

Investigating of Water Practices and Savings in Istanbul by Means of GIS

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Introduction

- Accessible water reserve of 1%
 - 97% - brackish water
 - 70% of the remaining 2,5% - ice
 - 30% of the remaining 2,5% - moisture & under soil water
- Global warming
- Over population
- Importance of defining & improving conscious

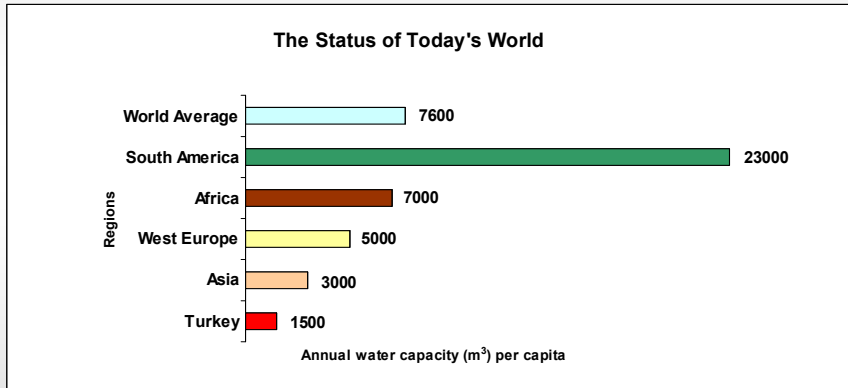


Introduction

- Geographic Information System (GIS)
 - Selection of districts
 - Application of surveys
 - Evaluation of surveys
 - Analysis & Visualization



General Status of Water



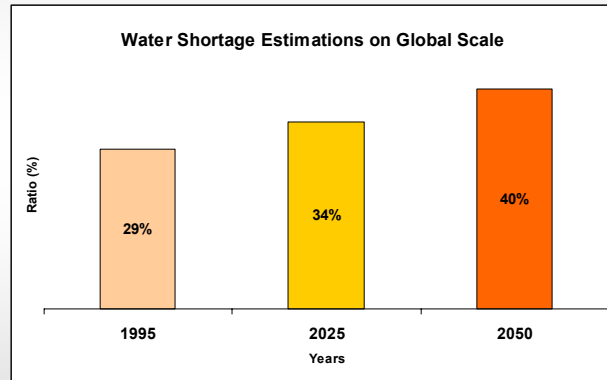
General Status of Water



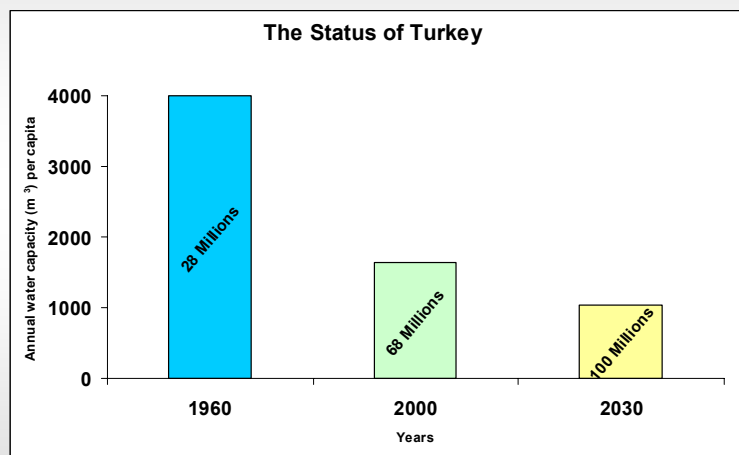
WATER SOURCE (m³/person/year)	STATUS
500 – 1000	Water Shortage
1000 – 1700	Water Stress
> 1700	Enough Water



General Status of Water



General Status of Water

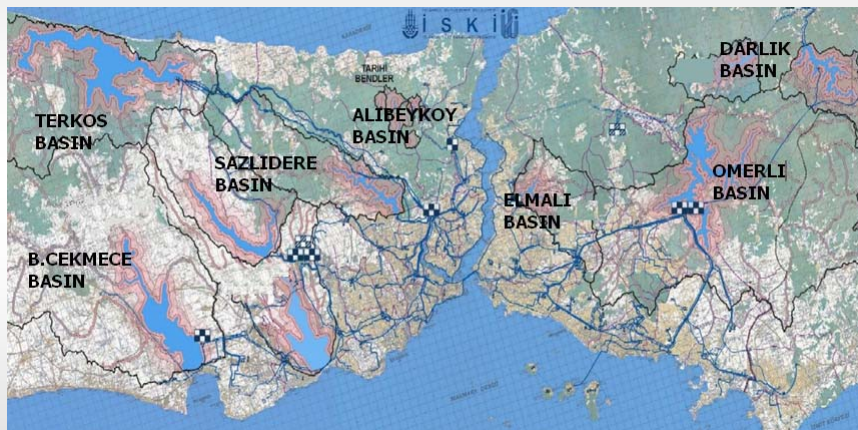


General Status of Water

- ISKI (Water and Sewerage Administration of Istanbul)
- The Strategic Plan of ISKI
 - Simultaneous Pollution Monitoring System
 - Protecting & Controlling the Drinking Water Basins Regulation



General Status of Water

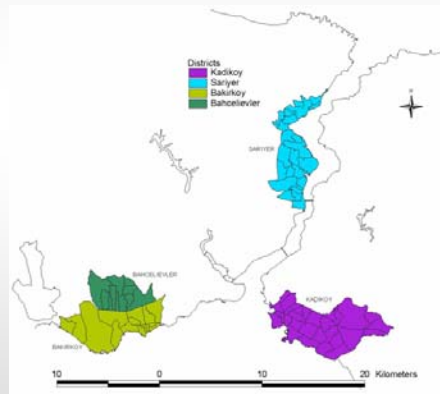


Water basins in Istanbul



Data and Methodology Used

- 4 Districts on different locations



Data and Methodology Used

- Survey consisting of 20 questions

6. Do you let the water run while brushing your teeth?

- a) Yes
- b) No
- c) Sometimes
- d) Don't recognize

7. What do you think is the average amount of water you waste when you let the water run while brushing your teeth?

- a) 3 L
- b) 5 - 7 L
- c) 8 - 10 L
- d) 14 - 16 L

18. In which parish do you live?

.....

19. Gender :MF

20. Education status and Age:.....



Data and Methodology Used

- Evaluation
 - Grading related to evaluation chart
 - Forming conscious level intervals
 - Classification of results
 - Matching data with parishes on GIS



Data and Methodology Used

District	Educational Level					Gender		Survey Number	Consciousness Level
	Parish	University	High School	Elementary School	Primary School	Male	Female		
BAKIRKÖY	Atakoy 1.	7	1	4	1	5	8	13	43
	Atakoy 2-5-6.	4	4	1	0	7	3	10	49
	Atakoy 3-4-11.	5	2	2	0	2	7	9	47
	Atakoy 7-8-9-10.	8	2	4	1	4	12	16	45
	Cevizlik	0	2	7	1	5	5	10	43
	Kartaltepe	20	21	8	1	24	33	57	42
	Osmaniye	6	2	5	0	3	13	16	43
	Sakızgacı	5	3	5	2	10	7	17	44
	Yemimahalle	8	10	18	9	20	28	48	42
	Yesilköy	7	17	8	0	13	19	32	43
	Yesilyurt	1	0	0	0	1	0	1	45
	Zeytinlik	4	8	1	1	5	9	14	45
	Zuhuratbaba	3	2	0	0	2	3	5	40
	SUM	78	74	63	16	101	147	248	43.92
BAHÇELİEVLER	Bahçelievler	12	5	1	1	8	14	22	46
	Cobanceme	3	0	1	2	2	4	6	48
	Fevzicakmak	2	4	0	0	3	3	6	43
	Kocasinan	4	1	0	0	3	2	5	42
	Siyavuspaşa	3	3	0	0	2	4	6	42
	Söğüt	0	0	1	0	1	0	1	41
	Sirinevler	4	5	3	2	7	7	14	42
	Yenibosna	3	11	2	2	9	9	18	45
	SUM	31	29	8	7	35	43	78	43.63



Data and Methodology Used

District	Educational Level				Gender		Survey Number	Consciousness Level	
	Parish	University	High School	Elementary School	Primary School	Male			Female
KADIKÖY	Acibadem	3	4	3	1	10	1	11	44
	Alaturk	4	0	2	0	5	1	6	46
	Barbaros	0	0	2	0	0	3	3	40
	Bostanci	10	0	0	2	8	4	12	48
	Caferaga	13	0	1	0	3	11	14	47
	Fenerbahce	1	0	1	1	2	1	3	46
	Goztepe	1	0	0	1	0	2	2	43
	Icerenkoy	3	0	0	7	0	10	10	40
	Inonu	2	4	5	3	4	11	15	43
	Kaysisdagi	0	5	0	3	2	6	8	38
	Kucukbakkalkoy	0	0	0	5	0	9	9	37
	Osmanaga	1	0	0	0	0	1	0	46
	Sahrayicedit	1	0	0	0	0	1	1	44
	Yenisahra	0	0	1	2	0	3	3	44
	SUM	39	16	17	25	34	63	97	43,29
	SARIYER	Buyukdere	2	6	1	1	5	5	10
Cumhuriyet		1	0	0	0	0	1	1	43
Istinye		2	2	0	3	5	2	7	41
Kirecoburnu		0	11	6	10	7	20	27	40
Kocadas		10	0	0	0	6	4	10	45
Madan		1	1	2	0	4	0	4	45
Resitpasa		8	0	0	0	2	6	8	38
Rumelikavagi		0	1	0	0	0	1	1	35
Sariyer Merkez		9	3	4	4	10	10	20	43
Tarabya		2	1	0	0	1	2	3	46
Yenikoy		2	0	0	0	1	1	2	40
SUM		37	25	13	18	41	52	93	41,73



Data and Methodology Used

District	Conscious Levels depending on Gender		Conscious Levels depending on Education				Weighted Average
	Male	Female	Primary	Elementary	High School	University	
Bakirkoy	44,87	43,26	39,72	43,04	44,79	44,42	43,92
Bahcelievler	43,11	44,06	41,13	42,17	43,00	46,29	43,63
Kadikoy	44,53	42,63	40,67	41,12	42,48	46,20	43,29
Sariyer	41,88	41,57	40,71	39,78	42,41	42,29	41,73
Weighted Avg.	43,84	42,96	40,50	42,25	43,79	44,56	43,33

General evaluation of the surveys

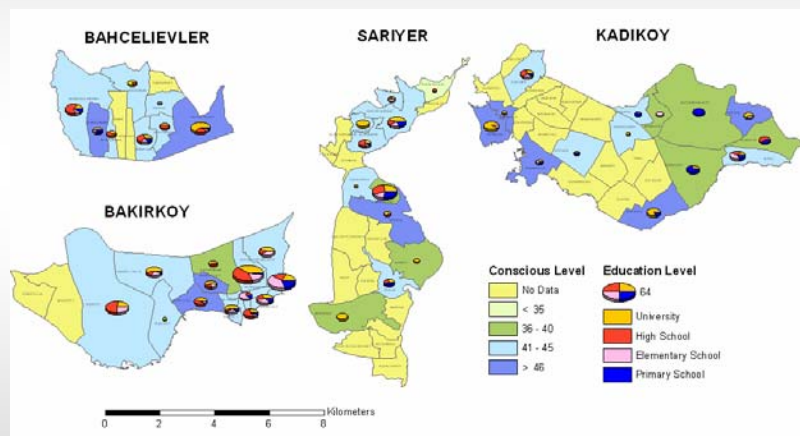


Data and Methodology Used

- Analysis & visualization
 - Conscious level – education level
 - Conscious level – gender



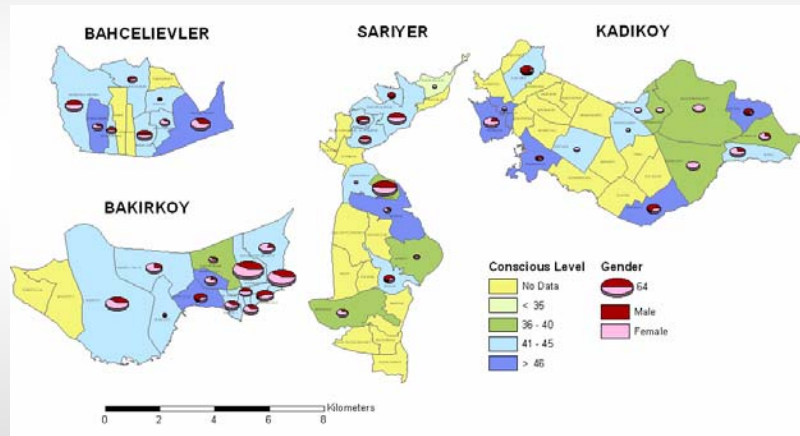
Data and Methodology Used



Presentation of conscious level – education level in the selected districts



Data and Methodology Used



FIG

Presentation of conscious level – gender in the selected districts



Results & Recommendations

- Importance of education on water usage conscious ([General Evaluation Table](#))
- Inefficiency of data acquisition
 - Time and personnel limitation
 - Incomplete surveys ([Evaluation Table](#))
- Efficiency of GIS

FIG



Results & Recommendations

- More comprehensive data acquisition
 - Professional surveys by professionals
- Cooperation of the local authorities, municipalities, universities and NGOs



Thank you for your attention...

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