

## Water Governance Benchmarking Criteria

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Numbers found next to an article or item title correspond to the entire article or item.  
Numbers found next to document title correspond to the entire document.

### **A. GOVERNANCE FUNCTIONS**

#### **1. Organizing and building capacity in the water sector**

- 1.1 Creating and modifying an organizational structure [1, 2, 3, 4, 5](#)
- 1.2 Assigning roles and responsibilities [6](#)
- 1.3 Setting national water policy [7, 8](#)
- 1.4 Establishing linkages among sub-sectors, levels, and national sub-regions [9, 10](#)
- 1.5 Establishing linkages with neighboring riparian countries
- 1.6 Building public and political awareness of water sector issues [11, 12, 13, 14, 15, 16](#)
- 1.7 Securing and allocating funding for the sector [17, 18, 19, 20, 21, 22](#)
- 1.8 Developing and utilizing well-trained water sector professionals [23, 24, 25, 26, 27, 28, 29, 30, 31](#)

#### **2. Planning strategically**

- 2.1 Collecting, managing, storing and utilizing water-relevant data [32, 33, 34, 35](#)
- 2.2 Projecting future supply and demand for water [36, 37, 38](#)
- 2.3 Designing strategies for matching expected long-term water supply an [39, 40, 41, 42, 43](#) demand and dealing with shortfalls (including drought mitigation strategies)
- 2.4 Developing planning and management tools to support decision making

#### **3. Allocating water**

- 3.1 Awarding and recording water rights and corollary responsibilities
- 3.2 Establishing water and water rights transfer mechanisms
- 3.3 Adjudicating disputes
- 3.4 Assessing and managing third party impacts of water and water rights transactions

#### **4. Developing and managing water resources**

- 4.1 Constructing public infrastructure and authorizing private infrastructure development
- 4.2 Forecasting seasonal supply and demand and matching the two
- 4.3 Operating and maintaining public infrastructure according to established plans and strategic priorities [44, 45, 46, 47, 48](#)
- 4.4 Applying incentives and sanctions to achieve long and short term supply/demand matching (including water pricing) [49](#)
- 4.5 Forecasting and managing floods and flood impacts

#### **5. Regulating water resources and services**

- 5.1 Issuing and monitoring operating concessions to water service providers
- 5.2 Enforcing withdrawal limits associated with water rights
- 5.3 Regulating water quality in waterways, water bodies, and aquifers (including enforcement) [50](#)
- 5.4 Protecting aquatic ecosystems
- 5.5 Monitoring and enforcing water service standards

## **B. GOVERNANCE PROCESS CHARACTERISTICS**

- 1. Transparency.**
- 2. Participation.** 51, 52, 53, 54
- 3. Accountability and Integrity.** 55, 56
- 4. Rule of law.** 57
- 5. Coherency and Integration.** 58, 59, 60
- 6. Responsiveness.** 61, 62, 63, 64, 65, 66, 67, 68, 69

## **C. CROSS CUTTING CATEGORIES**

- 1. Water Sources**
  - 1.1 Surface water 70
  - 1.2 Groundwater 71
  - 1.3 Derivative water (reclaimed, reused, desalinated) 72, 73, 74, 75, 76
- 2. Water Uses**
  - 2.1 Irrigation 77
  - 2.2 Municipal
  - 2.3 Industrial
  - 2.4 Environmental
  - 2.5 Hydropower
  - 2.6 Fisheries, navigation, recreation
  - 2.7 Other uses (including social, esthetic, and religious uses)

# Water Authority Strategic Plan 2008 - 2011

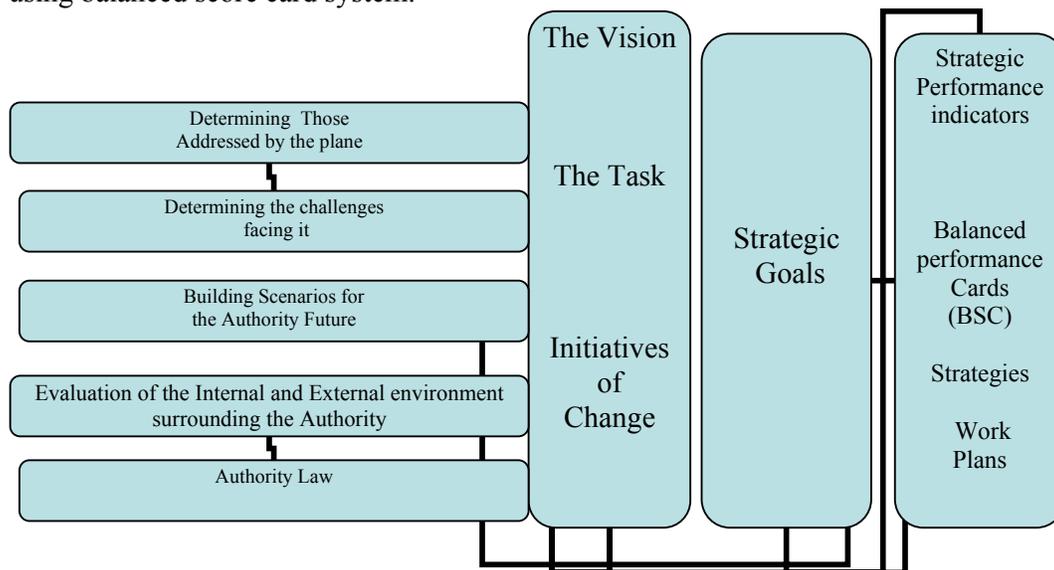
## Chapter 1. Strategic Plane Outline

### Goals Sought Through the Strategic Plane

This document includes the strategic plane for the Water Authority for the years 2007 – 2012 with the ultimate goal of achieving communication between the Authority and concerned parties in assessing its success, these parties include employees, citizens, government, media, parliament, civil institutions, and donors, investors, or sponsors from the private sector. Also this plane stands briefly on the present state of the authority and outlines the future pursued by the Authority and its employees in co-operation with all concerned. 51

### Methodology of Preparing the Strategic Plane 52

The Strategic plane was prepared by the participation of the Authority employees and concerned parties in the water sector. Meetings were held with the employees and concerned parties for brain storming and workshops were held to discuss the present state, future and challenges facing the Water Authority the following diagram outlines the technical methodology in building the plane and out sourcing the strategic goals using balanced score card system.



### Analysis of Authority Environment

This section draws attention to the facts and statistics pertaining to internal and external environment in the Authority. The internal environment includes the laws governing the Authority's work and responsibilities. In addition, it covers the Authority's organizational body, human and financial resources, present financial status, assets, services provided to citizens, and current and future projects.

The external environment includes legal and legislative environment, government directions, economic status, citizen reaction to the Authority and services provided. Media and private institutions like parliament, donor and sponsors or private organizations.

It is essential to analyze the environment affecting the present and the future of the Authority and the challenges facing it and consequently defining better futuristic horizons and determining the approaches to face the challenges and use the available opportunities.

	<b>Opportunities</b>	<b>Threats</b>
<b>Points of Strength</b>  23    17	<ul style="list-style-type: none"> <li>• The existence of training managers who are trained on strategic thinking and planning (Strength) and the existence of an environment suitable and lingering to change (National Agenda, King Abd-ulla Award for Distinguished Performance, Governmental Planning), also there is an institutional culture that accepts change(an opportunity).</li> <li>• The added experience in dealing with contracts of administration and private administration (Strength) and the Privates sector hope to participate in the management and investment of the water sector.(opportunity)</li> </ul>	<ul style="list-style-type: none"> <li>• Increment on the demand on water (Threat),and the existence of modernizing planes and exploitation of new water resources. (Strength)</li> <li>• Change in the priority of financial support from the water sector to sectors like education and health (Threat) and the ability of the water sector to attract investments from the Private sector (Strength).</li> <li>• The monitory authority of the parliament and media to the Authority performance butting focus on mistakes (Threat) and the existence of monitory parties from within the Authority to tackle problems in water and service quality. (Strength)</li> </ul>
<b>Points of Weakness</b>  18   11	<ul style="list-style-type: none"> <li>• The availability of budgets for vital projects (opportunity) and the need for managerial skills and consumption of budget resources in the right time (Weakness).</li> <li>• The possibility of gathering support for water issues in and attracting the attention of donating parties and the Government to endorse the sector (Opportunity) with the multiplicities of parties concerned to put forward unequivocal data and information (Weakness).</li> </ul>	<ul style="list-style-type: none"> <li>• The limited skills and technical know how of the human resources (Weakness) and the change in the priorities of water sector by the donor parties (Threat).</li> <li>• The limited financial resources (Weakness) and pressure to reduce the Authority budgets (Threat).</li> <li>• The financial and managerial systems are not mature enough</li> </ul>

		(Weakness) and there is a need for improvement in the sectors pointed by the National Agenda (Threat).
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### Strategic Challenges

The Water Authority faces a group of challenges in the span from 2007 -2012 that should be dealt with to avoid the adverse effects that evolve from them and benefit from the positive results from over coming these challenges.

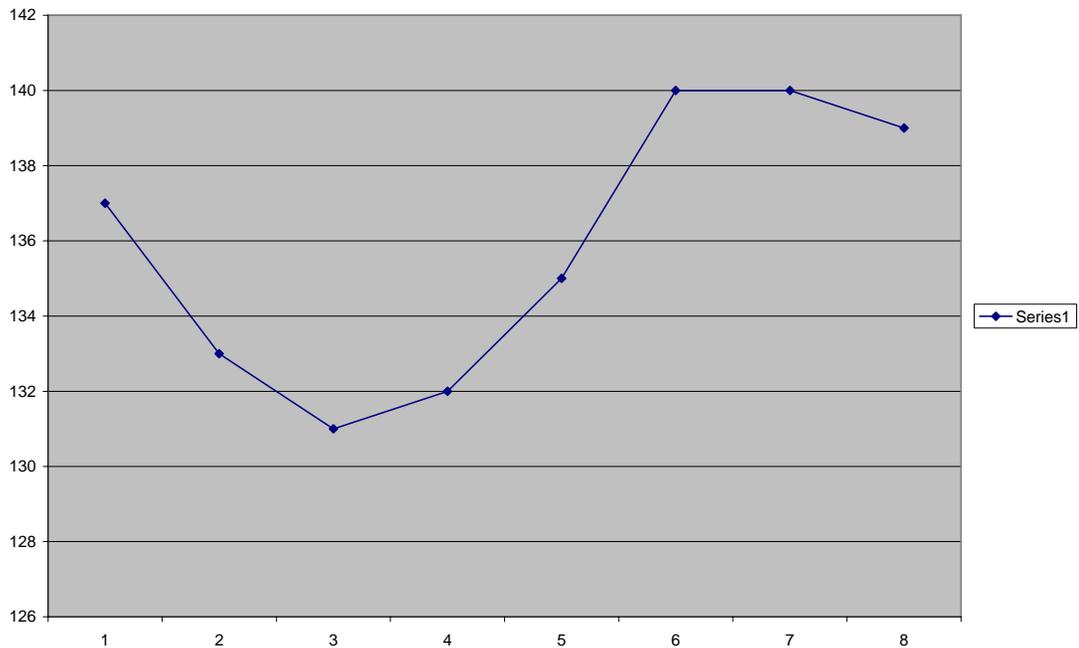
These strategic challenges obscure the Authority roles and its ability to deliver its services to the community. These challenges are:

(1) The Gap between demand and available supply of water

Jordan water sector suffers from the limited available water resources, those that are reusable and not reusable ones that will reach in the year 2010 what amounts to 1,150 million square meters for all uses, 505 million square meters is surface water and 275 million square meters is reusable under ground water. **36**

Water demand will reach in the same year 1,564 million square meters that gives a water deficit 414 million square meters in the case that these amounts stay as they are. The per capita share for all purposes could decline from 139 square meters in the year 2006 to less than 20 square meters in the year 2012. **37**

Per capita share of supplied water(including lost water) (liter/day)



**Performance Indicator**

The increment per capita share of daily water consumption from 100 liter/day/person in 2006 to 120 liter/day/person in the year 2012.

The increase in the gap between available supply and demand is a challenge to the Authority's ability to supply water in sufficient quantities and quality in accordance with international criteria in a regional unstable environment and under pressure of rapid increment on demand because of population growth, rapid development and obligatory immigration from neighboring countries also the rapid initiation of economic projects needs excess water not forgetting the tendency of Jordanian families to use more water.

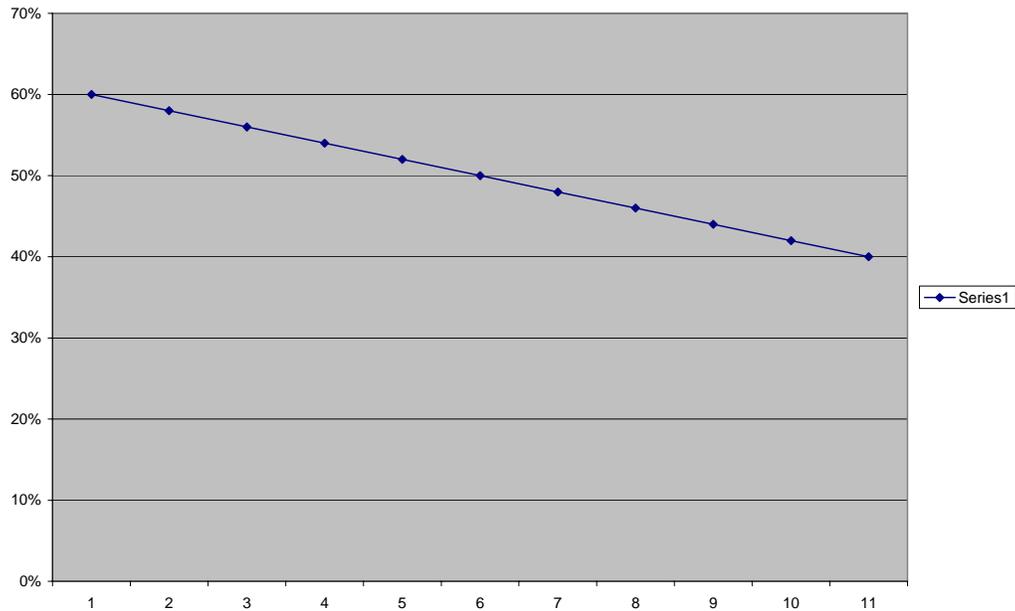
Providing health services and prosperity to citizens is from the directions of National Agenda this agenda that concludes a rapid increase in the per capita share of water as it reached in 100 liter/day/person after deduction of the water lost duo to technical reasons. **7**

**Demand, Supply and Water Deficit Expectations to the Year 2020 for All Purposes **38****

Year	2000	2005	2010	2015	2020
Item					
Demand/year	1297	1525	1564	1600	1615
Supply/year	817	1029	1150	1233	1296
Deficit/year	480	496	414	367	319

And what adds to the size of challenge is the increase in water lost duo to managerial and technical reasons despite the reduction brought about by the Authority actions total water lost percentage from 50% in previous years to 44.59% in the year 2006 which is still considered higher than the sought for percentage specified by the National Agenda to be 30% by the end of the year 2012. **44**

Water Loss Percentages 1999-2006



Performance Indicator :  
Lowering of lost water percentages (Duo to managerial and Technical reasons) from 44,59% in the year 2006 to 32% in the year 2012.

## (2) Change of Authority Responsibilities in Accordance to Law 1

The permanent Water Authority law no. (18) for the year 1988 replaced the temporary Water Authority law no. (34) for the year 1983. And according to article (3) in the permanent law states that the Water Authority is established to be an independent corporate body with independent fiscal and managerial entity under the supervision of the Water and Irrigation Ministry.

The Authority is responsible fully to supply water to citizens in addition to waste water management and pertaining projects, In addition to planning, managing, supervising, establishing, operating and maintaining water resources. And upon initiation of the Ministry of Water and Irrigation in accordance with protocol (54) for the year 1992 and what followed that by transferring certain responsibilities to the Ministry such as planning, researching, water resource applications, and implementing measures to prevent water pollution and other responsibilities which cause conflict and ambiguity between responsibilities and tasks performed in accordance to laws and common understanding of regulations in the water sector, which causes duality in work and tangling of responsibility, authorization, and function. 6

Despite of that Water Authority has its own independent corporate body financially and independent management. In accordance with law article (32), but the implementation of the law was rendered inactive duo to lack of special systems that

control the individuality of the Authority which left under the mercy of managerial and fiscal inadaptable legislation that obscure work, and does not allow for an attractive work environment to lure qualifications and attract expertise nor does it allow for financial resources to achieve goals in accordance with plans and required time tables.

On the other hand several changes have emerged in the external environment which include organizations and institutions that work tasks tangle the Authority mandate and many laws and regulations have emerged to control the occurrence of similar work frames from different angles which must be addressed by redefining the current laws and regulations to address these occurrences and re regulates the authority relationship with its internal and external environment.

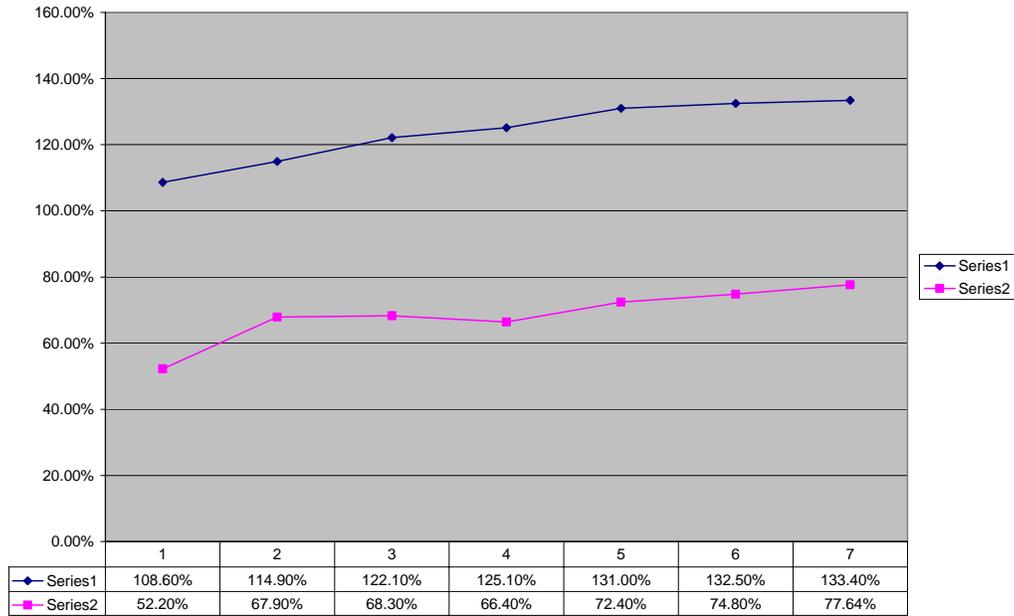
### (3) Retrieval of Total Cost Deficit and Weakness of Self Financing 19

The Authority's ability to maintain things running depends on its own fiscal ability and importing external sponsoring represented by contributions from the government, donors and local or foreign loans. The Authority's ability to regain the cost of running and maintaining their business is a limiting factor for its success and continuing to function. The Authority was able to regain 133% of its working cost in the year 2005 but the percentage regained from the total cost is a meager 77% only which causes deficit accumulation between income and expenditure and reduces the authority ability of capital venture (in to water projects ).

Providing water and waste water management service to the ever increasing citizen population entails high financial investments amounting to 200 – 250 million Jordanian dinars, especially in water networks and in water treatment plants which is a burden on the Authority to attract financing of these projects. And as a result the loan debt which was used to finance these projects reached 340 million dinars in the year 2006 although the Authority depended in the last few years on financing from its own resources and donations. 45, 72

The government intention to cut financial support to public institutions and among them the Water Authority throws its shadows on the citizens whom are enjoying the services of the Authority as it means taking more money from them to reduce the pressure on the government's budget and to reduce its deficit. This direction by the government is posing a threat to the Authority's management because it prevents it from venturing capitally in projects also it undermines its ability to carry out its mandate as government support declined to 70% between the years 2000 to 2005.

### Percentage Cost Recovered (1999 -2005)



### Percentage Cost Recovered

Year	1999	2000	2001	2002	2003	2004	2005
Run&mintain	108.6%	114.9%	122.1%	125.1%	131.0%	132.5%	133.4%
Total	52.2%	57.9%	68.3%	66.4%	72.4%	74.8%	77.64%

**Performance Indicator :**

1. Retrieval percentage of running and maintaining is 133% for the year 2005
2. Total retrieval percentage is 77% for the year 2005.

#### (4) Citizens Approval and Degree of Cooperation

Citizens opinion and their relationship with any public institution is one of the factors that determines the success of that institution to carry out its mandate, as the citizens welfare is at stake here so the important question to be asked by the Authority's management "Are the citizens appreciative of the Authority's role and its services?" In view of the limited available water resources and those available for exploitation the water Authority faces a great challenge to educate people and market its products and services to citizens through applying a series of actions that raise the value of these services qualitatively and quantitatively by totally reviewing the axis of operations linked to providing services to citizens. 12, 61

The increase in the cost of providing water to citizens is due to high cost of projects in the water sector, high energy cost and less government support for the Authority, which may lead the it to increase the value of the cubic meter of water to cover a part of the increase in cost, that might be faced by resistance to this approach and less citizens approval to the Authority and its services.

#### (5) Employees Satisfaction and Their performance State

Employees satisfaction and improving their skills and performance level is another challenge the Authority management must face in its pursuit to provide a working environment that helps employees to achieve the tasks at a high level of excellence and to motivate them toward with financial and implicit incentives. The building of a know how is always a challenge and to transfer the Authority to a fully functional know how corporate body is not easy but making use of expertise and applications of international companies in this sector is a must. 24

#### (6) Evaluation of the Authority operations

The low estimated value of Authority achieved projects is a challenge facing its ability to finish assignments effectively and efficiently, in spite current operations have been already determined and plans have been drawn to sixty of them but information about their cost, determination of time needed to finish them and total output is not fully determined which make them un efficient to pursue and make projects more challenging.

Studying operations in the Water Authority is needs more detailed investigation this factor is a major factor in the state of faced challenges, Pivotal information about the operations efficiency, time table, performance or quality of its output must be provided to analyze and measure its management efficiency effectively and perhaps redesigning to match other Authority projects. Major operations have been determined in order of impact on the service prescribed and degree of its contributions to the over all strategy and their financial effect.

## **Chapter 2. Strategic Horizons**

Depending on the external and internal environments analysis and the challenges that face the water sector, three scenarios have been drafted to what the Authority will evolve in to in the year 2012. The following scenario was adopted because it was ambitious and showed momentum to face the challenges and it was developed to carry out the Authority's futuristic vision specified the directions it may take through the years in which this strategic plane is implemented.

### Future of the Water Authority

"The Water Authority will cover the water deficit through a better management of the available water resources and exploiting new ones and implementing the planes that contribute in achieving water security for Jordan and its citizens. Thanks to using modern techniques in management and financial control the Authority will reduce the financial deficit in its budget through the years of implementing the plane. The customers vision of the Authority also has changed because the service has risen in way the Authority presents it and the Authority is keen in keeping this service unique to maintain the subscribers satisfaction and cooperation in implementing water management programs an added success to what has already been achieved on the scale of changing consumption behavior and the real partnership that the Authority built with it subscribers. All these changes have made the Authority an inspiration and a story of success in methodology of strategic change and has built a work environment that is suitable for employees that made it a mekkah for new graduates aspiring to build a long lasting career offering chances for them to develop their technical and managerial skills thanks to a successful human resources management and building an institutional culture that is supportive of the employee and his wishes. And the strategy of cooperation with private sector and investors is bailer of the Authority's success as it exploited the private sector capabilities to areas that are more efficient and valuable to the customers taking in consideration the investor's interest in mind". 9, 13, 25, 39

### Strategic Vision for the Water Authority

"The Water Authority aspires to be an inspiration and a success story in individualism performance and strategic change through raising the value of its operations and succeeding in contribution to achieve water security to citizens, raising their living standard, and gaining their approval making them partners in achieving the Authority's goals and ambitions to build a partnership with the private sector and investors in areas that are more rewarding and efficient, also pursuing to make the Authority an attractive place for employees and a mekkah for expertise".

### The Authority Mission

Ensuring drinkable water needs to the citizens in a quality and quantity assured by the Jordanian Criteria to be used in homes and industry taking into consideration economical, ecological, health and matters related to the management and conservation of these resources and protecting them from pollution, simultaneously maintaining the infra structure, systems and special facilities concerned with water

distribution equally and clearly by modern ways and means making sure that it safe and healthy when it reaches the consumers, Taking into consideration to regulate water uses preventing waste it and changing people water consumption behavior, In addition, carrying out research and special studies of water resources quality protection. The Authority waste water management, sewage treatment, and recycling it for suitable purposes, preserving the ecosystem and public health in accordance with accredited specifications. **8, 14, 32, 40, 73**

### Values and Principles **55**

The authority adopts the following crystal clear values and principles that will govern the Authority's execution to its mission and fulfilling its vision:

1. Equality and justice in dealing with employees.
2. Rewarding precision and distinguished performance.
3. Equality and justice in dealing with citizens and subscribers. **57**
4. The Authority is keen not to waste the time of citizens and finishing their paper work with precision and agility.
5. Taking pride in the role the Authority's plays as a provider of the material of life and the responsibility thrown on its shoulders to keep this water safe and healthy and life prospers.
6. The Authority is keen to protect the ecology and develop water resources to make them continuous and prevent their pollution or destruction.

### The Strategic Goals for the Water Authority 2007 - 2012

Angle	Strategic Goals
The Citizens (consumers) : Satisfaction and Co-operation	1. Increment of the level of service (water, sewage and managerial services) Over the yearly level by 5% until the year 2012.  2. Improving Citizens satisfaction on the approval scale from 57% to 80% by the year 2012.
Financial: Expenditure and return <b>20</b>	3. Increment of the financial ability of the Authority by 2% until the year 2012.
Operations : Value and output	4. Increasing the status of operations (speed of achievement, less expenditure and quality of performance) by 5% yearly until 2012.
Employees : Performance, advance and creativity <b>26</b>	5. Increasing satisfaction of employees on the scale of approval from 63% to 80% by the year 2012. 6. Performance of employees (knowledge and technical wise) has increased yearly by 9% until the year 2012.

In accordance with futuristic vision of the Authority and its mission, the following strategic goals were drawn to be carried out in the year 2007 through to the year 2012 and these goals were but in a frame work of a (balanced scorecard system) four angles were determined citizens, finance, operations and employees.

## Plane for Strategic Goals

The six Strategic goals her tied up with a cause effect relationship, achieving some depends on achieving others, for instance satisfied employees supportive of the Authority with a know how and exceptional unique expertise for improving operations performance to achieve aims in a fast, precise and cost efficient fashion to reduce the Authority's budget deficit goes hand in hand with employees ability in providing finances needed for capital ventures to raise the level of service and achieve subscribers and citizens satisfaction. The following diagram clarifies the cause effect relationship that embodies the dependence of goals in the upper angle on goals on the lower angle. 27, 58

### Chapter 3. Balanced Scorecard System for Strategic Goals

A balanced scorecard was prepared that lists peripheral performance indicators that measure the level of achievement tied up with every strategic goal, each of these indicators will be measured once a year by concerned party to judge strategic goals, as every indicator will have a coefficient calculated to indicate level of target achievement, after the determination of yearly targeted values they will be plotted on graph to determine their relationship with each other and reference values. Weights for every indicator are given according to importance, and these balanced scorecards specify the party responsible of implementing required programs required to improve that indicator and the party responsible for its measurement. 62

Target Number One: Elevation of Authority Services (Water Supply & Waste Water Management) on the Services Scale by 5% Yearly until the Year 2012

Performance Indicator	Unit of Measurement	Method of Measurement	Reference Value 2005	Value Pursued 2012	Frequency of measurement per / year	Measurement responsibility	Responsibility of the value measured
Percentage of protected water resources (Qualitative protection)	Percentage	(quantity of protected water/total quantity of polluted water resources)* 100%	2%	34%	1	Quality sector	Water quality protection Water Falls
Amount of water pumped from renewable under ground water resources (Quantitative protection)	M.C.M	(quantity pumped in the basic year 2005-number of years until 2012*7)	4162	370	1	Waster basins monitoring + water affairs	Waster basins monitoring + water affairs
Per capita share	Liter/day/person	(quantity of yearly supply-yearly quantity technically lost)/(365*population count) <sup>3</sup>	100	120	1	Water Affairs	Information Lost water monitoring + PMU
Water available to supply <sup>4</sup>	M.C.M	Counter reading	301	370	1	Water Affairs	Water Affairs
Total water lost <sup>5</sup>	Percentage	(amount of lost water/pumped water)*100%	46,5%	32%	1	Information lost water monitoring+ water management+ water affairs +PMU	Information Lost water monitoring +PMU
Water balance for domestic use <sup>6</sup>	Liter/day/person	Amount of supply minus amount of	-32	-14	1	Water Affairs	Water affairs,

		demand /(365* population count)					PMU
Percentage of serviced citizens	Percentage	(Number of serviced citizens / population count)*100%	97%	98%	1	Customer service + water management	Customer service, PMU
Percentage of buildings serviced by waste water management	Percentage	(no. of buildings serviced/no. of buildings)	61%	70%	1	Customer service + waste station+ water management	Customer service + PMU
Percentage of water tested in accordance with national criteria	Percentage	(no. of quality tests performed /no. of tests that should be performed)* 100%	89% <u>7</u>	100%	1	Quality Sector	Water labs+ PMU
Percentage of water samples that match the tested criteria	Percentage	(no. of samples matching the criteria/total no. of samples)* 100%	98%	98%	1	Quality Sector	Water labs + PMU
Number of water shutdowns duo to failure in the network for every 1000 citizen	Percent	No. of water shutdowns/ 1000 active water user	Decrease by 5% yearly from the reference value		1	Water station + Customer service	Customer service + PMU

1 Resource that we want to protect is a drinking water source upon which a microbial pollution or nitrate station had to be established.

2 This number indicates to water pumped out from renewable water sources (National Plane) and total water pumping from renewable and un renewable water sources equals 507 million square meter for the year 2005.

3 Percentage lost duo to technical reasons for the year 2005 is 29%, for the year 2012 is 23% and for the year 2015 is 18% and before that 2005 it was 30%(National Plane Institute).

4 The source for this information comes from the Water Budget of the Ministry of Water and Irrigation for the year 2005 and it includes water available from non renewable sources.

5 The lost target for the year 2012 was calculated on the 2% yearly reduction According to Water Sector Plane 2002 – 2012.

6 Water for domestic use includes provided by the network for all purposes except agricultural uses.

7 The percentage of tests done for drinkable water quality to the total test battery in the criteria is 91% and for waste water is 88.6% acknowledging it was 70% in the year 2001.

Indicator factor = measured value divided by targeted value or "1" which comes less.

Example :Calculation of the factor of per capita share.

Targeted Value = 120 liter/day/person.

Measured Value = 100 liter/day/person.

Per capita share indicator =  $100 \div 120 = 0.83$

**Level of Service = ((Indicator of water percentage tested in accordance with national criteria + Indicator of water samples percentage that match the tested criteria + Per capita share indicator + Indicator of water available to supply + Indicator of total water lost + Water balance for domestic use indicator + Percentage of serviced citizens indicator + Percentage of buildings serviced by waste water management indicator + Indicator number of water shutdowns duo to failure in the network for every 1000 citizen )  $\div$  11)\* 100%**

**Second Strategic Goal: Improving Overall Citizens Approval on the  
Approval Scale from 7% to 80% by the Year 2012 53, 63**

Performance indicator	Measurement unit	Method of measurement	Reference value	Target value	Measurement repetition/year	Carrying out measurement responsibility	Party responsible for that measurement
			2005	2012			
Extent of approval on water delivered	On a scale of 1 to 10	Questionnaire	5.5	7	1	Water Sector	Subscribers management
Approval on taking turn system	On a scale of 1 to 10	Questionnaire	5.5	8	1	Water Management	Subscribers management
Approval of water quality	On a scale of 1 to 10	Questionnaire	5.3	8	1	Quality Management	Subscribers management
No. of complaints for every 1000 Water service subscriber	Number	No. of water complaints / for 1000 water service subscriber	390	180	1	Water Management	Subscribers management+ PMU
No. of complaints for every 1000 waste water management subscriber	Number	No. of waste water management complaints / 1000 waste water management subscriber			1	Water Management	Subscribers management+ PMU
Approval on the turf	On a scale of 1 to 10	Questionnaire	5,7	6	1	Subscribers management	Subscribers management+ PMU
No. of objections on the bills	Number	No. of objections / for every 1000 water service subscribers	36	15	1	Water Management	Subscribers management
Approval of the employees practices	On a scale of 1 to 10	Questionnaire	6,6	9	1	Water Management	Subscribers management
Approval on the speed by which complaints are handled	On a scale of 1 to 10	Questionnaire	4,5	8	1	Water Management	Subscribers management
Approval on the speed the phone is answered	On a scale of 1 to 10	Questionnaire	4,5	8	1	Water Management	Subscribers management
Approval on the speed new subscriptions are handled	On a scale of 1 to 10	Questionnaire	4,5	8	1	Water Management	Subscribers management

	10					nt	
Extent of approval on the location where the service takes place	On a scale of 1 to 10	Questionnaire	5	8	1	Water Management	Subscribers management
Extent of approval on the way the bills are delivered	On a scale of 1 to 10	Questionnaire	6,9	9	1	Water Management	Subscribers management

**Third Goal: Retrieval of the Financial Capacity of the Authority's Budget**  
**2% Yearly until Year 2012 21**

Performance indicator	Measurement unit	Method of measurement	Reference value	Target value	Measurement repetition	Carrying out measurement responsibility	Party responsible for that measurement
			2005	2012			
Percent retrieved of the total coast of cubic meter of drinkable water	Percentage	Bills return/total drinking water coast	49,4%	60%	1	Finance + Subscribers&Water Management	Finance
Percentage retrieved from the total coast of managing 1cubic meter of waste water	Percentage	Waste water bills return/Total coast of waste water management	35,8%	45%	1	Finance + Subscribers&Water Management	Finance
Total Coast retrieval percent	Percentage	Total return/total coast	77,6%	80%	1	Finance	Finance
Percent retrieved from the coast of running and maintenance	Percentage	Total return/ coast of running and maintenance	133,4%	143%	1	Finance + Subscribers & Water Management	Finance + PMU
Percent retrieved from bills	Percentage	Sum of yearly paid bills/Sum of issued bills in that year	99,0%	110%	1	Subscribers & Water Management	Subscribers Management + PMU
Percentage of paid bills to bills waiting to be paid (water & waste water)	Percentage	Sum of bills/Sum of paid bills in that year	53,7%	30%	1	Subscribers & Water Management	Subscribers Management
Total loss percentage	Percentage	(Quantity of water lost/quantity of water pumped)*100%	46,3%	32%	1	Information + Water loss monitoring + water management + water affairs + PMU	Information + Water loss monitoring
Return on investment (capital)	Percentage	Margin of profit*on circulated capital or (net profit+ debt interest)/average value of capital	-2,5%	-2%	1	Finance	Finance
Percent of loans to capital	Percentage	Loans/Sum of owned and debt capital	23,7%	20%	1	Finance	Finance
Percent of total investment to total expenditure on projects	Percentage	Self financed projects/Total cost project financed	40,4%	45%	1	Finance	Finance
Percent of Electricity coast to the total running and management coast	Percentage	Electricity Expenses/Maintenance and running expenses	48,5%	44%		Finance + Water affairs	PMU+ Finance

**Fourth Goal: Raising the Caliber of the Operation (regarding speed, cost Efficiency and Quality of Performance 5% Yearly until Year 2012 64**

Performance indicator	Measurement unit	Method of measurement	Reference value		Target value	Measurement repetition	Carrying out measurement responsibility	Party responsible for that measurement
			2005	2012				
Total loss percentage	Percentage	(Quantity of water lost/quantity of water pumped)*100%	46,3%	32%	1	Information + Water loss monitoring + water management + water affairs + PMU	Information + Water loss monitoring	
No. of Water network mishaps for every 1Km of the network length	Number	No. of yearly mishaps/length of water network	To be lowered by 5% yearly from the reference value		1	Water management + water affairs	Subscribers management + Water affairs + PMU	
No. of yearly mishaps in waste water network for every 1 Km of the network length	Number	No. of yearly mishaps/length of waste water network	To be lowered by 5% yearly from the reference value		1	Water Management + Waste water management	Subscribers management + Waste water management + PMU	
Average time for fixing the mishap	Number of hours	Hours spent in fixing/No. of mishaps	To be lowered by 5% yearly from the reference value		1	Water management + Subscribers management	Subscribers management + PMU	
No. of times plugging in the waste water network occurs per year in 1 Km distance	No. of plugging	No. of plugging in waste water network yearly/network length	To be lowered by 5% yearly from the reference value		1	Water Management + Waste water management	Waste water management	
Time ratio average to conduct major operation in the reference year (1)	Percentage	Average time to finish the operation in the year in measurement /average time to finish the operation in the reference year × 100%	To be lowered by 4% yearly from the reference value		1	Authority's Sectors	Authority's sectors	
Mean ratio of major operations coast in reference year (1)	Percentage	Mean coast of operation in the year of measurement / mean coast of operation in reference year × 100%	To be lowered by 4% yearly from the reference value		1	Finance + Water management	Finance	
Ratio of assists to expenses in the budget	Percentage	Expenses / Expenditure in the budget	59%	95%	1	Finance	Finance	
No. of water complaints for every 1000 water Subscriber	Number	Number of water complaints/1000 water participants	308	120	1	Water Management	Subscribers management + PMU	
No. of waste water complaints for every 1000 waste water subscriber	Number	Number of waste water complaints/1000 waste water management	137	85	1	Water Management + Waste water management	Subscribers management + PMU	
Percentage of active participants	Percentage	Number of active participants (2) /number of participants	5%	3%	1	Water management + Subscribers management	Subscribers management + PMU	
Percentage of matching the turn system to the announced one by the Authority	Percentage	Number of deviations in the turn system/ number of turn cycles in the year	90%	97%	1	Water Management + Water Affairs	Subscribers management	

Percentage of matching treated waste water criteria to the standard criteria	Percentage	(Stations average(No. of samples agreeing with the reference criteria/No. of samples tested for every station) *(water treated in the station/quantity of water treated in all the stations)	To be lowered by 5% yearly from the reference value	1	Water Management + Waste water management	Waste water management
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**Fifth Goal: Increasing Employees Satisfaction on the Approval Scale  
from 63% to 80% by Year 2012 54, 65**

Performance indicator	Measurement unit	Method of measurement	Reference value	Target value	Measurement repetition	Carrying out measurement responsibility	Party responsible for that measurement
			2005	2012			
No. of employees complaints per 100 employee per year	No. of complaints /100 employee /year	Direct count	14	6	1	management	Management
No. of employees leaving the job (resignations, early retirement & unpaid vacations)/100 employee/year	No. of employees /100 employee /year	Direct count	1,5	1	1	management	Management
Extent of employee satisfaction on his salary	Scale of 1:10	Questionnaire	5,2	7,5	1	management	Management
Extent of employee approval on his relationship with his superior	Scale of 1:10	Questionnaire	6,4	8	1	Management+ water management	Management
Extent of employee approval on his relationship with his colleagues	Scale of 1:10	Questionnaire	8,2	9	1	Management+ water management	Management
Extent of employee approval on the work environment	Scale of 1:10	Questionnaire	6	8	1	Management+ water management	Management
Extent of employee approval on his progress at work (promotions & upgrading)	Scale of 1:10	Questionnaire	5,5	8	1	Management+ water management	Management
Appreciation by the management on a job done to standard	No. of rewards & benefits*/1000 employee/year	Counting	5,3	50	1	Management+ water management	Management

**Sixth Goal: Increasing the Skills of the Authority's Employees (skills & know how) by 9% Yearly by Year 2012 28**

Performance indicator	Measurement unit	Method of measurement	Reference value	Target value	Measurement repetition	Carrying out measurement responsibility	Party responsible for that measurement
			2005	2012			
Level of knowledge of the employee in his field of work	Scale of 1:10	Number of qualification the employee has from the qualifications stated in the job description	Yearly improvement by 5% from reference value		1	Management+ Human Resources Development & Training Unit	Management
Degree of skill and ability in finishing the work	Scale of 1:10	Average score in the employee yearly evaluation	Yearly improvement by 5% from reference value		1	Management+ Human Resources	Management

		(skill and ability section)				Development & Training Unit	
Days of training per year	Day/year	Total training days number / number of employees	31,5	50	1	Human Resources Development & Training Unit	Human Resources Development & Training Unit +PMU
Percentage of employees who continue their vocational or academic education in their specialty field	Percentage	Total count of those who have finished/total employees count	0,6%	2%	1	Management	Management
Percentage of employees who have a university degree		Number of employees who are university graduates/ total employees count			1	Management	Management +PMU
Number of new references in the Water sector	Number	Number of references enlisted in the documents center	50	200	1	Management	Management
Number of hours that the employees spent in attending lecture or workshops	Number	Total hours spent in training or workshops	11,370	15,000	1	Human Resources Development & Training Unit	Human Resources Development & Training Unit
Number of innovative solution to work related problems	Number	Number of rewards and bonuses*	108	150	1	Management+ Water management	Management
Number of employees who exchange work related information over the internet	Percentage	Number of employees who are linked via the internet/Total station employees	39%	90%	1	Management+ Computer Management	Computer Management
Number of employees for every 1000 service subscriber	Number	Number of employees/ 1000 water service subscriber	8,2	7	1	Management	Management
Emergency management capabilities	Percentage	Average score in the employee yearly evaluation (emergency handling section)			1	Management+ Water management	Management
Capabilities of decision making and carrying responsibility	Percentage	Average score in the employee yearly evaluation (ability to make the right decision)			1	Management+ Water management	Management
Percentage of running and maintenance coasts to the rest of expenses	Percentage	Expenses of running and maintenance / Total expenses	58%	50%	1	Finance	Finance

#### Performance Index

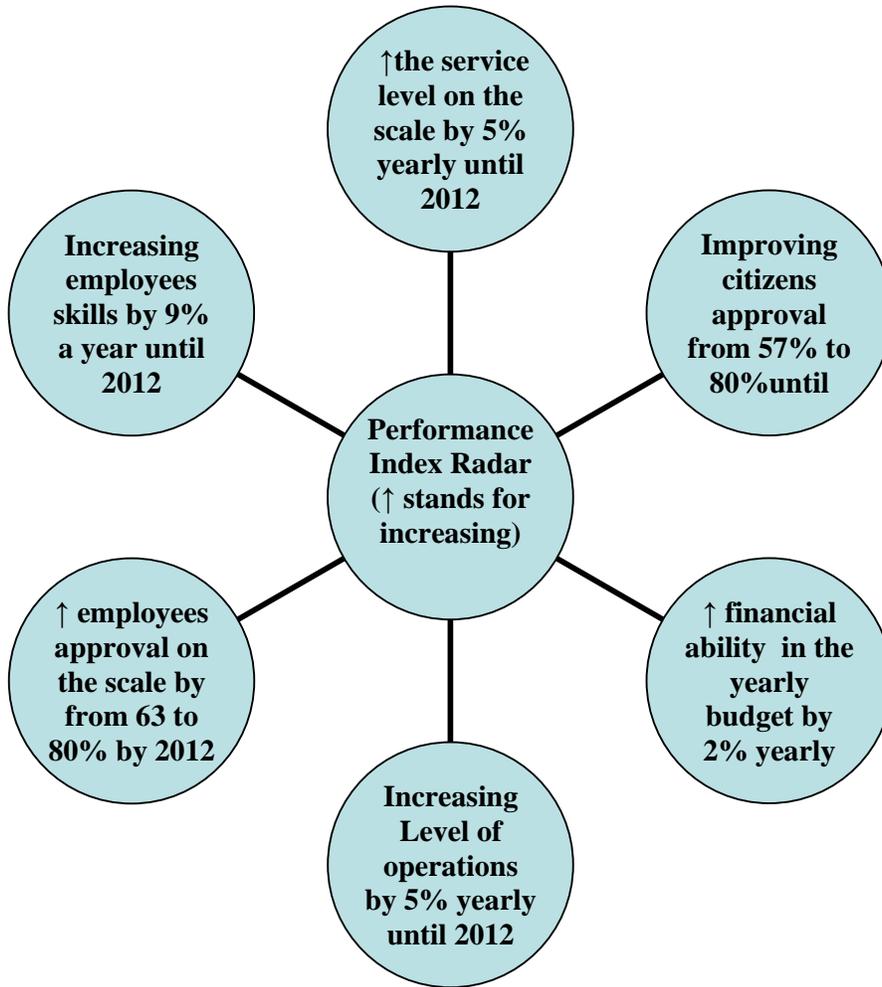
Total performance card is considered as a complex indicator that is composed of the six previous goals: Service level, citizen satisfaction, financial capability, operations value, employees' satisfaction, employees skills. It is clear on the balanced scorecard for this index presented below.

A reference value has been estimated for this index from previous reference indices of the goals and the reference value of advance or retreat in overall performance.

## Total Performance Index (Performance Index) 56

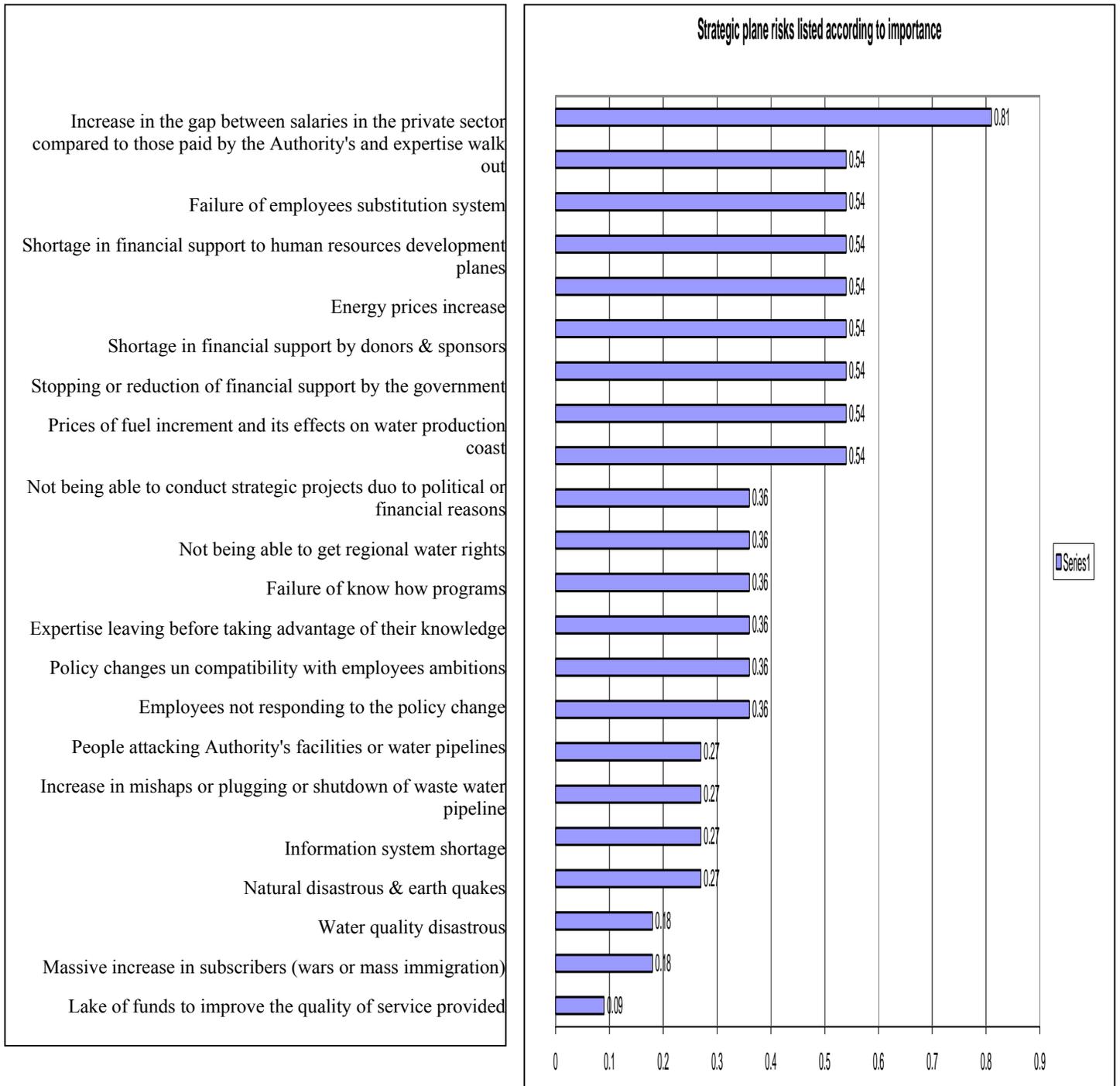
### GOAL : TOTAL PERFORMANCE INDEX

Performance Index	Measurement unit	Method of measurement	Reference value		Repetition of measurement/year	Who does it	Whose responsible for it
			2006	2012			
Increasing the Authority's service level (managerial, water & waste water) on the service scale by 5% yearly until the year 2012	Percentage	(Current index value/services index value in the year in question)*100%	100%	130%	1	Secretary general assistants & directors of central departments	Policies unit
Improving citizens satisfaction on the approval scale from 57% to 80% by the year 2012	Percentage	Questionnaire	57%	80%	1	Secretary general assistants & directors of central departments	Policies unit
Increasing the financial power of the yearly budget by 2% yearly until to 2012	Percentage	(Current index value/financial ability index value in the year in question)*100%	100%	112%	1	Secretary general assistants & directors of central departments	Policies unit
Raising operations value (higher speed, less coast, better execution) by 5% yearly to the year 2012	Percentage	(Current index value/operations index value in the year in question)*100%	100%	130%	1	Secretary general assistants & directors of central departments	Policies unit
Increasing the employees satisfaction on the approval scale from 63% to 80% by the year 2012	Percentage	Questionnaire	63%	80%	1	Secretary general assistants & directors of central departments	Policies unit
Increasing employees skills(technical & know how) by 9% until the year 2012	Percentage	(Current index value/employees skills index value in the year in question)*100%	100%	154%	1	Secretary general assistants & directors of central departments	Policies unit



## Chapter 4. Risk Management Plan 33

Major risks to achieving strategic goals have been listed in accordance to their importance, probability of occurrence and the impact they may have on strategic goals achievement as the following graph shows, and policies to deal with these risks have been drawn.



## Chapter 5. Strategies and Work Programs

A Strategy is a means to achieve a goal, sometimes a single strategy may achieve a goal and at times you may need more than one strategy to achieve that one goal, or you may need more than one strategy to achieve more than one goal. As is clarified by the following table, And for the Authority to achieve success the following strategies, frame work and work planes must be adopted, and the strategies mentioned below and work planes are considered a road map from which programs and detailed action planes will spring out and these will be linked with the subsidiary performance indicators(indices) covering all the Water Authority's sectors through which working steps are put forward through applying those strategic goals regarding performance indicators(indices) which are listed in balanced scorecards are achieved.

Goal \ Strategy	Management of water supply & waste water cycle	Adopting know how Management	Managing resources and Operations	Citizen's relationship management
Elevation of Authority services (Water supply & Waste Water Management ) on the services scale by 5%yearly until the year 2012				
Improving Overall Citizens Approval on the 66 approval scale from 7% to 80% by the year 2012				
Retrieval of the financial capacity of the 22 Authority's budget 2%yearly until the year 2012				
Raising the caliber of the operation (regarding speed, cost efficiency and quality of performance 5% yearly until the year 2012 67				
Increasing employees satisfaction on the approval scale from 63% to 80% by the year 2012				
Increasing the skills of the Authority's employees (skills & know how) by 9% yearly by the year 2012. 29				

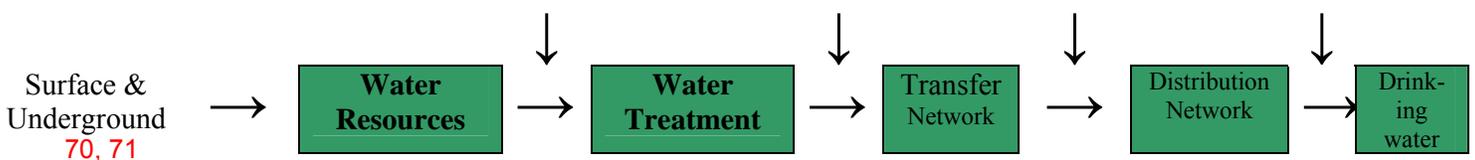
First Strategy: Uplifting the Supply and Demand Management System to a Comprehensive platform that includes Water resources, Water and Waste Water Management System by Adopting a Water Supply Cycle Management System.

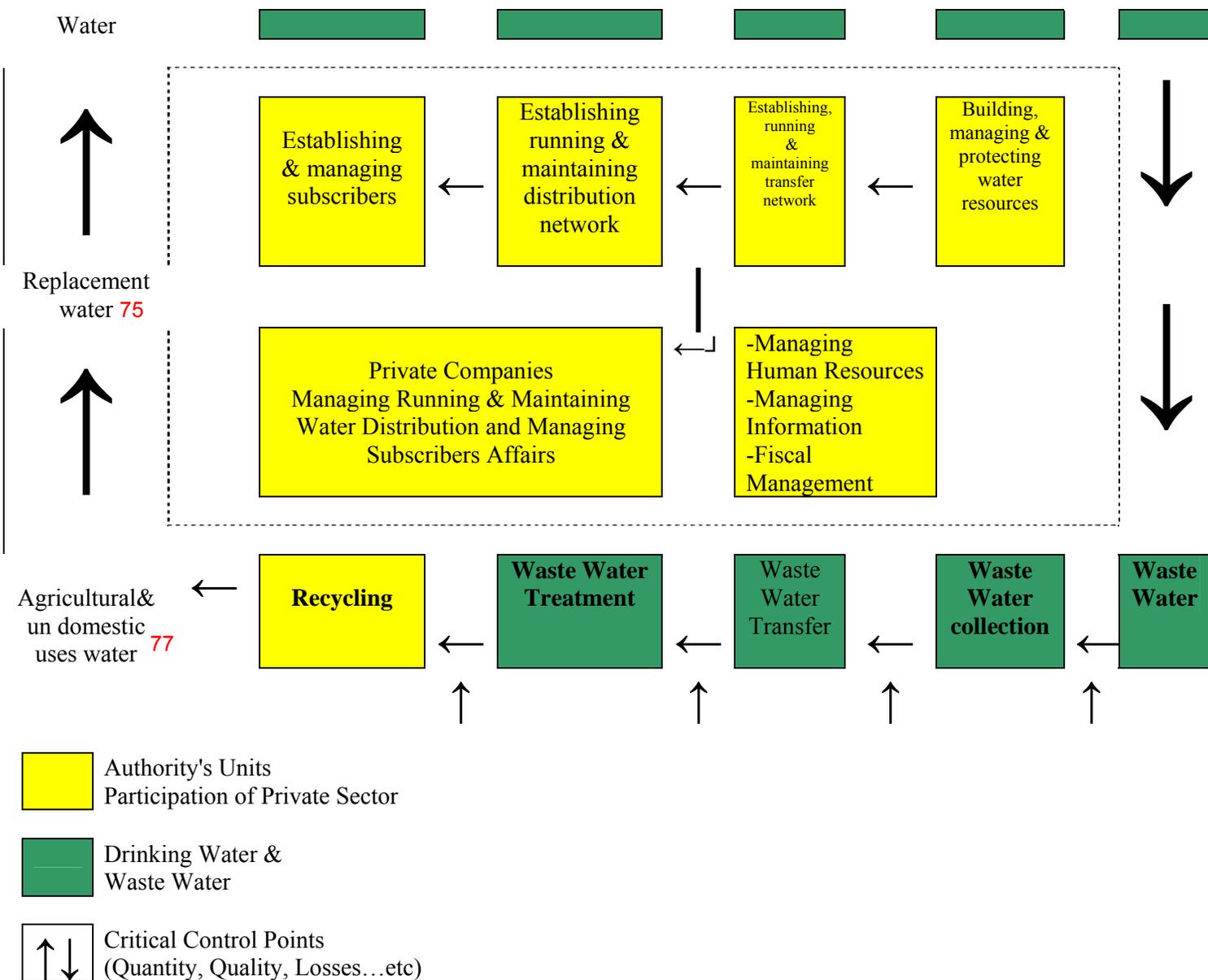
The Authority has adopted in the past years the supply strategy then the demand strategy was implemented and this improved the Authority's performance. The new strategic goals required switching to a comprehensive management plane of supply and cycle management model, because the Authority's responsibility extends - from managing, protecting water resources and water treatment if necessity entails- to supplying water through pumping it via water networks to the citizens and transferring waste water via waste water network back to water treatment stations and from there it could be used in other non domestic uses. 41, 74

The comprehensive management system requires reorganizing the Authority's work protocol to be in accordance with the supply cycle -as is clarified in the following chart – and building models for decision making in the same frame work with logistic information management of every aspect related to the cycle including water resources, financial resources and human resources. The Authority's activity concentrate in the main cycle and spreads to its different parts, as is the Authority's role is to manage and protect water resources then maintain and initiate work in the water resources, water transfer and distribution networks then subscribers affairs management in addition to a number of supporting affairs management such as human resources, information and fiscal management. 10, 59

This cycle represents a business model of the Authority's work that stresses major operations and auxiliary supporting operations and is used in planning projects, implementing operations, reorganizing different resources to carry out planes and control activities and performance through pin pointing critical control points that are concerned with quality, quantity or value and coast monitoring and because they have a cause and effect relationship we can predict the effect that changing one part of the cycle has on the other parts of the supply cycle. And because the Authority is undertaking or planning to undertake a number of water or waste water projects it's worthwhile to pin point the place and the effect of these projects on the supply cycle. 60

The work of the supply cycle does not contradict the private sector participation in managing some stages of the supply cycle and does not contradict investment on the contrary this supply cycle model is a blessing as it helps the Authority's Management and government in pin pointing the places and stages in the cycle where the private sector contribution can be more beneficial and rewarding to the citizens and Authority. From the supply cycle management system springs a number of work projects and programs the intention behind them is to improve the level of service as the following table details.





### Strategies of the Supply Cycle Management System

Strategy = Supply Cycle Management		
Goal: Raising the service level (water & waste water) by 5% yearly until the year 2012		
Program-Project	Execution Responsibility	Risks
1. Restructuring the Water Authority 2	Managers & Unit Managers	- Weakness or lack of Finances - Weakness or lack of information
2. Reviewing programmed projects & pin pointing them on the supply cycle to examine their effect & priority.	Managers & Unit Managers	
3. Increasing the amount of water pumped through searching for new resources & improving plus protecting the current ones.	Water Affairs	- The lack of

46	4. Rehabilitation & renewing water networks to reduce lost water & improve the service	Water Affairs + Water Management + PMU	sufficient supply of water to counter act increased demand  - Network weakness to a degree that effects any program of reducing lost water
42, 47, 76	5. Improving waste water facilities & services to go hand in hand with the increase of available water	Waste Water + Water Management	
	6. Increase in reusing treated water	Waste Water	
50	7. Water resources protection	Quality Sector, Water Basins	
34	8. Doing a study to pin point strength, jamming & the efficiency points in the supply cycle	Water Affairs + Waste Water + Water Management + PMU	
15	9. Water demand management programs	Subscribers Management + Water Management	

Second Strategy: Building A Partnership With Citizens To Improve The Approval Level By Adopting "Citizen Resources Management Strategy".

To Succeed in increasing citizens approval of the Authority and its services the Authority has to know and concur with citizens opinion of the Authority and its services, information has also to be collected about behaviors, tendencies and citizens needs from the Authority using scientific methods. And this information must be updated regularly, and this information can be used to build cooperation and a trust relationship with the citizens. In a subsequent stage this information can be used to develop the services as providing such as electronic government service or butting strategies to change citizens consumption behavioral tendencies. This strategy concerns it self with managing relationships with the citizens. The following table lists the strategies suggested for this program and their risks. 68

**Programs for the Strategy that Concerns it Self with Managing Relationships with the Citizens 69**

Strategy = Authority Citizens Relationship Management		
Goal: Improving Citizens Approval on the Scale of Approval from 57% to 80% Until the Year 2012.		
Program - Projects	Execution Responsibility	Risks
1. Establishing a management unit to manage citizens relations with the Authority that give it a monopoly on every relationship between citizen & the Authority, and it will be the link between the citizens and the Authority Departments.	The Secretary General Assistants & the Unit Managers + Subscribers Management	- Weakness or lack of Finances  - Weakness or lack of information
2. Creating a program to change the Authority prospective to serving the citizens.	The Secretary General Assistants & the Unit Managers + Management	- Resistance of change by the Authority's employees
3. Linking decision making to the citizen's information analysis to avoid making decisions that damages the relationship with the citizens.	Subscribers Management, Water Management	

Third Strategy: Reengineering Operations and Resources Management with Efficacy to Control Cost and Improve Productivity.

Operations are an important part of any establishment, and in the Authority managerial, fiscal, and utilities are among other operations that play an important part in performance innovation and achieving satisfaction of both employees and citizens putting this in prospective the Authority does not have clear mechanisms to run operations and does not have enough analytical reports about their efficiency and performance. So the strategy will improve the value of operations by doing that the fiscal capability will improve, citizens approval and employees satisfaction will be attained, the following table shows the work programs for this strategy.

Programs for Running Operations and Resources Strategy 43

Strategy = Running operations and Resources		
Goals:		
-Increasing the financial capability in the Authority's yearly budget by 2% a year until 2012.		
-Increasing the value of operations (Speeding accomplishments, Decreasing coast and increasing the quality of performance) by 5% a year until the year 2012.		
-Increasing the approval of employees of the Authority from 63% to 80% by the end of 2012.		
-Increasing the level of service in the fields of drinking water, waste water and management by 5% yearly on the services scale until the year 2012.		
Program - Project	Execution Responsibility	Risks
1. Reengineering operations especially those impending capital or pertain to maintenance and functioning. 48	The Secretary General Assistants & the Unit Managers & Water Management	1- Weakness or lack of Finances 2- Weakness or lack of information
2. Restructuring human resources.	Managerial Management	
3. Restructuring fiscal management. 3	Fiscal Management	3- Resistance of change by the Authority's employees 4 - Lack of Expertise in the Authority.
4. Adopting a program to lower coast and improve productivity	The Secretary General Assistants & the Unit Managers & Water Management	
5. Adopting a program to conserve energy.	Information and lost water unit, Water Affairs & Water Management	
6. Adopting a program of preventive maintenance and a program of predictive maintenance.	Water Affairs, Waste Water Management and Water Management	
7. Adopting a program to lower the lost water with incentives for the employees and citizens pertaining to the program success. 49	Information and lost water unit, Water Affairs & Water Management, Management, PMU	

Fourth Strategy: Raising the Capabilities of the Employees by Adopting a Knowledge Program, Building a Culture of Satisfying Subscribers and Service Excellence.

Knowledge is considered an important element of success in this economy age and knowledge here is not one that you can document, or previously documented in booklets or instruction manuals, it is the knowledge that the employees innovate and come up with to solve problems at work or thinking methods that lead to innovation it is a common fact that establishments reorganize them selves around information (know how) centers depending on its need to exchange and exploit this information. The building of know how information based company is both a challenge and an opportunity of success, although some institutions fall short in some aspects of knowledge matrix may suffice, because it is difficult to transform to a completely knowledge based establishment, never the less some aspects are crucial to develop a suitable know how environment the following table shows the programs to achieve this transition. 16, 30

Programs for Strategy and Know How Management 31

Strategy		
Goals: Increasing The Authority's Employees Capabilities (Technical & Know How) by 9% a year until year2012		
Program - Project	Execution Responsibility	Risks
1. Restructuring Human resources depending on the skills, know how, knowledge and attitude of the employees.. 4	Management, Human Resources & Water Management	1- Weakness or lack of Finances
2. Restructuring human resources. 5	Management, Water Affairs, waste water management & Water Managements	2- Weakness or lack of information 3- Low level of information exchange.
3. Encouraging Group ethics & Team work building	The Secretary General Assistants & the Unit Managers & Water Management	
4. Encouraging Learning.	Management, Human Resources & Water Management	
5. Participating in renewing the information database of the water sector. 35	Water Affairs, Information and lost water monitoring unit, Computer Management, Waste water & Water management	
6. Preparing a comprehensive training program to raise the efficiency of the employees.	Managerial Development & Training Unit	