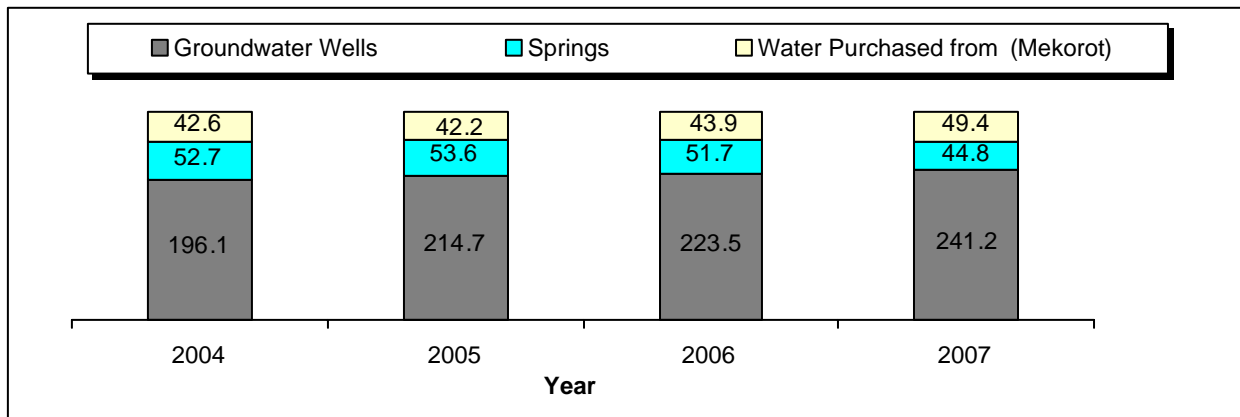


The Remaining West Bank depends on springs water for domestic and agricultural uses. The production from wells in the Remaining West Bank totaled 68.7 million m<sup>3</sup> representing 43.4% of water resources in the Remaining West Bank. The discharge of water from springs was 44.8 million m<sup>3</sup> representing 28.3% of water resources in the Remaining West Bank, almost equal to the quantity of water purchased from Israeli Water Company (Mekorot) which reached 44.8 million m<sup>3</sup> representing 28.3% of water resources in the Remaining 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 172.5 million m<sup>3</sup> representing 97.4% of water resources in Gaza Strip. The quantity of water purchased from Israeli Water Company (Mekorot) was approximately 4.6 million m<sup>3</sup> and contributed 2.6% of water resources in Gaza Strip.

#### Palestinian Water Wells

Data shows that the quantity of water pumped in the Palestinian Territory in 2007 reached 241.2 million m<sup>3</sup> for domestic and agricultural uses. In the Remaining West Bank 306 wells pumped 68.7 million m<sup>3</sup> of water. Distributed by type of use, results were 38.1 million m<sup>3</sup> for domestic use, and 30.6 million m<sup>3</sup> for agricultural use. The quantity of water pumped in 2006 was 223.5 million m<sup>3</sup> for all uses.

**Figure 2: Annual Available Water Quantity (million m<sup>3</sup>) in the Palestinian Territory by Source, (2004 – 2007)**



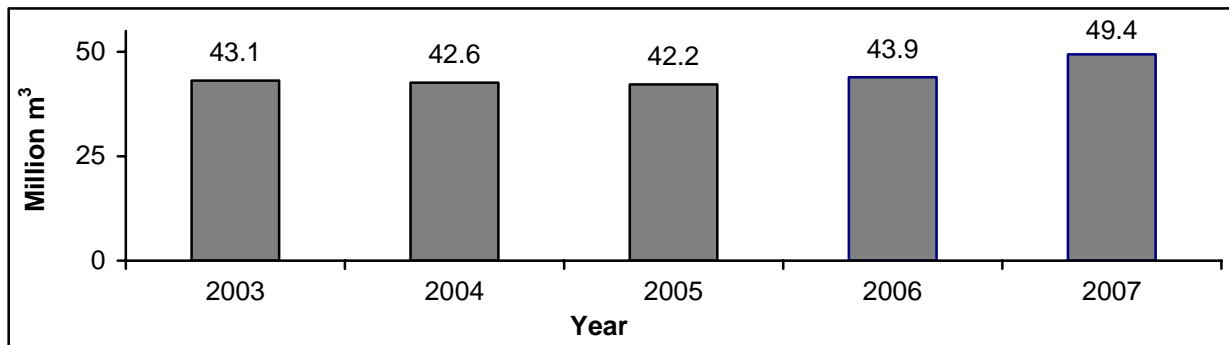
### Springs

Data shows that the maximum average annual discharges of springs for the years (2005 – 2007) was 53.6 million m<sup>3</sup> in 2005, while the minimum average annual discharges of springs was 44.8 million m<sup>3</sup> in 2007. The average of annual discharges was 51.7 million m<sup>3</sup> in 2006.

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

Data shows that the quantity of water purchased from Israeli Water Company (Mekorot) was 42.2 million m<sup>3</sup> in 2005 and increasing over the next two years 2006 and 2007 to 43.9 and 49.4 million m<sup>3</sup> respectively.

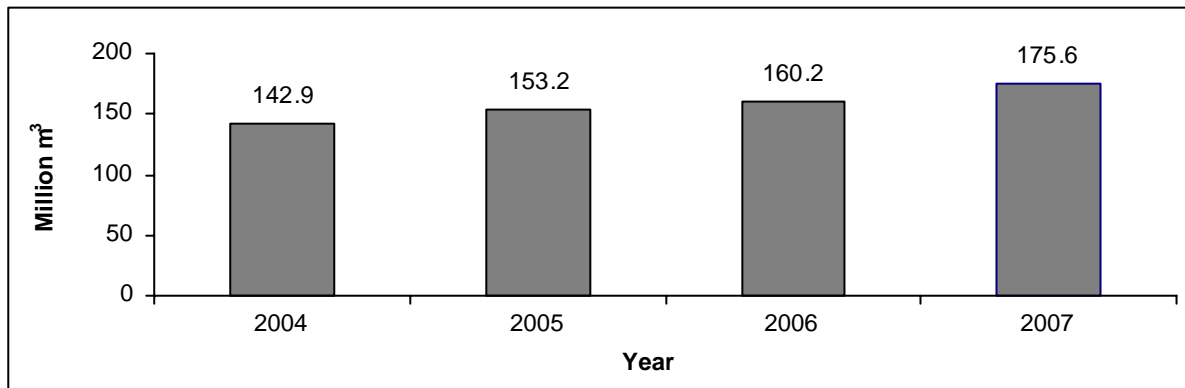
**Figure 3: Quantities of Water Purchased from Israeli Water Company (Mekorot) in the Palestinian Territory for Domestic Use, (2003– 2007)**



### 3.2 Water Supply for Domestic Use

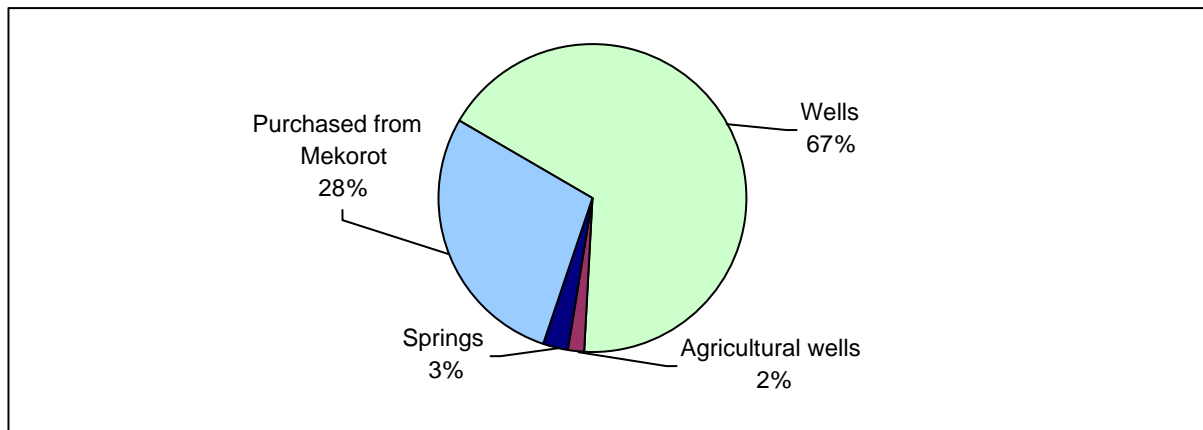
Data shows that the quantity of water supplied for domestic use in the Palestinian Territory was 175.6 million m<sup>3</sup> in 2007, of which 85.5 million m<sup>3</sup> was in the Remaining West Bank and 90.1 million m<sup>3</sup> in Gaza Strip. In 2006 it decreased to 160.2 million m<sup>3</sup>, of which 79.4 million m<sup>3</sup> was in the Remaining West Bank and 80.8 million m<sup>3</sup> was in Gaza Strip. The amount was 153.2 million m<sup>3</sup> in 2005, of which 75.0 million m<sup>3</sup> was in the Remaining West Bank and 78.2 million m<sup>3</sup> was in Gaza Strip.

**Figure 4: Annual Quantity of Water Supply for Domestic Sector in the Palestinian Territory, (2004 – 2007)**



The sources of supplied water for domestic use in the Palestinian Territory varied during the year 2007, from dependence on water pumped from domestic and agricultural water wells for domestic use of 120.8 million m<sup>3</sup>, to water purchased from the Israeli Water Company (Mekorot) of 49.5 million m<sup>3</sup>, and finally to springs discharge of 5.4 million m<sup>3</sup>.

**Figure 5: Percentage Distribution of Annual Quantity of Water Supply for Domestic Sector in the Palestinian Territory by Source, 2007**



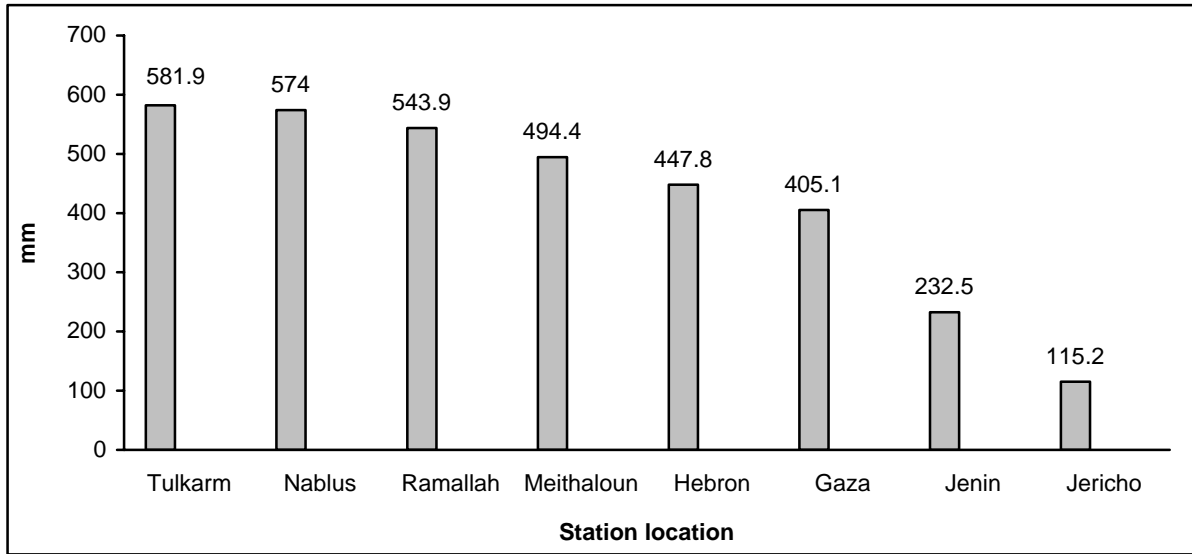
### 3.3 Water Price

Data shows in 2007 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 Remaining West Bank only.

### 3.4 Rainfall

The data of 2007 indicates that February has the highest rainfall quantity, while the quantity of rainfall decreased until May. As in the summer months, the summer of 2007 had no rainfall. The quantities of rainfall ranges between 581.9 mm in Tulkarm Station and 115.2 mm in Jericho Station.

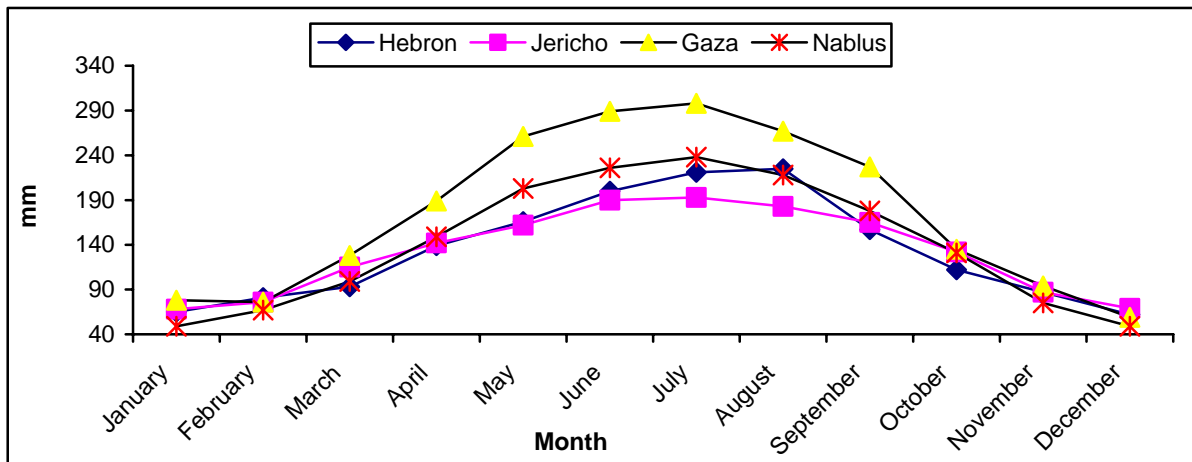
**Figure 6: Annual Quantity of Rainfall in the Palestinian Territory by Station Location, 2007**



### 3.5 Evaporation

The main findings indicate that for 2007 the quantity of evaporation was between 1,582 mm in Gaza Station and 2,101 mm in Jericho Station.

**Figure 7: Quantity of Evaporation in the Palestinian Territory by Month for Some Stations, 2007**



## 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, 2007**

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.



## 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. 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:

- Some data do not cover all areas, as they are not available.
- The unavailability of recent data for some indicators, therefore the most recent data was included according to the importance of the indicator.
- The unavailability of the time series for most of the 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.





## References

1. Palestinian Water Authority, 2006. Water Database. Ramallah – Palestine.
2. Palestinian Water Authority, 2007. Unpublished Data. Ramallah - Palestine.
3. Palestinian Central Bureau of Statistics, 2008. Meteorological Conditions in the Palestinian Territory: Annual Report 2007. Ramallah - Palestine.
4. 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.