Ismailia Governorate **Ministry of State for Environmental Affairs**

Environmental Management Unit **Egyptian Environmental Affairs Agency**

Environmental Action Plan

Ismailia Governorate

April 2008

Introduction of the Minister of State for Environmental Affairs

Introduction of the Governor of Ismailia

One of the most changeable tasks in our today's world is the protection of environment. The success of confrontation this challenge will be the insurance to the future of the forthcoming generations. The environmental legalization is not enough to protect all the natural resources. Although international conferences, local workshops, national seminars have been held and societies have been established, the individual manner to protect environment is the essence of real protection. Some of the individuals have tried to behave in ways which cause much damage to the environment. Therefore, the environmental awareness and education can be of a great help to change this behavior. There must be an integrated system to all people to protect environment by both education and legalization.

Although we have many environmental problems, but most of them are interwoven and complicated. There are many negative attitudes toward nature from the man which have led to accumulated series of environmental problems. These problems need complicated solutions and long period of time since we do not have a general coordination of environmental plans. Moreover, we must have environmental structure for environmental units in both small and big establishments to protect both of the environment and the human life.

All the citizens have to be committed to a coordinated work in the environmental field and to implement the environment law no.4 of 1994 and other rules and regulations on both local and regional levels.

We have coordinated our efforts in practical way to comply with protecting natural resources and to satisfy the needs of the people in Ismailia Governorate. Our Environmental Action Plan has included all the elements that put an end to our environmental challenges sooner or later.

We hope that all our efforts, aims, goals and inspirations to be achieved under the leadership of the son of Egypt President Mohamed Hossny Mubarak.

Major General Abdul Gileel El-Fakharany.
Governor of Ismailia

Thanks

The Environmental Management Unit is funded by the Danish Agency for International Development "DANIDA", would like to thank all those who participated in preparing the environmental action Plan of Ismailia Governorate.

We would like also to thank and point out to the task force which participated and spent their efforts and time to prepare the Environmental Action Plan. We strongly believe that the action plan can not be done without the real participation of the people of the governorate themselves.

We would like to present special thanks to Major General Abdul El-Gileel El-Fakharany, the Governor of Ismailia, who took personally much care in supporting this work and gave much of his time to follow the practical steps of preparing this valuable action plan.

We have appreciated the efforts of the Secretary General, the Secretary General Assistant and working groups who coordinated with the Environmental Management Unit, EMU, in Ismailia Governorate for their strong efforts and hard work in preparing the Enviromental action plan.

Contain

1. The strategic framework of the Environmental Action Plan…….
1-1 Introduction and identification of the Environmental Action Plan …...
1-2 Why we need the Environmental Action Plan…….
1-3 How we prepared for Environmental Action Plan……..

2. The environmental Problems and the practical priorities of Environmental Profile of the Governorate……
3. The Future vision up to 2012……...

4. The environmental priorities……
4-1The solid and hazardous waste……...

4-1-1 Solid Waste

4-1-1-1General Background……..
4-2-1-1The achievements in the last five years…….
4-2-1-1-1 Decisions and measurements ……....
4-2-2-1-1 Technical and Administrative support…….....
4-2-3-1-1 Implemented programs and projects…….
4-2-4-1-1 Projects and programs under construction……....
4-1-1-3 The current situation: Problems and causes…….
4-1-1-4 The Vision and goals …….
4-1-1-5 The required projects and targets…….……
5-1-1-1 List of sub-projects in the five-year plan……...
5-1-1-2 High priory Projects……
5-1-1-3 Medium Priority Projects……....
6-1-1-1 Profile for some Priority Projects……...

4-1-1-2 Health care Waste Management
4-1-1-3 General Background……..
4-1-1-4 The Achievements in the last five years……...
4-2-1-5 Decisions and measurements ….……..……..……..
4-2-2-6 Technical and Administrative support…….……..
4-2-3-7 Implemented programs and projects…….
4-2-4-8 Projects and programs under construction……....
4-1-1-9 The current situation: Problems and causes……..
4-1-1-10The Vision and goals …….
4-1-1-11 The required projects and targets…….…….....
4-1-1-2 High Priory Projects…….……...
4-1-1-3 Medium Priority Projects……....
4-1-1-1 Profile for some Priority Projects……....

4-2 Potable Water and Sanitation……..……

4-2-1 Drinking water……
4-2-1-1 General Back ground……...……..….
4-2-1-2 achievements in the last five years……
4-2-2-2-1 Decisions and measurements……....
4-2-2-6 Technical and Administrative support…….……..
4-2-3-7 Implemented programs and projects……..
4-2-4-8 Projects and programs under construction……....
4-1-1-9 The current situation: Problems and causes……..
4-1-1-10The Vision and goals ……
4-1-1-11 The required projects and targets……..…….....
4-1-1-1-2 A List of the sub-projects in the five-year plan……....
4-1-1-2 High priory Projects…….……
4-1-1-3 Medium Priority Projects……....
4-1-1-1 Profile for some Priority Projects……...

4-2-2 Sanitation

4-2-1-1 General Back ground……...……..….
4-2-1-2 Achievements in the last five years……
4-2-2-2-1 Decisions and measurements……..…
4-2-2-6 Technical and Administrative support…….……
4-2-3-7 Implemented programs and projects…….
4-2-4-8 Projects and programs under construction……...
4-1-1-9 The current situation: Problems and causes…….
4-1-1-10The Vision and goals ……..
4-1-1-11 The required projects and targets……..…….....
4-1-1-1-2 A List of the sub-projects in the five-year plan……..
4-1-1-2 High priory Projects…….……
4-1-1-3 Medium Priority Projects……....
4-1-1-1 Profile for some Priority Projects……...

4-3 The Water Resources and Coasts

4-2-1-1 General Back ground……...…….…….…..
4-2-1-2 Achievements in the last five years……....
4-2-2-2-1 Decisions and measurements……..…
4-2-2-6 Technical and Administrative support…….…….….
4-2-3-7 Implemented programs and projects……..
4-2-4-8 Projects and programs under construction……....
4-1-1-9 The current situation: Problems and causes……..
4-1-1-10The Vision and goals ……...
4-1-1-11 The required projects and targets……..…….....

4-1-1-1-2 A List of the sub-projects in the five-year plan…….
4-1-1-2 High priory Projects…….……
4-1-1-3 Medium Priority Projects……....
4-1-1-1 Profile for some Priority Projects……...

4-4 The Industrial Abetment and Hazardous Waste

4-2-1-1 General Back ground……...……..…...
4-2-1-2 Achievements in the last five years…….…
4-2-2-2-1 Decisions and measurements……...…
4-2-2-6 Technical and Administrative support…….……
4-2-3-7 Implemented programs and projects……. .
4-2-4-8 Projects and programs under construction……..
4-1-1-9 The current situation: Problems and causes……
4-1-1-10The Vision and goals ……
4-1-1-11 The required projects and targets…….....
4-1-1-1-2 A List of the sub-projects in the five-year plan…….
4-1-1-2 High Priory pobjects…….……..
4-1-1-3 Medium Priority Projects……...
4-1-1-1 Profile for some Priority Projects……..

4-5 Environmental Awareness

4-2-1-1 General Back ground……...……..….
4-2-1-2 achievements in the last five years……
4-2-2-2-1 Decisions and measurements……..…
4-2-2-6 Technical and Administrative support…….……..
4-2-3-7 Implemented programs and projects……
4-2-4-8 Projects and programs under construction……...
4-1-1-9 The current situation: Problems and causes……..
4-1-1-10The Vision and goals ……...
4-1-1-11 The required projects and targets…….....
4-1-1-1-2 A List of the sub-projects in the five-year plan……
4-1-1-2 High Priory Projects…….……
4-1-1-3 Medium Priority Projects……..……...
4-1-1-1 Profile for some Priority Projects……..

5. The required works to raise the Environmental Awareness…...

6. Institutional Support and Environmental Capacity building in Governorate...
6-1 Institutional Support and Environmental Capacity building…….
6-2 Planning and the Environmental Management Unit……...
6-3 Principal concerned environmental directorates ……..…..
6-4 Institutional support to other agencies……
6-5 Training……

7. The Roles and Responsibilities ……..…...……..

8. The funding and implementing the plan…….…….
8-1 The Administrative agencies…….…….
8-2 Funding Agencies and Foreign donors……..
8-3 Funding Agencies and local donors……...
8-4 Private Sector……..
8-5 Non- governmental organizations……..…....
9. The impact of Participation on the national and international issues... ....
10. Follow-up monitoring and evaluation of the plan……..
10-1 Implementation priorities…….……....
10-2 Annual Evaluation……...…..
10-3 Sustainability of Environmental Action Plan…….....…...

11. Risks of un- implementing the projects…….
12.Conclusion……

13.Annexes……
13-1-1 Annex (1) list of working groups and implemented workshops….....
13-1-2 Group of the solid and health care waste…….....
13-1-2 Group pf the potable water…….……
13-1-3 Group of Sanitation ……
13-1-4 Group of Water resources and coasts……...
13-1-5 Group of Industrial abetment……....
13-1-6 Group of Environmental awareness…….
13-2 Annex (2) Profile of the industrial areas in Ismailia Governorate…… ..

13-3 Annex (3) References of environmental action plan…….

The Environmental Profile of Ismailia in brief

Location:
Ismailia Governorate laid in the Eastern part of the Arab Republic of Egypt in the med way of Suez Canal. Temsah and Bitter lakes penetrate Suez Canal. Ismailia extends to borders with Sharqya Governorate in the west, borders with Suez and Cairo governorates in the south. It has also borders with Port Said Governorate in the north. Ismailia is the Eastern gateway of Egypt to the Arab countries in the Asian continent. Ismailia is also in the med way of Suez Canal region which contains the other four governorates, Port Said in the north, Suez in the south, North and South Sinai in the east. This position has not only a political effect but it has also economic and social ones.

Area:
Ismailia is about 5,067 KM2

Weather:
Winter is very warm for long periods with light rains. In summer is mild and clement with some humidity. But it is very temperate most time of the year.

Population:
Population of Ismailia is 943,832 in 2006. 79% of the population is in the rural areas while 21% is in the urban areas. The rate of population growth is 2.1% and the population density is 1581 per km2

The Administrative Division:
Ismailia is a newly governorate. It was formed partially from Port Said and Sharqya governorates in 1959. The governorate has five markazes. It includes Ismailia city and markaz, City and markaz of Fayed, city and markaz of Tal Kebeer, City and markaz of Qantara West, City and markaz of Qantara East, in addition to two towns of Abu Sweer and Kassasseen. It has 25 local units and 712 hamlets.

Economic basis:
The per capita of the total local production is US $ 4490.10. The total national production is US $ 6642, 90. Those who live under the poverty level are 68,900 .This represents 8, 25 % of the total population of the Governorate. The number of unemployed manpower is 31,900 represents 6, 6% of the total manpower. The economy of the Governorate depends on the agricultural and industrial productions besides the fishing.

Agriculture:
Ismialia is one of the rich agricultural governorates in Egypt. It has many different vegetables and fruits (mango- strawberry- beans- Tomatoes- sesame- bean stalk). There are many agricultural developing plans to reclaim lands. Ismailia could reclaim 350,000 Faddens in the east of Suez

Canal. In addition to this 75,000 Fadden will be reclaimed in the east of lakes provided with irrigation, treatment of agricultural waste.

Fisheries

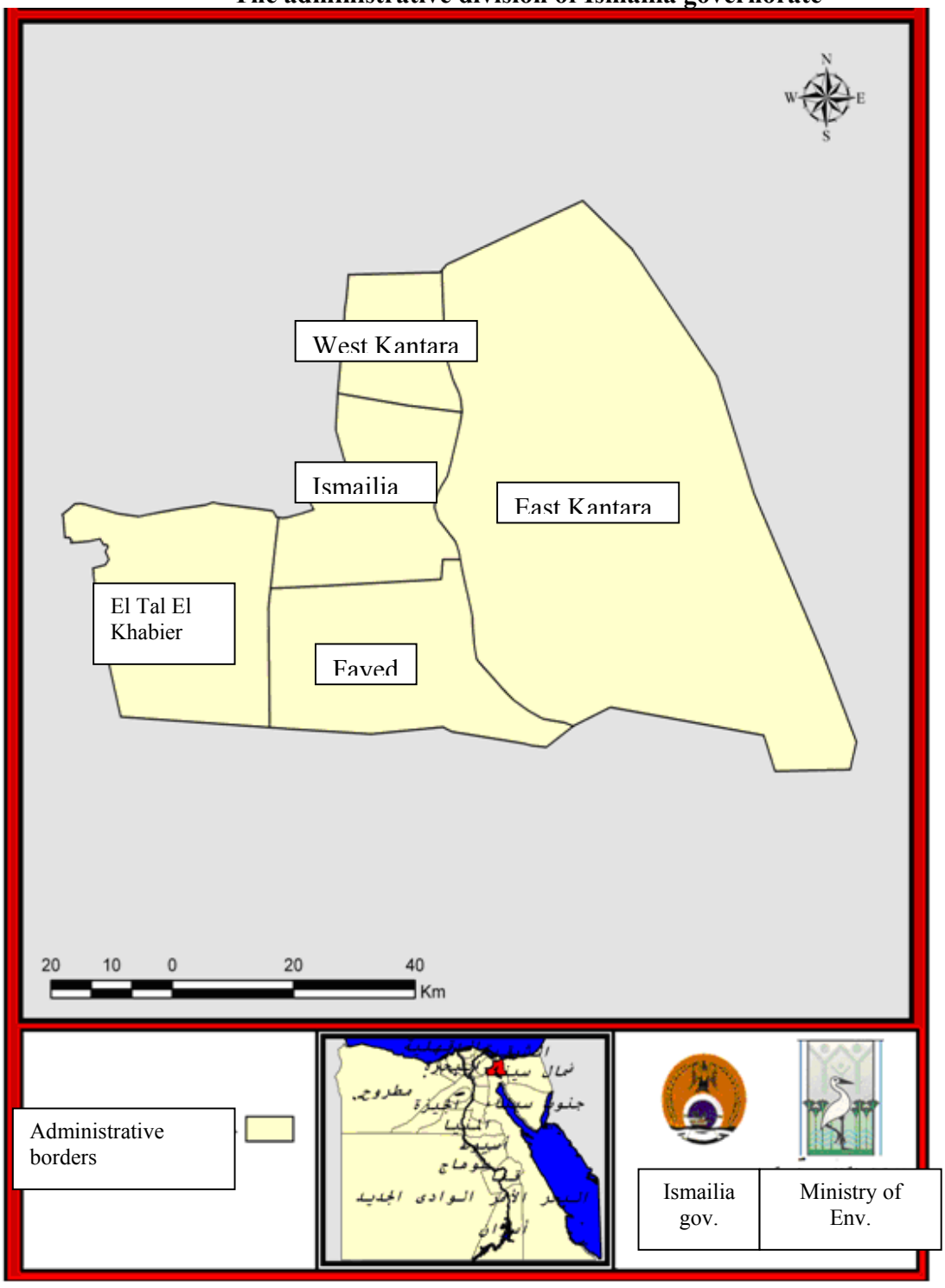
The fisheries play a very important part in the economy of the governorate. Fishers are in Suez Canal, bitter and Temsah lakes.

Industry

There are seven industrial areas in Ismailia. It includes the first, second, free zone in Ismailia, the industrial area in Qantara East, Abu Khlifa and Technology valley. The industrial area is in Qantara West (under construction). These industrial areas have increased the rate of investment all over the Governorate. The most important industries in Ismailia are food, electronics, metal, engineering, textile, ready-made cloths and cement bricks.

Map of the Administrative division of Ismailia Governorate - Page 12

The administrative division of Ismailia governorate



1- The environmental action plan is in the frame of strategic work.

1-1 The introduction and identification of the environmental work plan

This is the description of the environmental action plan of the governorate. It includes the main works and Projects which improve the environmental circumstance to the people of Ismailia. The strategic elements have been set the Priorities.

The plan aims at protecting the environment and solving the negative impacts which may happen as a result of current and future activities of development. This plan aims at merging the social, economic and environmental dimensions to achieve the sustainable development.

The plan has many solutions that match with the five-year plan (2007-2012) for the socio-economic plan. It will try to provide sanitation system to all urban markazes. The plan also contains the priorities of the national environmental action plan NEAP of 1992 such as the solid waste, land use and water resources. Moreover, the plan participates in Egypt's international protocols' commitments according to Rio Development's goals in the 21th Century Agenda. During the preparation of the environmental action plan, the Environmental profile has been published which includes the environmental prior issues.

2-1 The environmental action plan aims at supporting the structure and system of the environmental unit through practical methodology with integrated vision to the environmental issues. How we can mange them, how we can implement projects and how we can help the governorate to deal with the most important issues.

- The equal saving, active management to the environmental main issues:

(Solid waste- Potable water- sanitation)

Planning the natural resources of the governorate- management cultural heritage in sustainable way (Land- Water- Air –cultural heritage)

- The reduction and control of the pollution which affects on the natural resources
- This system helps in the measurements of follow-up and evaluation. It helps also in participation of the environmental action plan. It has many economic, social and benefits that develop the natural resources.

1-3 How did we prepare the action plan?

The EMU formed five working groups to cover all the important environmental issues according to the environmental profile of the government.

- Working group of the Water Resources and Coasts.
- Working group of the Industrial Abatement and Hazardous Waste.
- Working group of the Solid and Health care Waste.
- Working group of the Sanitation and Potable Water.
- Working group of the Environmental Awareness and Capacity Building.

A coordinator was selected by the EMU to each working group. The working group consists of civil servants, private sector employees, and non–governmental volunteers. Annex no. (1) Shows

the forms of the working groups which participated in the plan and workshops as part of the Environmental action plan.

2- The environmental issues and priorities in the environmental profile

The following table shows the environmental priorities in Ismailia governorate according to the environmental profile.

S. No.	Priority	Related issues
1	Sanitation	Sanitation network is not available in most of the villages– the pumps and sanitation ill-prepared trucks- pouring polluted water in the streets, roads and lanes- the contamination of the ground water.
2	Solid waste Management	No system for the solid waste in most of the villages- insufficient number of trucks, containers and manpower. Most of the solid waste was disposed by burning in the open air. The insects and diseases increase due to lack of environmental awareness
3/4	Water supply and water quality	The low pressure of water- the poor maintenance of the pipelines – contaminated ground water- leakage of waste water to the potable water pipelines
5	Water resources and coast management	The different resources of contaminated water resources includes canals, drains of Mahasmah ,Malaria , Bitter lake , Temsah lake
6	Environmental awareness weakness	Weakness of the environmental awareness of the civil servants, citizens, poor coordination among different responsible governmental agencies.
7	Industrial Abatement and industrial waste	The poor implementations of laws-spread of lung diseases and other related diseases
8	Covering and fill drains and canals	Disposal of waste in drains and canals- spread of diseases related to pollution

3- The future vision in 2012

The goal of the environmental action plan is to improve the quality of environment of the people of Ismailia. The plan deals with all the main problems which face the people and affect their performance. It may be seen as a contradictory issue in the short range. Therefore the main goals of the enviroemntal action plan are to achieve a balance between population and environment in order to have the real protection of environment. The plan aims at utilizing the natural resources in way to keep them in proper condition to the forthcoming generations.

In order to achieve this goal the environment action plan has taken much care of the rights of the people to insure their livings. They need suitable education, good jobs, clean water, hygienic services, well-made sanitation, solid waste management system, electricity and power supply, protection of environment, water resources besides the environmental awareness.

4. The environmental priorities

4-1 The solid and medical hazardous waste

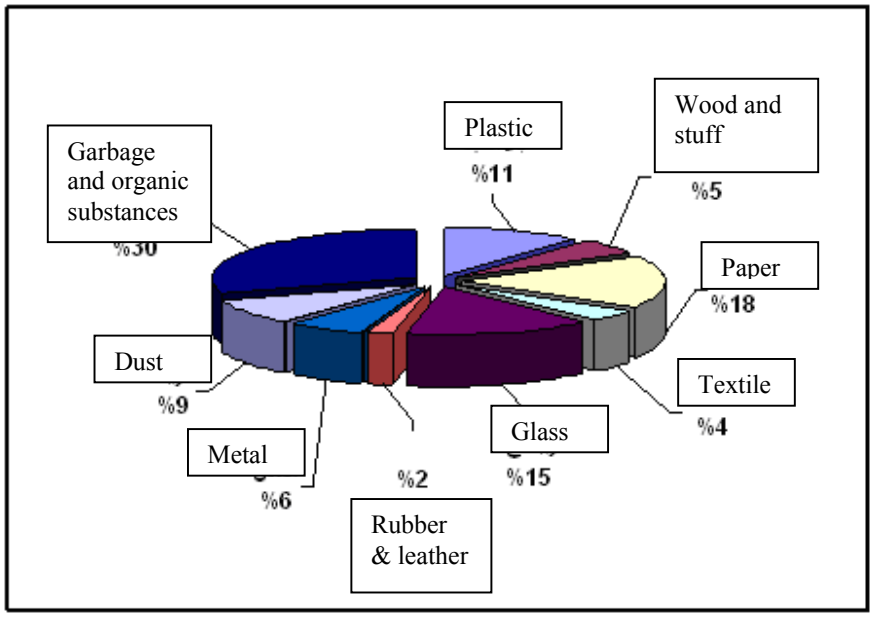
4-1-1 Solid Waste

4-1-1-1 General back ground

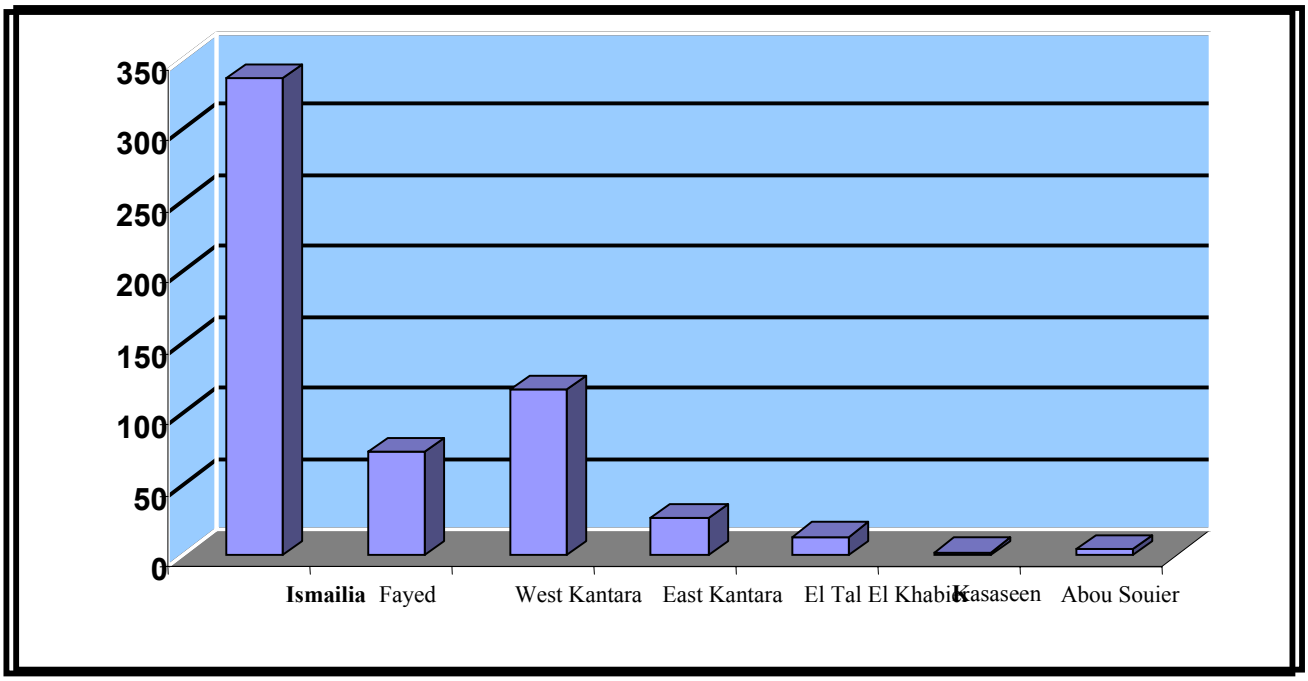
The solid waste management system in Ismailia depends on the local units. There are neither private companies nor NOGs to carry out the collection, transportation, assertions of the solid waste. The Local Units collect the solid waste in the containers with the manual tools and tractors. The transportation of the solid waste goes through the spill trucks and trailers .The final disposal is in the public land fill of the city of Ismailia. In the villages and markazes there are open dump sites to recycle the solid waste as compost. There are two recycling factories near the public land fill. The maximum capacity of the recycling is 160 ton per day. The economic value of these factories decrease day by day since the solid waste has a very poor material to be recycled. It is known that assorting collectors the useful recycling materials before the solid waste carry to the dump site.

Although there are great efforts in such a matter by the governorate since the increase of population activities lead to increase in the solid waste. The capacity of generalization of the solid waste per day is about 572 tons. The first chart shows the components of the solid waste by percentage of the city of Ismailia. The second chart shows the solid waste generated daily in both the cities and markazes.

Page 18- Chart no. (1) The components of Solid waste in Ismailia city



Page 18- Chart no. (2) The solid waste generated daily in the cities and markazes of Ismailia



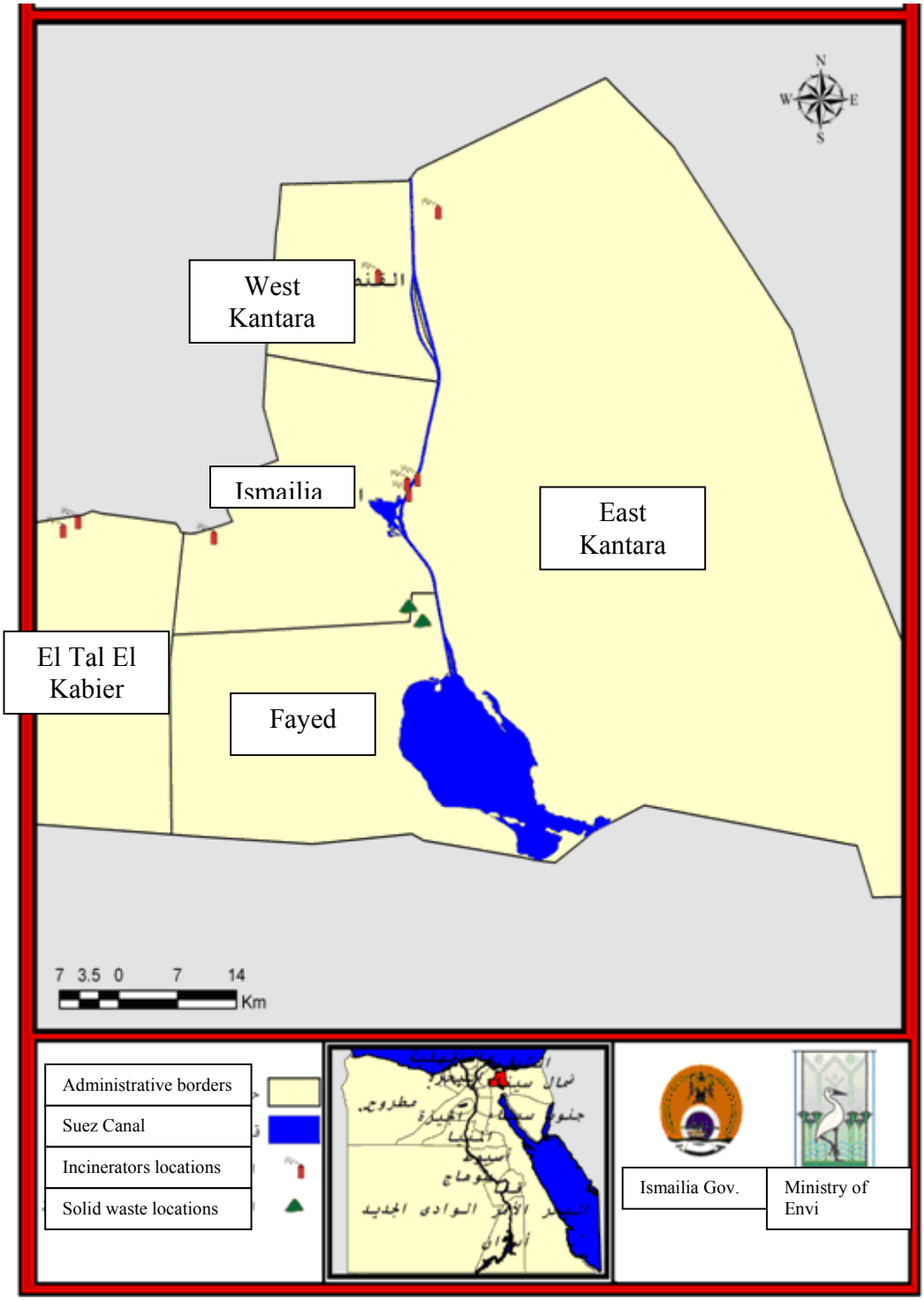
There is no recycling of agricultural waste factory in Ismailia. At the same time, there is a shredder at the old factory of compost. It is used for shredding the trees waste after being mixed with the waste water for making compost. Some of the NGOs have done recycling small projects. There is an environmental coal oven with capacity 20 tones of wood.

Some of the problems of the solid waste management in the Governorate are the following:

- The shortage of Technical and institutional Integrated Solid Waste Management System.
- Shortage of the companies experiences of the solid waste management.
- Un-participation of NGOs and local community in the solid waste management
- The availability of the land fills in markazes and cities.
- Assorting collectors who pick up recycling materials before moving to land fills.
- No clear policy for re-industrialization
- The shortage of fund to complete the requirement of the solid waste management.
- Shortage of manpower.
- Availability of equipped trucks in both of markazes and cities.

The document has all the achievements during the last five years in the solid waste management. It has also the current situation and the problems with its causes and effects. It has also all the proposals, the priorities of forthcoming vision and estimated cost from the donors.

Page 20 Map of the hazardous and solid waste land fills in Ismailia



4-1-1-2 The achievements in the last five years

4-1-1-2-1 The decisions and measurements

Appling the law 10 /2005 with its modification of law 38/1967 concerns the general cleaning under the decree of his Excellency the governor of Ismailia.370/ 2005. The collection fees have to be decided according to the criteria. The houses and commercial shops have two different categories according to this law.

4-1-1-2-2 Technical and Administrative support

The land fill of Ismailia has been removed since 2002. It laid on Ismailia-Suez Road. It is 3 km sq deep from the main road. This will keep the land fill away from the traffic. It has been prepared by paving the lines in the land fill with small stones. The capacity of the land fill is about 90,000 tones per year.

The local unit of Qantara West has allocated 10 Faddens for a new land fill. It has also cooperated with the Roads Authority to clean Ismailia- Port Said Agricultural Road.

The land fill of Tal El-Kebeer has been selected away from the dwelling area to have a clean area around the city.

4-1-1-2-3 The projects and programs under construction

Some of the projects have been on process with the NGOs.

4-1-1-3 The current situation: Causes and effects of the problems

Current situation	**Problems**	**Causes**	**Planning**
No integrated solid waste management system in Ismailia Govern ate	-Non use of the solid waste due to assorting collectors picking up. -Low capacity of the districts and local units for removing solid waste which have led to accumulation of solid waste –Increase of insects and rodents -Lack of Equipment –Lack of manpower- -Lack of fund -Lack of land fills for solid waste in cities and markazes. - Negative impacts on the health of citizens	-Insufficient studies –Lack of required experiences in the field of solid waste-no funds – No plan for solid waste	No plan for the solid waste management system in Ismailia Governorate

4-1-1-4 The vision and the goals

The vision of the governorate is to collect, transport, dispose, of all types of waste generated from the entire of Ismailia as follows:

- Have a panoramic vision of the current situation of solid waste and have an integrated system to manage all the required needs.
- Recycling great volume of organic and non organic waste to safe way.
- Increase the environmental awareness in the entire governorate.

4-1-1-5 The goals and required works

The goal	The main goal in the next five years	Decisions, measurements and institutional support
The new vision of the current situation of the Solid Waste Management system	Prepare an action plan to the system of solid waste on the entire governorate	Preparing a plan for all cities- towns- villages
Integrated system on the level of the entire governorate	All cities and markazes Participation of the private sector in the solid waste management	Implementing the plan and evaluating it
	The role of each governmental agency in dealing with the problem	
Recycling of the great volume of solid waste and non organic in safe way	Action plan for recycling the solid waste in entire governorate Safe Disposal of all un-recycled materials	Availability of land fills and recycling factories
Increase the environmental awareness in the entire governorate.	Preparing an environmental awareness program by having workshops training courses for all types of Society Providing the Solid waste management with all required equipment	Implementing environmental awareness Activate the Ismailia EMU

4-1-1-6 A list of all the sub projects in the five –year plan

4-1-1-6-1 High priority projects

The sub-project	The agency in charge	The proposed implementing agency	Estimated Budget in LE	Period of the project	Financial support
ISWM in Ismailia city and Markaz	Ismilia city council	Ismilia city council + Private Sector + NGOs	14 millions	3 years	Foreign donors- Social Fund- Private Sector
ISWM in Tel Kabeer city and Markaz	Tel Kabeer city council	Local unit + Private Sector + NGOs	5 millions	3 years	Foreign donors- Social Fund- Private Sector
ISWM in Kassassen old city	Kassassen city council	Local unit + Private Sector + NGOs	3 millions	2 years	Foreign donors- Social Fund- Private Sector

ISWM in Qantara West city and Markaz	Qantara West city council	Local unit + Private Sector + NGOs	3,5 millions	3 years	Foreign donors- Social Fund- Private Sector
ISWM in Kassasseen New city	Kassassen city council	Local unit + Private Sector + NGOs	5 millions	3 years	Foreign donors- Social Fund- Private Sector
ISWM in Abu Sweer city	Abu Sweer city council	Local unit + Private Sector + NGOs	5 millions	3 years	Foreign donors- Social Fund- Private Sector

4-1-1-6-3 Medium priority projects

The sub-project	The agency in charge	The proposed implementing agency	Estimated Budget in LE	Period of the project	Financial support
Green area in the Third District of Ismialia city	Third district	NGOs	2 millions	1 years	Foreign donors

4-1-1-7 Profile of some projects and program priorities

Some of the private projects need to improve the solid waste management in cities and markazes in the entire governorate (Ismailia – Tal Kebeer-Old Kassasseen- Qantara West- New Kassasseen- Abu Aweer). In addition to the governorate needs the institutional support to have sustainability of the projects.

The profile of the problem

- The insufficient of the solid waste in the recycling factories.
- Inability of the local councils to remove all the solid waste due to the accumulation of waste
- Increase of insects and rodents
- Lack of equipment – lack of manpower
- Lack of management to deal with the solid waste.

Description of the project

- Availability of equipment suits with quantity and quality in different cities
- Establishment of recycling factories and availability of land fills.
- Increase the environmental awareness and activate the success of the project.
- Capacity building of the manpower in city councils to form an integrated Solid waste system for new institutions

Implementing Agencies

- Local Units
- Private companies

- Non governmental organizations
- Foreign donors
- Social Fund

Project estimated cost

- Estimated cost of all the six sub projects are 50 millions Egyptian Pounds

Project of green areas in the third district in Ismialia

Description of the problem

- Big places inside the dwelling areas in cities full of solid waste
- The increase of insects and rodents
- Negative impacts on the health of citizens
- Transfer of these areas to public green parks.

Elements of the problem

- Have data about the public properties in the dwelling areas
- **8** locations have been selected and have the layout of every site.
- Participate of the governorate to prove water pipeline to the area.
- Activate the civil society to have a share in these works.

Implementing Agency

- Third district of Ismailia city
- Foreign donors

Estimated cost of the project

- About 2 million Egyptian pounds

4-1-2- Hazardous waste

4-1-2-1 General background

One of the main challenges of the health sector in Ismilia is the hazardous waste. The volume of hazardous waste generated from hospitals, markazes, and health care centers in the entire governorate is about 1200 kg per day besides the hazardous waste of the private hospitals and clinics. There is very small number of incinerators in Ismailia. There is no institutional system in dealing with the hazardous waste. The data concerns the incinerators in the entire governorate and capacity and location of every incinerator.

Table no. (1) Incinerators in the entire governorate

S. No.	Name of incinerator	Capacity	Work	Out of work	Efficiency
1	Hospital of Qantara East	50 kg /h	OK		Applied
2	Hospital of Qantara West	100 kg /h	OK		Applied
3	Hospital of Tal Kebeer	100 kg /h	OK		Applied
4	Hospital of Fever	100 kg /h	OK		Applied
5	Blood Bank	70 kg /h	------	**Out of work**	Non- applied
6	Ismialia Public Hospital	50 kg /h	------	**Out of work**	Non-applied
7	Joint Lab incinerator	50 kg /h	------	**Out of work**	Non-applied
8	Suez Canal Authority	100 kg /h	OK		Applied
9	Suez Canal University	100 kg /h	OK		Applied

- Some of the hospitals which have no incinerators collect the hazardous waste in the red plastic kits. Injections and sharp tools are put in controlled packs. The hazardous waste of the clinics, labs, private hospitals contracted with any pubic hospital has incinerators with unprepared trucks.
- There is no real disposal of the ashes of the healthcare waste.
- The inefficiency of incinerators to reduce harmful emissions.

4-1-2-2 Achievements during the last five years

4-1-2-6-1 Decisions and measurements

- Decision of the Directorate of Health and Population concerning the length of the stack of the hospital incinerator
- Establishing of Infection Unit in the public hospitals.

4-1-2-6-2 Technical and administrative support

The work and maintenance of the incinerators which belong to the directorate of Health and Population as mentioned above with the exception of number 8 and 9. The direct supervision is of Suez Canal authority and Suez Canal University.

4-1-2-6-3 Projects under construction

- Prepare health care trucks in different collection sites of incinerators.
- Allocation of an area to transport the hazardous waste with Ismailia city and markaz.

4-1-2-3 The current situation Causes and effects

Current situation	Passive impacts on the current situation	Causes of the problem	Current plans
Unavailability of IHCWMS	1-The random disposal of Hazardous waste in clinics and health care centers 2-Availability of incinerators in some cities and others are not. 3- Unavailability of hazardous waste transportation 4- Hazardous waste management system is not integrated 5- Unavailability of hazardous waste land fills.	-Hazardous waste management system is not integrated - Limited financial supply. - Unavailability of hazardous Waste transpiration - Unavailability of hazardous waste land fills.	There is no current plan or project to improve the hazardous waste management system in Ismailia Governorate

4-1-2-4 vision and goals

The vision of the governorate is to disposal of the hazardous waste in a safe way. This can be done through the following:

- Establish a separate unit of Health care waste management system in the Directorate of health and Population.
- Assorted the hazardous waste from sources.
- Transport the incinerators to far location from the dwelling area and to be managed by the directorate of Health and Population.
- Availability of well- prepared trucks to remove the hazardous waste to the cells of the land fill.
- Training of the workers and raise their capacity building and protect them by having special tools and needs.

4-1-2-5 the goals and required works

The main goal	The goals in the next five years	Decisions and measurements and intentional support
Implementing integrated health care management system (assorting-collection- burning transportation-land fills)	**1-** Establish a separate unit of hazardous waste within Directorate of Health and Population **2-** Prepare an action plan for all the steps of the hazardous waste measurements. **3-** Removing the incinerators far from dwelling areas. **4-** Evaluation of the ability of private sector participation **5-** New criteria to have the well –equipped trucks	Preparing the project to be submitted to the donors Preparing a plan for the health care waste
Preparing a plan for raising the environmental awareness with different devices of media	**1-** Increase the workshops and training courses. **2-** Use the different sorts of media. **3-** Raise the environmental awareness of the workers.	Training of the workers in the field of the health care waste management. Providing them with protected tools

4-1-2-6 List of Sub- projects

4-1-2-6-1 list of the high priority projects

The sub-project	The agency in charge	The proposed implementing agency	Estimated Budget in LE	Period of the project	Financial support
Integrated Health Care waste management system in entire of Ismailia Governorate	Directorate of Health and Population	Directorate of Health and Population	7,5 millions	1 years	Foreign donors

4-1-2-7 Description of the prior projects

The Integrated Health Care Waste Management System in Ismailia Governorate

Description of the problem

- Unavailability of safe transportation of hazardous waste.
- Negative impacts on citizens
- Some incinerators are very near to dwelling areas.
- Unavailability of hazardous waste land fills.
- There is no hazardous waste management unit in the Directorate of Health and Population

Description of the Projects and its elements

- Provide the DoH with seven well-prepared trucks.
- Remove all the incinerators in the dwelling areas to center of incinerators far from the dwelling areas.
- Establish land fill with many cells.
- Train of the staff to increase their environmental awareness and how to deal with the hazardous waste.
- Collect fees for having this service according to the financial regulations of the directorate of health and population**.**

Implantation Agency

- Directorate of Health and Population
- Foreign donors

Estimated cost of the project

- Around 7,5 million Egyptian pounds

Proposal of Funding Agencies

- Private sector
- Egyptian Environmental Affair Agency.
- Directorate of Health and Population

2-4 the potable water and sanitation

4-2-1 Potable water

4-2-1-1 General Back ground

The main resource of water in Ismailia is Ismailia Canal. This canal has two sub-canals. One is going to the south for Suez and the other is going to the north for Port Said. There are 45 drinking water plants in Ismailia. The total capacity of these plants is 650,000 m^3 /per day. They serve about one million of population. The waste of potable water is about 10-15%. The actual capacity for total population is 500, 000 m^3/per day, while the per capita is 220 liter per day. The total length of the water pipeline network is 2000 km without Ismailia city which is afflicted to Suez Canal Authority. The total household consumption is 80 %, while the governmental agencies are 5% and investment sector is 15%. Although the water is available in entire governorate, but the none-applied Bacteriological samples are about 2.8 %. The none-applied chemical samples are about 10%. The outcome of the sediment and clearing of canals is less than usual. This is according to the data of the Directorate of Health and Population.

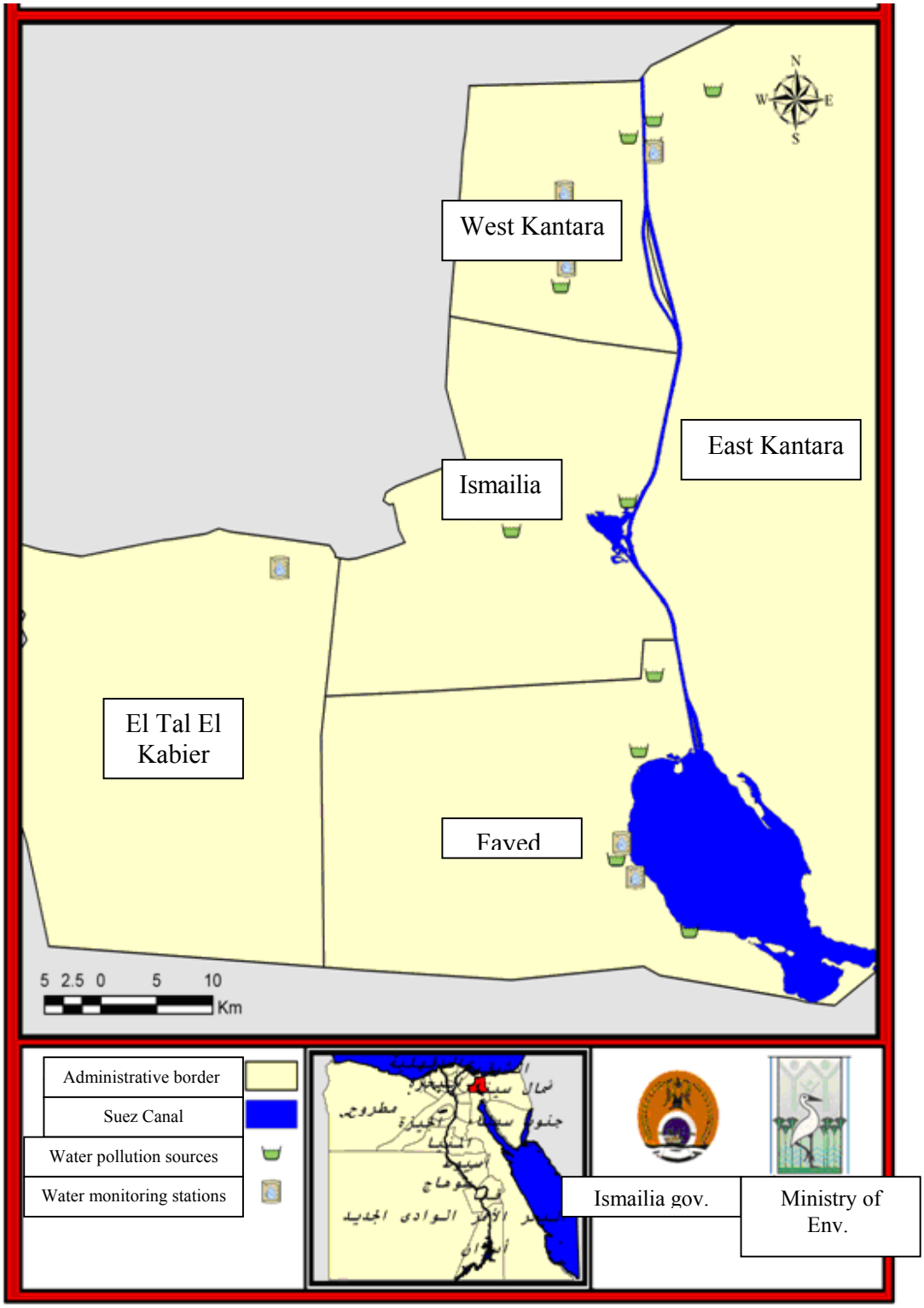
Although there is many achievements in the potable water sector for connecting houses in cities, towns and villages but there are some negative points that represent the bad consumptions of citizens in using drinking water. Some of the farmers use the drinking water in irrigation of agricultural land green areas and parks.

Table (2) None-served areas of potable water in Ismailia

S. No	Name of Markaz, city and village	Problem	Remarks
1	City and Markaz of Ismailia Satellites of Fanarah village + Sabaa Abar+ Kilo 11 + Dhabiah+ Ain Ghaseen	Shortage of potable water	In Five- year plan
2	City and Markaz of Tal Kebeer, Malak area	Shortage of potable water	In Five- year plan
3	City and Markaz of Qantara West – rayah village and its satellites + Bayadia+ Abu Khalifa+ Nasr village	Shortage of potable water	In Five- year plan
4	City and Markaz of Fayed Fanarah village+ Serabuim+ Satallites of Fayed city	Shortage of potable water	In Five-year plan
5	City and Markaz of Qantara East- all villages of the markaz	Shortage of potable water	In Five-year plan

The document has all the remarkable achievements, the current situation, the problems, causes and effects. It has all the current and future plans.

Page (35) the hot polluted points of water and waste water treatment units in enter Ismailia governorate.



4-2-1-2 Achievements in the last five years

4-2-1-2-1 Decisions and measurements

The decree of the Minister of Health and Population no. 358/ 2007 concerns the modifications of criteria and specifications of potable water.

4-2-1-2-2 Technical and Administrative support

- Training courses to the staff of potable water utility.
- Available spare parts of potable water plants
- Renewal and replacement of equipment in the potable water plants.

4-2-1-2-3 Implemented projects and programs

S. No.	**City and Markaz of Ismailia**	**City and Markaz of Tal Kebeer**	**City and Markaz of Fayed**	**City and Markaz of Qantara West**	**City and Markaz of Qantara East**
1	Extension of Potable water Plant of Ismialia City- Capacity from 210,000 / day to 310,000 /	Extension of Potable water Plant of Tal Kebeer City- Capacity from 400/ second to 800 /second	Extension of Potable water Plant of Fayed City- Capacity from 600/ second to 1400 /second	----------	----------
2	Compact Potable water in Ain Ghaseen and K11 villages	Building Compact Potable water in Malak Zone	Building Three Compact Potable water in Serabuim Zone	----------	----------
3	Renewal and replacement of all Compact plants	Renewal and replacement of all Compact plants	Renewal and replacement of all Compact plants	Renewal and replacement of all Compact plants	Renewal and replacement of all Compact plants
4	Renewal and replacement of all Compact networks	Renewal and replacement of all Compact networks	Renewal and replacement of all Compact networks	Renewal and replacement of all Compact networks	Renewal and replacement of all Compact networks

4-2-1-2-4 Projects and Programs under construction

S. No.	Name of City or Markaz or Village	Capacity by thousand m3/day	Cost by Millions	Remarks
1	**City & Markaz of Ismilia** completion of Potable water network in Future city	----------	10	Water resource :Ismailia Canal-water plant of Suez Canal Authority
2	Implement 4 compact water plants (Manifa- 2Sabaa Abar- K11)	8	12	Water resource: Manifa canal-Port said Canal
3	Implement water network in Ain Ghasseen and Serabuim and satellites	8,5	37	Water resource: Manifa canal
4	Implement potable water plant network in Abu Sweer	17	50	Water resource :Ismailia Canal
1	**City and Markaz of Tal Kebeer –** Potable water pipeline to Malak valley	---------	3	Water resource Ismailia Canal-and Tal Kebeer plant
1	**City and Markaz of Fayed** -supporting potable water network in Fayed city, markaz and 108 villages	----------	45	Water resource: Suez sub-Canal-fayed plant and Ain Ghasseen village
1	**City and Markaz of Qantara West** Extension of potable water plant and network in entire markaz from 400 L to 800 L	34 to 68	50	Water resource: Port said sub-Canal
2	**4 Compact water plans in (**Abu Tafyah- El-Rayah- K17 –K14)	8	10	Water resource: Port said sub-Canal- Hassnya Canal and Abu Tafyia village
3	Potable water network in abu khlaifa and Bayadia villages with length 100 mm to 800 mm	----------	45	Water resource: Port said sub-Canal- Hassnya Canal and Abu Tafyia village

4-2-1-3 The current situation of the causes and effects

Current situation	Most important problems and its passive effects	Most important causes of problems	Plans and current programs
- Shortage of potable water in the cities and villages in Ismailia - Increase more than expected of consumption of	- Shortage of potable water in the cities has a very passive effect on the citizens health - Inefficiency of	- Shortage of fund -Bad status of plants - Increase of consumption	- Some of the cities & villages are under construction as per our achievements table. -Qantara West Plant will increase from 34 to 68

potable water - no water network & compact plants due to increase of population - using potable water in irrigating green areas	water plants -shortage of water has bad effect on health -Misuse of water consumption	and no alter natives -No maintenance -No renewal and replacement policy -Low environmental awareness	thousand m3 / day - 9 compact water plants will be implemented -Abu sweer plant and Ain Ghesseen plant will increase their capacity -All plants and networks will be renewal and replaced with new plans -The misuse of consumption will be treated by fines and cut off the water connections.

4-2-1-4 the vision and goals

The improvement of the potable water aims at the availability of pure water to all people and to develop the way of consumption .This will be done by the following:

- The water service has to be in entire cities and villages of the governorate.
- Develop the potable water plants to deal with the present and future consumption.
- Increase the environmental awareness by ordination of potable water.
- Renewal and replacement of the old plants and networks.

4-2-1-5 The goals and the required works

The Main goal	Required in the next 5 years	Decisions & measurements
Services of cities and villages in the required areas	Implementing the renewal and replacement of the water plants	- Prepare designs to project to be presented to donors. - Prepare a plan for the required service areas. -Prepare the water networks in Qantara West- Fayed- Tal Kebeer and all their satellites
Development of the treatment plants	Extension of the present plants to deal with future requirements	- Prepare the Qantara West plant - Prepare the 9 water compact plants - Prepare the two plants of Serbuim and Ain Ghasseen
Environmental awareness	Decease the misuse of the water consumption	- Have fines for breaking laws - Increase the environmental awareness -Using the media for purposes of Water ordination
Renewal and replacement	Replacement of 50 % of plants and 50 % of networks	- Implementing the replacement plans and networks annually.

4-2-1-6 List of the sub- projects in the five- year plan

4-2-1-6-1 The high property projects

Name of City and Markaz	Sub-Project	Agency in charge	Implementation Agency	Estimated Budget	Time framework	Funding agency
Ismailia	Renewal and replacement pipelines under roads , railways and water canals	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**3 millions**	**2-3 years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Complete the potable water connections in needed areas in City and Markaz of Ismailia	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**15 millions**	**2-3 years**	
	Renewal and replacement of compact water plants in villages and replacement of the catchments	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**15 millions**	**2-3 years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
City and Markaz of Tal Kebeer	Renewal and replacement pipelines under roads , railways and water canals	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**3 millions**	**2-3 years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate

						Fund
	Complete the potable water connections in needed areas in City and Markaz of Tal Kebeer and Qantara East	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**10 millions**	**2-3 years**	**-** Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Renewal and replacement of compact water plants in villages and replacement of the catchments	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**5 millions**	**2-3 years**	**-** Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
City and Markaz of Fayed	Renewal and replacement pipelines under roads , railways and water canals	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**3 millions**	**2-3 years**	**-** Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Complete the potable water connections in needed areas in City and Markaz of Fayed from 100 mm to 400 mm with length of 75 km	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**10 millions**	**2-3 years**	**-** Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

	Renewal and replacement of compact water plants in villages and replacement of the catchments	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**5 millions**	**2-3 years**	Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
City and Markaz of Qantara West	Renewal and replacement pipelines under roads , railways and water canals	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**3 millions**	**2-3 years**	Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Complete the potable water connections in needed areas in City and Markaz of Qantara West from 100 mm to 400 mm with length of 75 km	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**10 millions**	**2-3 years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Renewal and replacement of compact water plants in villages and replacement of the catchments in Qantara west & Abu Khalifa village	National authority for potable water and sanitation	National authority for potable water and sanitation -Directorate of housing in the governorate	**15 millions**	**2-3 years**	Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
City and Markaz of Qanatra East	Renewal and replacement pipelines under roads , railways and water canals	North Sinai Reconstruction Agency	-Directorate of housing in the governorate - North Sinai Reconstruction Agency	**2,5 millions**	**2-3 years**	Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

	Complete the potable water connections in needed areas in City and Markaz of Fayed from 100 mm to 400 mm with length of 100 km	North Sinai Reconstruction Agency	-Directorate of housing in the governorate - North Sinai Reconstruction Agency	**10 millions**	**2-3 years**	Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Renewal and replacement of compact water plants in villages and replacement of the catchments in Qantara west & Abu Khalifa village	North Sinai Reconstruction Agency	Directorate of housing in the governorate - North Sinai Reconstruction Agency	**15 millions**	**2-3 years**	Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

4-2-1-6-2 Medium priority projects

Name of City and Markaz	**Sub-Project**	**Agency in charge**	**Implementation Agency**	**Budget**	**Time framework**	**Funding agency**
Ismailia	Renewal and replacement Plastic pipelines of 100 mm to 300mm in all villages	National authority for potable water and sanitation -Directorate of housing in the governorate	National authority for potable water and sanitation -Directorate of housing in the governorate	**25 m**	**2-3 years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
Tal Kebeer	Complete the potable water connections in needed areas from 100 mm to 300 mm in length of 200 km in entire villages in City and Markaz of Tal Kebeer	-National authority for potable water and sanitation -Directorate of housing in the governorate	-National authority for potable water and sanitation -Directorate of housing in the governorate	**25 m**	**2-3 years**	

Markaz and city of Fayed	Renewal and replacement of pipelines of 100mm to 300 mm in all villages with 250 km	National authority for potable water and sanitation - Directorate of housing in the governorate	National authority for potable water and sanitation -Directorate of housing in the governorate	**30 m**	**2-3 years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
City and Markaz of Qantara West	Renewal and replacement of pipelines of 100mm to 300 mm in all villages with 125 km length	National authority for potable water and sanitation - Directorate of housing in the governorate	National authority for potable water and sanitation -Directorate of housing in the governorate	**3 m**	**2-3 years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
City and Markaz of Qantara East	Renewal and replacement of pipelines of 100mm to 300 mm in all villages with 100 km length	National authority for potable water and sanitation - Directorate of housing in the governorate	National authority for potable water and sanitation -Directorate of housing in the governorate	**10 m**	**2-3 years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

4-2-1-7 Profile of some projects and programs

The project of the potable water to the needed villages of Ain Ghasseen and Serabuim

Description of the problem
-There is no potable water in 10 satellites of the village of Ain Ghasseen and 10 satellites of Serabuim.

Description of the Project and its elements
-Networks of 100mm up to 500 mm with length of 62 km
-Water plant with 100/200 liter per second
-15 under line of length of 100mm to 500 mm under the roads, railways and canals

The required works
-Slop networks and pumping stations to be used for the treated water in agriculture, wood forest in the desert areas on the high roads of (Ismailia- Suez- Ismailia- Cairo)

Implementation agencies
-National Authority of Potable Water and Sanitation
-North Sinai Reconstruction Agency
-Directorate of Housing and Utilities in the governorate

Funding agencies
-Self funding and state funds
-Grants and loans
-Fund of the national Authority of potable water and sanitation
in the future five- year plans
-Governorate Fund

Estimated cost of the project
-Around 37 million Egyptian pounds

Description of the renewal and replacement by plastic pipelines
-From 100 mm to 300 mm with length of 200 km in all the villages and markzes

Description of the problem
The old pipelines lead to poor volume of potable water and low quality

Description of the project and its elements
Installation of pipelines networks and valves
-City and markaz of Ismailia
-City and markaz of Tal Kebeer
-City and markaz of Fayed
-City and markaz of Qantara West
-City and Marrkaz of Qantara East

Implementation agencies
-National Authority of Potable Water and Sanitation
-North Sinai Reconstruction Agency
-Directorate of housing and Unities in the governorate

Funding agencies
-Self funding and state funds
-Grants and loans
-Fund of the national Authority of potable water and sanitation in the future five- year plans
-Governorate Fund

Estimated cost of the project
-Around 105 million Egyptian pounds

Description of the renewal and replacement by plastic pipelines
-From 100 mm to 300 mm with length of 300 km sq. in all the villages and markzes

Description of the problem
-The old pipelines lead to poor volume of potable water and low quality

Description of the project and its elements

Installation of pipelines networks and valves
-City and markaz of Ismailia
-City and markaz of Tal Kebeer
-City and markaz of Fayed
-City and markaz of Qantara West
-City and Marrkaz of Qantara East

Implementation agencies
-National Authority of Potable Water and Sanitation
-North Sinai Reconstruction Agency
-Directorate of Housing and Unities in the governorate

Funding agencies
-Self funding and state funds
-Grants and loans
-Fund of the national Authority of potable water and sanitation
in the future five- year plans
-Governorate Fund

Estimated cost of the project
-11,5 million Egyptian pounds

Description of the problem
Having potable water connections to the needed areas with 100mm to 400 mm with length of 125 in all the villages and markazes of the governorate

No potable water network in the villages

Description of the project and its elements
Installation of pipelines networks and valves
-City and markaz of Ismailia
-City and markaz of Tal Kebeer
-City and markaz of Fayed
-City and markaz of Qantara West
-City and Marrkaz of Qantara East

Implementation agencies
-National Authority of Potable Water and Sanitation
-North Sinai Reconstruction Agency
-Directorate of Housing and Unities in the governorate

Funding agencies
-Self funding and state funds
-Grants and loans
-Fund of the national Authority of potable water and sanitation
in the future five- year plans

-Governorate Fund

Estimated cost of the project
-55 million Egyptian pounds

Description of the renewal and replacement of catchments and iron tanks in all the -----Villages and markzes

Description of the problem
-The old parts of the compact potable water plants and low quality

Description of the project and its elements
Installation of pipelines networks and valves
-City and markaz of Ismailia
-City and markaz of Tal Kebeer
-City and markaz of Fayed
-City and markaz of Qantara West
-City and Marrkaz of Qantara East

Implementation agencies
-National Authority of Potable Water and Sanitation
-North Sinai Reconstruction Agency
-Directorate of Housing and Unities in the governorate

Funding agencies
-Self funding and state funds
-Grants and loans
-Fund of the national Authority of potable water and sanitation
in the future five- year plans
-Governorate Fund

Estimated cost of the project
-Around 25 million Egyptian pounds

4-2-2 Sanitation

4-2-2-1 General back ground

The problem of sanitation is one of the most important problems in Ismailia. Although the service of sanitation has been implemented in most of the markazes but there are still some villages and markazes have not got this service. The sanitation projects will help to have a good environment and will stop the surface water pollution. Moreover, the health of the citizens will be improved. The waste water treatment in the entire governorate is 109,750 m^3 / day. There are secondary waste water treatment plants in Ismailia city, Tal El-Kebeer, Qantra West.

There is no waste water treatment service for the rest of towns and markazes. Waste water is in tanks to be eliminated by trucks. There are some citizens who participate in conciliating the water by pouring untreated water in the canals

Table (3) the areas which have sanitation and the treatment units

S. No.	Name of City , Markaz and Village	Quantity of daily sanitation	Treatment plant	Capacity of the plant	Name of the plant
1	City and Markaz of Ismailia Ismailia city- Future city- Nafesha village Abu Atwa village Bahteni village Halows village	110,000	Ismailia city 14 k in the Ismailia-Suez Desert road	90,000 m³/ day	Mahasma drain
2	**City and Markaz of Tel Kebeer** Tal Kebeer city- Mazarea village- Hassan Effendi Village- Tal Sagheer village- Abu Khaifa village- Azebt ElArab village	10,000	Tal Kebeer city	10,000 m³ /day	Wady drain
3	**City and Markaz of** Qanatara West – Qanatara West city	10,000	Qanatara West city	10,000 m³/day	Drain no 1 on north ofIsmailia
4	**Abu Khalifa village**	10,000	Abu Khalifa village	10,000 m³ /day	Mahasma drain
5	**City and Markaz of** Qantara East – Qantara East city	1,200	Qantara East city	7,200 m³ /day	
			Progress village		

Table no. (4) Areas needed service of sanitation

S. No	Name of City , Markaz and Village	Problem	Remarks
1	City **and markaz of Ismailia** Villages of Ali Aid- K12- University land- Fedico- Adam and Nasr- Wassefia- Dhabaia- Ain Ghasseen- Manifa- Abu Asaker- Extension of 30 st. – Seyoura- Samakeen- Abu Rabei- Sobeih- Hamadat- Meriam	No service polluted Mahasmah Drain	Not in the five-year plan

	Mountain- Khasina		
2	**City and markaz of Tal Kebeer** Old mahamsmah- Oum Azam- Wabarat- Sherouk- Abu ALiean- Abu Seed	No service polluted Mahasmah and Wady Drains	Not in the five-year plan
3	**City and markaz of Qantara West** Banhouah- Rayyah- Baydeyah- K17	No service and polluted of north Ismailia drain	Not in the five-year plan
4	**City and markaz of Qantara East** All villages except Abtal village and progress village	No service	Not in the five-year plan
5	**City and markaz of Fayed** Salam, saidya ,Makhada, Hassiebah, Meniawiya, Saster,Kasfareet, Abu Romanah	**No service**	Not in the five-year plan

The document of the achievement has the current situation, problems and its causes and effects. It has also a list of projects of the five- year plan. It has also all the priorities of the projects

4-2-2-2 Achievements in the last five years

4-2-2-2-1 Decisions and measurements

Many decisions have been issued for implementing the integrated sanitation projects in many cities in the governorate to increase the capacity of the plants.

4-2-2-2-2 Technical and administrative support

Many workshops and training courses have been done for the staff of National Authority of Sanitation.

Trucks, tools and equipment for repairing the networks have been provided to be used in the cities and villages which have not sanitation networks.

Spare parts have been provided to increase the capacity of the networks and waste water treatment plants. The policy of renewal and replacements has been implemented gradually with much care of slops and lines of extension.

4-2-2-2-3 projects implemented during the last five years

S. No.	**Name of City & Markaz, of Ismailia**	**Name of City & Markaz, of Tal Kebeer**	**Name of City & Markaz, of Fayed**	**Name of City & Markaz, of**	**Name of City & Markaz, of Qantara**

				Qantara West	**East**
1	-Sanitation of Future city - Slops networks -Pumping plants -Drawing lines	Mazraa village Slops networks Pumping plants Drawing lines	Fayed city ---- Slops networks -Pumping plants -Drawing lines	Qantara West ----- Slops networks Pumping plants Drawing lines	Abtal Village ----- -Slops networks -Pumping plants -Drawing lines
2	-Nefashah village -Sanitation -Slop networks -Pumping station	Hassan Effindi Village -Slops networks -Pumping plants -Drawing lines	Coastal areas of Suez canal bank -Slops networks -Pumping plants -Drawing lines	Abu Khalifa village --- Slops networks Pumping plants Drawing lines	
3	Bahteeni and Abu Atwa villages - Slop networks -Pumping station -Drawing lines	Small Tal Kebeer & Abu Halifa village - -Slops networks -Pumping plants -Drawing lines			
4	-Halwas village -Slop nttwork - Pumping station Drawing lines	-Azbet Abu Arab village ---- -Slops networks -Pumping plants -Drawing lines			

4-2-2-2-4 Projects under construction in the five- year plan 2007-2012

S. No.	**Name of Markaz, city and village**	**Capacity of thousand m3 /day**	**Estimared cost by million LE**	**Remarks**
	City & Markaz of Ismailia			
1	Extension of waste water treatment plant and pumping station of Abu Atwa	From 90 to 135 thousand	90,000,000	According to law no. 48 of 1982
2	Sanitation of Ballah	----------	5,000,000	

	before the old univerity			
3	Complete the sanitation of Bahteeni and Abu Atwa villages	----------	15,000,000	
4	Complete the sanitation of Future city and 10th of Ramadan , educational compound	----------	25,000,000	
5	Integrated sanitation of Abu Sweer and Sabaa Abar villages	To be 10 thousand	70,000,000	According to law no. 48 of 1982
6	Sanitation of Gawish Land and Halwes Village in Ismailia city	10 thousand	70,000,000	
	Tal Kebeer City and Markaz			
1	Integrated sanitation for Kassasseen town	10 thousand	70,000,000	According to law no. 48 of 1982
2	Extensions of waste water treatment plant in tal kebeer and 7 villages (Baalawa- Zahiria- Green Gezeera- Bakarsha- Qareen- Abu Ashour- Abu Eyadah)	From 10 to 25 thousand	70,000,000	According to law no. 48 of 1982
	Fayed City and Markaz			
1	Extensions of waste water treatment plant in tal kebeer and 3 villages(Fanarah- Abdul Naser- Center shop)	From 10 to 25 thousand	45,000,000	According to law no. 48 of 1982
2	Abu Sultan Sanitation	----------	20,000,000	There will be a link between Ismailia city and serabuim
3	Serabuim village sanitation	----------	17,000,000	There will be a link with Ismailia city
4	Complete sanitation of coastal area in Suez Canal Fayed markaz	----------	55,000,000	There will be a link with Fayed city
	Qantara East city and Markaz			
1	Old city sanitation	----------	----------	
2	Abtal village sanitation	----------	----------	

4-2-2-3 Current situation: problems and causes

Current situation	Problems and their Negative effects	Causes of the problems	Plans and programs in the current situation
There no sanitation in some cities and markazes	Passive effects on environment and citizens	No Fund	Some villages have been on process as mentioned in (4-2-2-2-4)
The over drains in more than expected to some waste water treatment plants	Passive effects on environment and short expiry date for new plants	No fund for building new plants or extension of the existed plants	Extension of Serbuim plant and Abu Atwa pumping station and Tal Kebeer and Fayed plants
Pollution of ground water due to open air tanks	Harmful effects on public health and contaminated ground water and basis of houses due to direct drains on lakes and canals	No system of sanitation in most of the villages due to limited fund	Environmental awareness to isolated tanks and provide waste water trucks to be on the drains not canals

4-2-2-4 the vision and Goals

The vision of the governorate is to extend the sanitation to all parts of the governorate to achieve these goals:
-Have a good service in both cities and villages.
-Save the ground water from pollution
-Save the agricultural drains from being contaminated
-Develop the waste water treatment plants
-Raise the standard of the sanitation to be ready for present and future service
-Environmental awareness of citizens to use the drains in proper way

4-2-2-5 Goals and required works

The main goal	Goals in the next five years	Decisions & measurements
Service of needed cities and villages of Sanitation	- implement slop networks - implement pumping stations - implement drawing lines -implement waste water treatment plans in needed areas	- prepare a concept of project for funding agencies - prepare a plan for service of sanitation in both cities and villages
Developing the	- extension of present the waste water	- extension of Ismailia waste

waste water treatment plants	treatment plants to deal with the increase of activities - extensions of pumping stations for present and future needs - extensions of treated water in the agriculture by suing it in wood forest and on banks of the all desert roads	water plant from 90,000 to 135,000 m³/day - extensions of Tal Kebeer waste water treatment from 10,000 to 25,000 m³ / day -increase the area of wood forest to be 450 Faddens on the treated water of fayed city
Environmental awareness	- environmental awareness to citizens - no using open tanks and un isolated ground tanks in houses -provide the local units with trucks to draw waste water from houses.	- increase the number of waste water trucks -encourage the NGOs in this field by having benefits -participate of the peoples councils in this field

4-2-2-6 the sub- projects of the five year plan

4-2-2-6-1 high priority projects

Name of City and Markaz	Sub-Projects	Agency in charge	Implementation Agency	Estimated Budget	Time framework	Funding agency
Ismailia	Sanitation in Ali Aid Village and land no. 42	National authority for potable water and sanitation Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate	5 millions	2-3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund - Ministry of Agriculture -Ministry of Environment
	Sanitation in k 2	National authority for potable water and sanitation Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate	10 millions	2-3 years	

	Sanitation of the ring road and Fedico and university Areas	National authority for potable water and sanitation - Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	50 millions	2-3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Sanitation for Nasr and Adam villages	National authority for potable water and sanitation - Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	5 millions	2-3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Sanitation for Wasfia village	National authority for potable water and sanitation - Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	10 millions	2-3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
City and Markaz of Qantara West	Sanitation for Banhawah , Rayah and Bayadeyah villages	National authority for potable water and sanitation - Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	25 millions	3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

4-2-1-6-2 Medium priority projects

Name of City and Markaz	Sub-Project	Agency in charge	Implementation Agency	Estimated Budget	Time framework	Funding agency
Ismailia	Sanitation of Dahbayiah and Ain Ghasseen villages	National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	**15 m**	2-3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Sanitation for Abu Asaker ,Manifa, Syourah, Samakeen, Abu Rabie , Sobeih and Kelanyah villages	-National authority for potable water and sanitation -Directorate of housing in the governorate	-National authority for potable water and sanitation -Directorate of housing in the governorate	**15 m**	3 years	
	Sanitation for Hamadat	National authority for potable water and sanitation - Directorate of housing in the governorate - Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	**5 m**	2-3	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
City and Markaz of Tal Kebeer	Sanitation for Mahasmah, Aum Azam, Wabarat, Sherouk, Abu Aledeen, Abu Sayed villages	National authority for potable water and sanitation - Directorate of housing in the governorate Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate Ministry of Agriculture	**15 m**	3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

Markaz and city of Fayed	Sanitation of Salam, Saydiah, Makhadah, Hassybah, Sester Ksfreet and Abu Roumanh villages	National authority for potable water and sanitation - Directorate of housing in the governorate Ministry of Agriculture	National authority for potable water and sanitation -Directorate of housing in the governorate Ministry of Agriculture	**10 m**	3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
Markaz and city of Qantara West	Sanitation for Nasr and k 17 villages	National authority for potable water and sanitation - Directorate of housing in the governorate Ministry of Agriculture	National authority for potable water and sanitation - Directorate of housing in the governorate Ministry of Agriculture	**15 m**	3 years	Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

4-2-2-6-3 low priority projects

Name of City and Markaz	**Sub-Project**	**Agency in charge**	**Implementation Agency**	**Estimated Budget**	**Time framework**	**Funding agency**
Ismailia	Sanitation of extension of street talaneen	National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	National authority for potable water and sanitation -Directorate of Housing in the governorate - Ministry of Agriculture	**5 m**	2-3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Sanitation for Khashaynah and Gamahleen villages	-National authority for potable water and sanitation -Directorate of housing in the governorate - Ministry of Agriculture	-National authority for potable water and sanitation -Directorate of Housing in the governorate - Ministry of Agriculture	**5 m**	3 years	

Markaz and city of Qantara West	Sanitation for Neighborhood no.5 + 7 and Qantara west and extensions of the waste water treatment plant	National authority for potable water and sanitation - Directorate of housing in the governorate - Ministry of Agriculture	National authority for potable water and sanitation -Directorate of Housing in the governorate - Ministry of Agriculture	**25 m**	3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
Markaz and city of Qantara East	Sanitation for all the villages of the markaz	National authority for potable water and sanitation - Directorate of housing in the governorate Ministry of Agriculture	National authority for potable water and sanitation -Directorate of Housing in the governorate Ministry of Agriculture	**50 m**	3 years	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

4-2-2-7 Profile of some of the projects and programs

Project of sanitation service to needed areas in the governorate

Description of the project

-There is no sanitation in some of the cities and villages of Ismailia governorate
-It has a very passive effect on both environment and citizens
Contaminated ground water- poor health of citizens-polluted canals and drains

Description of the project and its elements

- Sanitation for needed areas in the City and markaz of Ismailia
- Sanitation for needed areas in the City and markaz of Tal Kebeer
- Sanitation for needed areas in the City and markaz of Fayed
- Sanitation for needed areas in the City and markaz of Qantara West
- Sanitation for needed areas in the City and Marrkaz of Qantara East

The required works

- Implement slop networks
- Implement pumping stations
- Implement drawing lines
- Implement waste water treatment plans in needed areas
- Implement the wood forest on the desert roads

Implementation Agencies

- National authority for Potable Water and Sanitation
- Ministry of Agriculture

Funding Agencies

- Self funding
- Grants& loans
- funding by the National Authority of potable water and sanitation
-Governorate Fund as per plans of 2012-2017 2017-2022
- Ministry of Agriculture
-Ministry of State for Environmental Affairs

Estimated cost

-Around 266.5 million Egyptian Pounds

4-3 water resources and coastal management

4-3-1 General Background

Ismailia Canal is considered the main fresh water resource in Ismailia governorate. It carries the Nile river water to the three cities of Canal (Port Said- Ismailia- Suez). The water of the Canal is used in agriculture, potable water and industry. The length of the canal is 128,500 km sq. inside Ismailia Governorate. It has three sub-canals.

- Suez Canal with length of 89760 km with 49,500 km inside the governorate
- Port Said sub-canal with length of 76,670 km with 45km inside the governorate
- Manaifa sub-canal with 3,800 km inside the governorate.

There are 36 other sub canals from these four canals. Ismailia canal capacity of using water is 9,5million m^3/day. Ismailia governorate has 4,7 million m^3/day. The governorate does not depend on the ground water as potable water. Suez Canal is an international pass way. It links Mediterranean Sea from north to the Red sea from south. The length of Suez Canal is 162km. If we add the two port entrances of both Port Said and Suez, it will reach to 190 km. There are no reservoirs in the Suez Canal due to the same sea level of Mediterranean and red sea. This water pass has two lakes .Temsah and bitter lakes are links to the Suez Canal. This water area plays a very important role in the tourism and entertainment. It is a good resource for fishing. These lakes are good resources of algae, invertebrates such as shrimps, curbs, oysters and shells. It has many different kinds of fish such as meager, Salema, black sea Bream, Indian flat head and mugil.
Suez Canal faces the risks of pollution due to the use of the heavy fuel and oil in the tankers and leakage of fuel in the water. Pollution has many risks. Some of them are direct and others are indirect. The direct risks are the deterioration of the coasts and water. The indirect risks are the hydro carbonic materials which affect the components of the water and the bio diversity of

different the environmental marine. The oil can be absorbed by the fish, crustaceans and mollusca. This is a very risky to the public health.
The chemical and biological elements of the lakes have been damaged. Many environmental problems have been caused by pollution.

Temsah Lake

Temsah Lake has distinguished environmental features. It can provide Ismailia with many different kinds of fish annually. It is a tourist site. The total area of the lake is 1900 Feddan with 10m Depth. It has 90million m^3 of salty water. The lake is linked by two water surfaces. The first is the Western pool of Sayadeen and the second is the Suez Canal pass way. The total capacity of fishing per year is 1118 tons. The lake has 2millions m^3/ day of sewage water by Mahsmah drain coming from the south. The other part of the lake is not affected due to the deep water of about 20m and width of 200m. There are many islands in the lake. These islands help to have two different water current in the quality of water. There is a big difference between the water of the lake and the water of Suez Canal. The Sayadeen pool is less in depth and smaller in size than Temesah Lake. The rate of salt is less in this pool because it is much related to the Mehasmah drain. The low and high tide is related to the level of water in the pool. The current water speed is 18,5 cm /second in the north direction. The opposite is in the Western pool. The accumulated polluted materials are in the shore of the lake and in its depth. Purification operations began in March 2000 and finished in February 2002 with total cost of 50 million Egyptian Pounds. The total cost is funded by Suez Canal Authority.

Bitter Lakes

The coasts of the lake are about 50 km. it begins from the north of Ismailia governorate in Defreswar to Kabreet in the south. The total area of the lakes is 40km2 about 9525 feddans. The bigger bitter lake is 194 km sq. about 4619 feddans. The bigger, smaller bitter and Temsah Lakes are the main elements of tourism in Ismailia Governorate. Moreover, the fishing and fisheries are great main investment sectors in Ismailia.
The bitter lakes suffer from pollution due to the agricultural drains. The sanitation of the tourist sites on shores, sand filling affect badly on the bio diversity of the lakes. The fish has decreased due to the polluted water in some areas of the lakes.

Mahasmah drain

The main resource of pollution of Sayadeen pool is Mahasmah drain. Mahasmah drain pours all contaminated water in Temsah Lake. It is about 2 millions m^3 / day. The 90 % the water of agriculture 10% of the waste treated water drains. The Mehamsah drain starts from Azeb Wabourat in New Kassasseen city up to Sayadeen pool. Its length is 23 km. It has a pumping station from Wady Drain up to Tal Kebeer. Abu Sweer and its branch pour the waste water in Mahasmah. Dabyahia, Manaifa and their branches pour waste water in Mahamsmah. The big problem is that most of the villages and hamlets have no sanitation. Mehasmah is the main resource of all waste water in Ismailia.
The Sanitation Authority has made fines for those who polluted the water. The main problem is that most of these villages have no system of sanitation. There is no other alternative in time being.

Malaria Drain

The malaria drain is the main resource of contaminated the water of the bitter lakes. Malaria drain extends from Suez Canal up to Abu Sultan which is the border between Ismailia and Suez. This drain consists of a group of sub- drains with length of 23,500 km
These drains are used by Suez Governorate**.** The drain goes to the bitter lakes by the pumping station in both Fayed and Fanarah.
The Human activities in this area have increased. People begin to throw solid waste and waste water in pipelines then, directly to the drain. Purification operations have faced many problems. Moreover, the agricultural land can not use the drain in proper way. The Malaria drain has many polluted materials as follows:

- Untreated waste water in the needed areas
- Waste water trucks use the drain.
- Military forces use the drain

Table no. (5) Quantity of Waste water in the Malaria Drain

S. No	**Area**	**Waste water of** m^3 **/ day**
1	From Abu Sultan to Blue Beach Village	6191,25
2	From Fayed city limits to Suez Canal	5973,75
3	From Fayed city to Abu Romanah Village	8432,25

Most of the people who have no sanitation service use Malaria drain. As we said before that the trucks of waste water use the drain or the no- man- land.
On the west of the drain, there are some areas which pour its waste water in the drain and its branches.

The disposal of the treated waste water
The disposal of the treated waste water is in the lakes. Some of this treated water is used in the wood forest of 500 feddans. It is also used in the project of silk worms. The other un served areas used the drains to get rid of the waste water.

Table no. (6) Drains affiliated to Sanitation Authority and used Suez Canal, Lakes and Sayadeen Pool.

Name of the drain	**Drained**	**Mouth of the drain**
Mehasman	**25m3/second**	**Sayadeen pool & Temsah Lake**
Ferdan Branch	2 m^3/second	Suez Canal
Abu Gamous	35 m^3/second	Sayadeen pool
Drain no.3 east of Lakes	0,5 m^3/second	Suez Canal
Serbuim	6.5 m^3/second	Suez Canal
Pumps of Kassasseen Drain	10 m^3/second	Mahasmah and Sayadeen pool

Pumps of Gabal Merriam	2 m^3/second	Suez Canal
Pumps of Balah	4 m^3/second	Suez Canal
Pumps of Fayed	1 m^3/second	Bitter lake
Pumps of Fanarah	1 m^3/second	Bitter lake

Page (81) map of the main drains and canals in Ismailia Governorate

4-3-2 Achievements in the last five years

4-3-6-1 Decisions and Measurements

-The fines for breaking the law have been done according to law.48 / 1982.
-The law 35-38/ 2007 for removing the washing pipelines]
-The administrative decision no. 44 / 2007 is to remove two unlicensed fisheries.

4-3-6-2 implemented Projects and programs

- Suez Canal Authority has purified Temsah Lake with total cost of 50 million Egyptian pounds.
  It has also purified Mehasmah drain from Hanafy Bridge up to Beach road with total cost of 600,000 Egyptian pounds.
- Irshad Pumping Station is to serve the Irshad area and all utilities of Suez Canal Authority. The capacity of waste water of Suez Canal Authority buildings is 17 liter / second.
- Building Ishgal pumping station with capacity of 17 liter / second.
- Building Gomrouk Pumping Station with capacity of 68 liter / second
- Building three stations to present pouring waste water in Temsah Lake with a total capacity of 3000 m^3/ day.
- Connecting the clubs in the shore with the sanitation network in the lake with capacity of 1000 m^3 / day.
- Extension of needed areas by covered waste water network. Renewal and replacement of 4.5 km of the old road with capacity of 1000 m^3/day.
- Building a network for the staff of Suez Canal Authority for Pumping Station of capacity 2000 m^3 /day in Temsah Lake.
- Building the waste water treatment plant in Serabuim with capacity of 90000 m^3 /day instead of being poured in Mehsamah drain.
- Purifying the closed parts of Suez Canal Authority.
- Building Bahtemy village pumping station to serve Behateemy to prevent waste water of 3000 m^3 /day.
- Building Tawoon pumping station to prevent the Tawoon beach and near dwelling area from pouring 1000 m^3/ day.
- Building waste water treatment plant in Tal Kebeer city with capacity of 90,000 m^3 /day.

4-3-6-3 projects under construction

- Building on process of waste water treatment plant in Abasah Village to prevent direct pollution of the wady drain.
- Building on processes of the waste water treatment plant in Kassasseen city to prevent direct pollution of Mehsamah drain.
- Building on process of Waste water treatment plant in Abu Sweer city to prevent direct pollution of Mehsamah drain.
- Building on process of waste water treatment plant in Fayed to prevent pollution of the bitter lakes.

4-3-3 Current situation: Problems and causes

Current situation	Problems and their negative effects	Causes of the problems	Plans and programs in the current situation
The bad quality of water in Temsah Lake and Saydeen Pool and passive impact of health	-Condemnation of Temsah lake, Mehasamh drain by agricultural and industrial waste -weeds and accumulated contaminated materials -low level of surface water -contaminated bottom of the lake. - invalidity of the water use in tours tic activities Poor bio diversity and fish store, low production	- Continues daily draining from all sorts of solid and liquid waste such as slugs, industrial materials, oil productions and waste water of houses.	-Coordination between Ministry of Environment and Suez Canal Authority to purify the south part of Temsah Lake with total cost of 9 m pounds - Transfer the waste water of Mehasmah Drain to be used in Wood forest.
Pollution of the bitter lake	Bitter lake has many sources of pollution such as malaria drain which contain agricultural, industrial , tourist and ships waste	-Malaria drain is the main source of pollution to the bitter lakes	No plans or programs to purification of the bitter lakes.

4-3-4 Vision and goals

In order to protect the water resources from all sorts of pollution and to protect the health of the citizens, we have to raise the quality and standard of water by the following:

- Stop all sort of pollution by preventing the drains to pour waste water in the bitter lakes.
- Removing all sorts of pollution in Tmesah Lake to protect the fish stokes.
- Stop all sort of pollution to Bitter lakes and Malaria drain.
- Raising the environmental awareness among the people and staff of the water resources Department in the Governorate.

4-3-5 Goals and required works

The main goal	Goals in the next five years	Decisions & measurements
Preventing Pollution in Temsah lake and Sayadeen Pool	- Stop sources of pollution from Mehsamah drain -Treatment of Mehsam waste water before pouring in the Saydeen Pool. - Using the treated waste water. - Have a sanitation system in the needed villages instead of pouring waste water in Mehasamah. -Develop the waste water treatment plant in Serabuim.	- Have service of sanitation on the villages instead of using Mehasmah drain. - Develop the waste water Plant of Serabuim. - Using the treated waste water in irrigating the wood forest and the desert roads

	- using the treated waste water in irrigating the wood forest. - Removing the hoses and pipelines of the Suez Canal Authority from the western side of Canal bank. - Transfer of the potable water waste to the sanitation network.	
Removing the pollution in Temsah Lake and Sayadeen Pool.	- Purification of Temsah Lake. - Develop the fish stoke in the lake. -Remove the water weeds and muddy blocks. -Compete the building of the pool banks to have side walk place - Build a marine for fishermen.	Prepare a purification plan for the Temsah lake and Sayadeen Lake.
Preventing pollution sources of bitter lake	- Have the sanitation in all needed areas in villages, tourist sites in stead of pouring wastewater in Malaria drain	- Prepare a plan for the resources of pollution in Malaria drain. Bitter lakes after having sanitation service
Increase the environmental Awareness	-Prepare a environmental awareness in all segments of the society and those who work in the field of water resources by using Audio-visual Media	There is neither program nor project for environmental awareness

4-3-6 list of the proposed projects in the five-year plan

4-3-6-1 High priority projects

4-3-6-2 Medium Priority projects

4-3-6-3 Low priority Projects

Name of City and Markaz	Sub-Project	Agency in charge	Implementation Agency	Estimated Budget	Time framework	Funding agency

All Ismailia Governorate	Supporting the final catchments of Sandouk and Gabal sub-canal	General Department for irrigation affiliated to Directorate of Water resources and irrigation	General Department for irrigation affiliated to Directorate of Water resources and irrigation	**300,000**	**2 years**	**-** Self funding - Grants& loans - funding by Directorate of Water resources and irrigation - Governorate Fund
	Reusing Manaifa drain by using Moutiya canal	General Department for irrigation affiliated to Directorate of Water resources and irrigation	General Department for irrigation affiliated to Directorate of Water resources and irrigation	**100,000**	**2 years**	Self funding - Grants& loans - funding by Directorate of Water resources and irrigation - Governorate Fund
	Waste water treatment of Mehsamah Drain	General Department for irrigation affiliated to Directorate of Water resources and irrigation	General Department for irrigation affiliated to Directorate of Water resources and irrigation	**one million**	**2 years**	**-** Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
All Ismailia Governorate	Supporting Tolumbat station for the youth project	General Department for irrigation affiliated to Directorate of Water resources and irrigation	General Department for irrigation affiliated to Directorate of Water resources and irrigation	**500,000**	**2 years**	**-** Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund
	Treatment of polluted oil in Temsah Lake by using micro organism	Suez Canal University Research and Consultancy Center Suez Canal Authority	Suez Canal University Research and Consultancy Center Suez Canal Authority	**200,000**	**2 years**	**-** Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -Governorate Fund

	Using wet land to biological treatment in Mehsamah Drain	Suez Canal University Research and Consultancy Center Suez Canal Authority	Suez Canal University Research and Consultancy Center Suez Canal Authority	**One million**	**5 years**	- Foreign Fund
All Ismailia Governorate	New Kassasseen Waste water treatment plant to support Salyhiah Project.	General Department for irrigation affiliated to Directorate of Water resources and irrigation	General Department for irrigation affiliated to Directorate of Water resources and irrigation	**50 millions**	**----- years**	- Self funding - Grants& loans - funding by the National Authority of potable water and sanitation -forign Fund

4-3-7 Profile of some priority projects

The project of supporting the termination of Sandouk and gabal Sub-canal

Description of the problem

The continuous condemnations of Wady drain due to throwing cement, insecticides and parasites and waste water.

Description of the project and its elements

Using two pumps to raise the water in Wady drain to support Sandouk and Gabal drain.

Implementation agency

- General Department for drains affiliated to the directorate of Water Resources and Irrigation
- Estimated cost of the project
- Installation and providing of two pumping machines of 2m3 /second to be used in Wady drain with total cost of 300,000 Egyptian Pounds

Funding agencies

- Directorate of Water Resources and Irrigation
- Foreign donors

Project of Using New Kassassen Plant to support Salyhia project

Description of the problem

The aim of the project is to reuse the Wady drain to be mixed with Ismailia canal
This project will cause more pollution to the potable water of Ismailia canal.

Description of the project and its elements

Build waste water treatment plant for Wady drain. Then, pumping treated water under the Ismailia canal by pipelines to support Salyhia project.

Implementation agency

Directorate of Water Resources and Irrigation

Estimated cost

Pipelines under the Ismailia Canal with length of 1.3 km
with total cost of 50 million pounds

Funding agency

Ministry of Water Resources and Irrigation

Supporting pumping station of the youth project

Description of the problem

The continuous contamination of the Mehasmah drain because of throwing cement, insecticides and parasites and waste water, the youth project serve 32,500 feddans.
Mehsamah treated water can be used to support this project under law 48 / 1982
to protect the Nile river from pollution.

Description of the project and its elements

-Two pumps can be used on 37 km of Mehsamah Drain. Two pipelines will be used.

Implementation agency

-Directorate of Water Resources and Irrigation

Estimated cost

- Installation and providing two pumping machines and electricity power
  is 500,000 Egyptian Pounds.

Funding agency

-Ministry of Water Resources and Irrigation
-Ministry of Local Development
-Ministry of Housing and Utilities

Project of Reusing Manaifa drain and Motyiah Drain

Description of the project

The increase quantity of water from Manifa drains which pour in Mehsamah Drain. This leads to contaminate the both the drain and Temsah lake.

Description of the project and its elements

-Pumping station has a capacity of 1 m^3 /second on Motiyah drain from Manifa drain.

Benefits of the project

- Improve the status of the Manifa Drain.
- Improve the waste water to both Mehsamah drain and Temsah Lake

Implementation agency

-Directorate of Water Resources and Irrigation

Estimated cost

-Installation and providing one pumping machine and electricity power is 100,000 Egyptian Pounds.

Funding agency

-Ministry of Water Resources and Irrigation
-Foreign donors

Project of Waste water treatment plant in Mehasmah

Description of the problem

The continuous contamination of the Mehasmah drain because of throwing cement, insecticides and parasites and waste water

Description of the project and its elements

- Increase of BOD in the waste water. This will help to remove the pollutants such as organic, biological, and chemical and insecticides in aero biological way.
- Using the surface way: pumping high volume of air by huge blowers
- Spreading air: having pipes with holes to have air bubbles as biological treatment
- Auto airing: have some water whales to increase the percentage of oxygen.

The benefits of the project

-Improve the status of the drain will lead to improve the Abu Gamous pool and Temsah Lake

Implementation agency
-National Authority for Potable Water and Sanitation
- Egyptian Environmental Affairs Agency (EEAA)

Estimated cost
-Around one million Egyptian pounds

Funding agency
-Egyptian Environmental Affairs Agency
-Foreign donors

Project of polluted oil treatment in Temsah Lake by using Micro organism

Description of the Problem

Temsah Lake is natural resource of fish. Moreover, it is a good location for having tourist sites. The lake is linked to Suez Canal pass way. This means that many different kinds of ship pass thought the lake. The oil is one of the main sources of pollution. This has a very passive impact on environment. Some time the chemical treatment is used to solve part of this problem. However, studies and research have proved that chemicals increase the pollution and deform the bio diversity in the lake. Micro organism can be a good solution to this environmental problem. New Technology will be used to magnify the benefit of the micro organisms to remove the oil spots in the Suez Canal pass way.

The goals of the project

- Biological treatment of the oil spots in the lake
- Using enzymes to treat the oil spots in Temsah Lake

Description of the project and its elements

- Having a map of all oil spots in Temsah Lake
- Using physical, chemical, biological analysis to melt the oil spots
- Magnifying the micro organism to be used in wide spread
- Evaluating the use of the micro organisms in Temsah Lake.

Implementing agencies
- Suez Canal University
- Suez Canal Authority
-Research and environmental Consultancy center

Estimated Cost
-Around 200,000 Egyptian Pounds

Implementing Agencies

-Foreign donors

Project of using wet land for biological treatment of Mahsamah Drain
Description of the problem

Mehsamh Drain has more than 220,000 m³/day of treated waste water from Serbuim Plant. The pollutants of the agricultural, industrial and waste water in both direct and indirect ways from Mehsamah to Saydeen pool to Temsah Lake increase the status of pollution. There are high remains of cement, insecticides and heavy mantels in the drain. This pollution has led to deterioration of the fish stoke which reached to 1118 tons / year.

The goal of the proposed project

- Using the wet land of Mehsamah drain to treat the agricultural and industrial waste water.
- Use the biological treatment by using agricultural wet land**.**

Description of the project

The capacity of the project is about 1000 m³ of treated water /day.
- use the wet land in treating part of the water to dispose the heavy metals.
- have biological treatment sinks to purify water with 75%
- Treated water to be used under the sun to eliminate the sick bacteria
- 1000 m³ /day is the capacity of purifying water.
- Treated water can be used in irrigation and fisheries.

Implementing agencies
- Suez Canal University
- Suez Canal Authority
-Research and environmental Consultancy center

Estimated Cost
-One million Egyptian Pounds

Implementing Agencies
-Foreign donors

4-4 Industrial abetment and Hazardous waste
4-4-1 General Background
There are many industrial zones in Ismailia. The first, the second and the free zone industrial areas are in the west of Ismialia city on the Cairo- Port said desert road. There is also another industrial area in the east of Qantara east. Moreover, there is also the technology valley which 14 km from Ismailia city. Besides the industrial areas which are under construction in Abu Khalifa village and Qantara west. The total daily waste of these industrial areas is 6-8 ton according to the data of the industrial areas management in the governorate. There are many environmental problems in these areas. We have the air pollution as a result of using solar and heavy fuel in industry. Moreover, the

accumulation of the solid waste is a result of the absence of integrated solid waste management system in solving the industrial waste water. The using the potable water in irrigation of green land is very clear in these areas. The low environmental awareness is very clear among the staff of factories. We have also the building of private workshops in the dwelling areas which increase the harmful emissions in the entire areas.

This is a brief description of the environmental problems and how we solved them in the last five years and how will we solve them in the forthcoming period.

Page (101) Harmful emissions on the industrial areas in Ismailia

4-4-2 the achievements in the last five years

4-4-2-1 the decisions and measurements

- The decree of the prime minister 97 / 2002 that all the administrative boards of all industrial areas to be unified under head of the governor of Ismailia.
- the governor has issued a decree no.147 of 2002 to unify the administrative boards.
- The decision of the Industrial free zone board no.44/1/ 2003 to have the sanitation department of the governorate to do all sorts of sanitation in the industrial area.
- The decision of the governor no 653 / 2004 to allocate area of 2800 m sq to establish an area for technicians in Swaraka area.
- All decrees and decisions have been implemented in the city and markaz of Qantara west.
- Designing the Swarka area for having 70 workshops in area of 2800 m sq. as a first step.
- 130 feddans have been allocated by the governor in Qantara East to be used as a wood forest.

4-4-2-2 technical and administrative support

- Training courses for the staff of the industrial free zone include the following:
- The environmental impact assignments on projects by EEAA.
- The environmental impact assignments on projects by Investment Authority.
- Civil defense and fire fighting training courses by the civil defense Department.
- Exclusive data of the all the legal and illegal workshops in Qantara West by the license division in the local unit.
- Classification of the professional workshops to know how is its impact on environment.
- The local unit of Qnatara West has formed a committee to check of all the workshops in the dwelling areas. This committee has members of the EMU, Industrial security, health and population. The p owners have to remove their workshops from the dwelling areas.
- An independent Agency has been formed in the industrial area of Qantara East.

4-4-2-3 the implemented projects and programs

- Paving roads, lightening, sanitation, communication network, planting green areashave been made in the first and second industrial areas in Ismailia.
- Sanitation network related to the future city and Seribuim has been made in the industrial free zone in Ismailia.
- Installation of poster in the water network to increase its efficiency.
- Implement irrigation spray network covering 16 feddans to be cultivated.
- Natural gas to be used in some projects in the industrial free zone.

- Paving roads in the administrate area of the free zone.

4-4-2-4 Projects and programs under construction

- 10 feddans will be allocated as land fill for industrial solid waste in Abu Khalifa
- Renewal and replacement of the sanitation plant in the free zone in Ismilia
- Complete of paving the roads, tree planting in the first and second Industrial areas
- Waste water treatment unit with capacity of 7700 m³ /day for Qantara East And the new city

4-4-3 the Current situation: problems and causes

Current situation	Problems and their passive effects	Causes of the problems	Plans and programs in the current situation
Air pollution in the industrial areas in the entire governorate	- Air pollution has passive impact on the staff of the industrial areas. (first- second- free zone- Qantara East- small industries complex)	- Using solar and heavy fuel lead to harmful emissions - Refusal of the investors to use natural gas in Qantara East. - No fund for switch on natural gas.	- There is no plan or project to use friendly environmental fuel. - Free Zones Administration has allocated 2500 m2 for Town gas co. to have low pressure station.
The spread of the solid waste in the industrial areas	- Accumulation of the industrial waste as a result of random disposal waste. - the types of the solid waste board papers- papers- plastics- glass- food remaining- textile- small parts of marble- chemical pacts- Total daily solid waste is 6-8 ton/day. The passive impact leads to increase of insects 'and rodents. No recycling of these wastes	- Disposal of solid waste near the factories. - No system for safe disposal. -No integrated management system -No studies and no experiences -No fund	There is no plan or project to use friendly environmental fuel. - Free Zones
The treatment of the liquid and industrial waste in the industrial areas in	-The disposal of the solid waste of all the industrial areas by having waste water treatment units in the	- The extensions of production lines are not applied to law 93 /1963 and decree	There is no plan or project to use industrial waste water treatment units - No plan for

the entire governorate	factories related to the sanitary network - This has to been done according to law 93 for 1962 and no 44 for 2000 Passive impacts on citizens	44 / 2000 - No separate industrial waste water network	having a separate waste water network.
Using potable water in irrigating the green areas in the industrial zones	-There is no network for sedum water to irrigate the green areas - There is no fire taps	- There is no sedum water network for green areas watering	There is no plan or project to use industrial waste water treatment
No monitoring lab in the industrial area to know the pollutants	- no environmental monitoring lab in the industrial area to know the pollutants in the industrial sanitation	- No environmental monitoring lab in the industrial area	There is no plan or project to use monitoring lab in the industrial area
The low environmental awareness of the staff in the industrial areas	- No environmental awareness in the industrial areas - No training courses from the environmental , industrial security and civil defense and fire fighting	- No courses or workshops of environmental awareness	There is no plan or project to have courses or workshops of environmental awareness
Workshops in the dwelling areas in both Ismailia city and Qantara West	- Workshops in the dwelling areas - Random disposal of industrial waste -75% of industrial waste is not collected	- Workshops in the dwelling areas -No strategic to deal with workshop -Neither studies or researches in this field -No fund	- Program for removing the workshops from dwelling areas. - deigning planning of Swarka zone in first phase of 70 workshops
No green belt in the industrial area in Qantara east	- Industrial area in Qantara east needs the green belt -The limited green areas in the industrial zones	- The dusty wind in the industrial area in Qantara east - No water network to irrigate the green areas	There is no plan or project to have water net work
The poor potable water in the industrial areas	- Suffering of poor water-increase the rate of pollution - Number of staff reaches to 20,000	- The misuse of some other agencies on the potable water network	There is no plan to have strong potable water in the industrial free zone

4-4-4-vision and goals

-Improve the environment in the industrial areas in order to reduce the pollution

- Switch off to natural gas as a friendly gas

-Remove the technical workshops far from the dwelling area

-Prepare and implement integrated solid waste management system.

- Recycling the solid waste to reduce the passive impacts on environment

- Improve and develop the industrial waste water treatment units.

-Use the turbid water network in the industrial areas to water the green areas

-Modernize the industry and have the ISO certificates to the industrial areas

-Increase the environmental awareness among staff of the industrial areas

-Increase the capacity of the potable water plants in the free zone.

4-4-5 the goals and required works

The main goal	Goals in the next five years	Decisions & measurements
Switch on the natural gas to the entire industrial areas	- Prepare a plan for switching to natural gas in the industrial areas.	- Prepare a vision of the project and submit it to the funding agencies -Prepare a plan for switching on natural gas in industrial areas
-Prepare a plan of the integrated solid waste management in the industrial areas and workshops zone -New system of recycling the industrial solid waste	- Prepare a plan for integrated solid waste management in the industrial areas in the governorate -Have criteria of industrial areas to include particular trucks for certain purposes. -Select more than one alternative to the solid waste management system. - Provide every governmental agency with its tasks in the governorate. -Have a central management of solid waste to encourage the investment. -The participation of the private sector in the solid waste management system	- Prepare a vision of project and submit it to the funding agencies. - Prepare a plan for the solid waste management
Prepare an industrial waste treatment units in the industrial areas	- prepare a plan for developing the waste water treatment units in the industrial areas	- Prepare a vision of project and submit it to the funding agencies. - Prepare a plan for improving the waste water treatment units
Have unclean water network in	- Prepare a plan fro having unclean water network in the industrial areas to	Prepare a vision of project and submit it to the funding

the industrial areas to water the green areas	water green areas	agencies. - Prepare a plan for having unclean water network.
Modernize the industry and get the ISO Certificates in the industrial areas	-Prepare a plan for modernize the industry in the industrial areas to get the ISO	Prepare a vision of project and submit it to the funding agencies. -Prepare a plan for modernizing the industry to get the ISO. -Evaluate the deeds and the plans
Environmental Awareness of the staff of the industrial areas	-Prepare a plan for Environmental Awareness of the staff of the industrial areas	Prepare a vision of project and submit it to the funding agencies. -prepare a plan for Environmental Awareness of the staff of the industrial areas
Increase the capacity of the potable water in the industrial areas	- Prepare a plan for increasing the capacity of the potable water in the industrial areas	-Remove all the outlaw buildings from the concerned authorities - Coordination between the governorate and the Suez Canal Authority and the national authority for potable water and sanitation to increase the volume of potable water in the industrial areas

4-4-6 sub- projects of the five- year plan

4-4-6-1 High priority projects

Name of City and Markaz	Sub-Project	Agency in charge	Implementation Agency	Estimated Budget	Time framework	Funding agency

All Ismailia Governorate	Project of switching to natural gas in all industrial areas	Natural Gas Company	Natural Gas Company	**3 millions**	**2 years**	- Foreign funding - investors society
	Project of the integrated solid waste management in the industrial areas	Cleaning companies under the supervision of the service committee in the industrial areas	Cleaning companies under the supervision of the service committee in the industrial areas	**3 millions**	**2 years**	Foreign funding - investors society
	The solid waste management system in the industrial free zone	Private sector	Private sector	**3 millions**	**2 years**	Foreign funding - investors society
All Ismailia Governorate	The solid waste management system in the industrial area of Abu Khalifa on 10 feddans	Services committee of the industrial area in Abu Khalifa and local unit of Abu Khalifa	Services committee of the industrial area in Abu Khalifa and local unit of Abu Khalifa	**3,8 millions**	**3 years**	- Foreign funding - investors society
	Project of increasing the environmental awareness among the staff of the industrial areas	Services committee of the industrial area in Ismaila city	Services committee of the industrial area in Ismaila city	**5 millions**	**2 years**	- Foreign funding - EEAA

	Removing the workshops from from Ismailia city	-Ismailia city council - Reconstructio n Agency -Directorate of housing in the govern ate	Ismailia city council -Reconstruction Agency -Directorate of housing in the govern ate	**5 millions**	**3 years**	Foreign funding - EEAA - Social fund
	Building an area for the technicians on 2800 m2 as first phase in Sawarka far from the dwelling area of Qantara West	-Local Unit of Qanatara West	Local Unit of Qanatara West	**350,000**	**3 year**	Foreign funding - EEAA - Social fund
	Project of unclean water for having a buffer zone between the Industrial area in Qantara East and dwelling area.	- Sinai Reconstructio n agency - Directorate of Agriculture in the governorate	Sinai Reconstruction agency - Directorate of Agriculture in the governorate	**7 millions**	**2 years**	Foreign funding - EEAA - Social fund
	Natural Gas in the free zone in Ismailia city	Natural gas company	Natural gas company	**5 millions**	**2 years**	Foreign funding
	Project of increasing the volume of potable water in the industrial areas	- Suez Canal Authority - national authority of Potable Water and sanitation	- Suez Canal Authority - national authority of Potable Water and sanita	**2 millions**	**2 years**	Foreign funding The general budget of the state

	Project of separate network of industrial waste treatment plant in the free zone in Ismailia	Directorate of housing and inutilities	Directorate of housing and inutilities	**10 millions**	**3 years**	Foreign funding Participation of industrial areas

4-4-6-2 Medium Projects

Name of City and Markaz	**Sub-Project**	**Agency in charge**	**Implementation Agency**	**Estimated Budget**	**Time framework**	**Funding agency**
Ismailia	Project of industrial waste treatment in the industrial area in Ismailia	-Arab Aluminum Co. - Aman company for industry and commerce	Arab Aluminum Co. - Aman company for industry and commerce	**2 m**	**2 years**	- Foreign Fund
	Project of unclear water network in the industrial area	Services committee of the industrial area in Ismaila city	Services committee of the industrial area in Ismaila city	**3 m**	**2 years**	- Foreign Fund
	Have a monitoring environmental lab.	Services committee of the industrial area in Ismaila city	Services committee of the industrial area in Ismaila city	**3m**	**2- years**	- Foreign Fund

	Natural gas to the industrial area in Qantara east	Natural gas company	Natural gas company	**12 m**	**2 years**	**Foreign funding**
	Project of unclear water network in the industrial area in the free zone	Directorate of housing and inutilities	Directorate of housing and inutilities	**5 m**	**2 years**	**Foreign funding**

4-4-7 Profile of some projects of priority

The Project of the natural gas in the industrial area in Ismailia city

Description of the problem

Some of the factories use the solar and heavy fuel which affects negative on the quality of the air and the health of the staff in the industrial area.

Description of the projects and its elements

- The natural gas network has to be built in the industrial area. All factories have to switch off the heavy fuel to use the natural gas as a friendly environment fuel. This fuel protects environment and will be less in its emissions than other kinds of fuel. There are nine factories which are in badly needed of this witching.
- The measurements have been done from some companies such as Petrogas Company but the estimated cost is over the budgets of these companies. Sweet Star Company has an estimated cost of 375,000 Egyptian pounds and Mohandess Macaroni Company has an estimated cost of 660,000 Egyptian pounds. There must be a public network for natural gas to get the benefit for all factories in the industrial area.

- **Implementing Agency of the project**
- Natural gas Company

- **Estimated cost of the project**
- Around 3 millions Egyptian Pounds
- **Funding Agencies**
- Private sector- other foreign funding donors

- Project of switching to natural gas in the industrial area in Qantara East

- **Description of the problem**
- Some of the factories use the solar and heavy fuel which affect negatively on the quality of the air and the health of the staff in the industrial area.
- Refusal of the investor to build factories since there is no natural gas for production lines
- There is no fund for implementing the natural gas network

Description of the project and its elements

- The main natural gas line (Ain El-Soukhna- Port Fouad).
- This line passes directly before the industrial area in Qantara East.
- **Benefits of the project**
- No harmful emissions from the factories.
- Pay the attention of the investors to build new factories in this area.
- Use the production lines (friendly to environment) which depend on the natural gas for operations

Implementing Agency of the project

- Natural gas Company
- **Estimated cost of the project**
- Around 12 millions Egyptian Pounds as of estimated cost of 2006 from Town Gas Company.
- The local Unit of Qantara East are ready to allocate the land for the natural gas Pressure Station

Funding Agencies

- Private sector
- Other foreign funding donors
- Social Fund

Project of Natural gas in the Free Zone in Ismailia

-Description of the Problem

Some of the factories use the solar and heavy fuel which affect passively on the quality of the air and the health of the staff in the industrial area.

Description of the project and its elements

-The natural gas network has to be built in the industrial area. All factories have to switch off the heavy fuel and use the natural gas as a friendly environment fuel. This fuel protect environment and will be less in its emissions than other kinds of fuel. The allocated area fro building this natural gas pressure station is 2500 m sq by the Town Gas Company.

The implementing Agency

-Town Gas Company

Estimated cost of the project

-Around 12 millions Egyptian Pounds as of estimated cost of 2006 from Town gas Company.

-The local Unit of Qantara East is ready to allocate the land for the natural gas

Pressure station

Funding Agencies

- Private sector
- Other foreign funding donors
- Social Fund

Project of integrated solid waste management in the industrial area in Ismailia

Description of the project

- Some of the factories throw the industrial solid waste in the roads and near the industrial area. This behavior affects the environment. There is no system foe solid waste in the industrial area.

Description of the projects and its elements

-The solid waste management system has many stages, the collection, transport and recycling. The recycling of the material such as the paper board- paper- glass- plastics- foodstuff- feline- textile- other solid waste materials can be used in recycling.

-The total solid waste is about 2 tones per day.

The implementing Agency

-Cleaning companies under the supervision of the service committee in the industrial area of Ismailia City

Funding Agencies

- Private sector
- Other foreign funding donors
- Social Fund

- Project of Integrated solid waste management system in the Free Zone in Ismailia

Description of the problem

-The accumulation of the solid waste as a result of the daily production. The solid waste occupies a very big area in the free zone. This has led to increase of insects and rodents which affect negatively on the health of the staff in the industrial area. It is also increase the risk of fire. The most difficult thing is that this solid waste can not be exited from the Free zone according to the custom house procedures.

- There is no system for disposal of the solid waste in the industrial area.
- Description of the project and its elements
- Allocation of land fill for the hazardous waste
- Facilitate the procedures of extrusion of the solid waste from the free zone.

The Implementing Agency

- The private sector under the supervision of the free zone management
- Estimated cost of the project
- Around three millions Egyptian Pounds

Funding Agencies

- Private sector
- Other foreign funding donors
- Social Fund

Project of the solid waste management in the industrial area in Abu Khalifa and building land fill in an area of 10 Feddans

Description of the problem

-Solid waste is a very big problem on the municipalities

-The random disposal of the solid waste as a result of the accumulation of waste in the streets and roads.

- The increase of the insects and rodents and bad odors as well .

- These bad effects have led to less investment opportunities in the industrial zone.

-The random disposal of the workshops in the nearby areas.

-There is no solid waste system in the industrial area.

Description of the project and its elements

- Integrated solid waste management system for collection, transport and recycling. This can be done by the following steps.
- Prepare a study for the land fill
- Prepare an engineering design for the land fill
- Prepare a condition file for the contractors
- Train the staff on the solid waste management
- Increase the environmental awareness among the staff of the industrial area.
- Provide the clean equipment and tools.

Implementing Agency

- Service Committee in the industrial area of Abu Khalifa.
- Local Unit of Abu Khalifa Village

Estimated cost of the project

- It is about 3,8 millions Egyptian Pounds

Funding Agencies

- Private sector
- Other foreign funding donors
- Social Fund
- Ministry of State for Environmental Affairs

Project of improving the industrial waste water units in the industrial area

Description of the problem

- Disposal of the industrial waste water in the industrial area by having waste water treatment units which connected to the sanitation network. Some of these units are not efficient which affect negatively on the sanitation network.
- The extension of the production lines of some factories have led to bad results of the treatment units according to the criteria of law. 93 / 1962 and decree 44 / 2000 .Most of these factories are not committed such as Arab Aluminum and Aman company for trade and industry.

Description of the project and its elements

-Industrial solid waste units are not applicable to the criteria of law 93 / 1962. Most of the factories use the sanitation network as a result of extension of their production.

Arab Aluminum Company

-The industrial waste water treatment unit capacity is 30m3 /day while the rate of industrial waste of the company reaches to 100m3 / day. There is no treatment to the sludge. The company throws the sludge on the surrounding area.

Aman Company for trade and industry

- The Company has the industrial waste water treatment unit which has capacity of 30 m^3 / day. However the production lines increase the volume of the waste water.

Implementing Agency

- Arab Aluminum Company - Private sector
- Aman Company for trade and industry- Private sector

Estimated Cost of the project

- Around 2 millions Egyptian Pounds

Funding agencies

- Private sector
- Foreign Donors

Project of building a separate industrial network connected to central waste water treatment unit in the free zone in Ismailia

Description of the problem

- The current network is used for the industrial and sanction waste

Description of the projects and its elements

- The separate industrial waste water network **treatment** unit to be used .
- Implementing agencies
- The directorate of housing and utilities
- The participation of the companies in the industrial area
- The foreign donors
-

Estimated cost of the project

- Around 10 millions Egyptian Pounds

Funding agencies

- Foreign donors
- Participation of the companies in the industrial area

The project of unclean water in the industrial area in Ismailia

Description of the problem

- There is no unclean water network to be used for watering the green water in he industrial areas. The potable water is used in watering. This has a very bad impact on the consumption of the potable water.

Description of the project and its elements

- The industrial area uses the potable water in the fire taps to water the green areas. This leads to waste of potable water. Therefore, the potable water authority has to extend unclean water

network from Ismaila canal to be used for watering green areas and to provide water for the fire taps.

Implementing Agency

- Service Committee in the industrial area in Ismailia City.

Estimated Cost of the project

- Around 3 millions Egyptian Pounds

Funding Agencies

- Directorate of Housing and Utilities
- Foreign donors
- Directorate of Agriculture
- EEAA

Project of unclean water for planting trees in the buffer zone between the industrial areas and the dwelling in Qantara East

- **Description of the problem**
- The area is in a badly need of the trees belt since there is a very strong dusty and sandy winds in the winter season. For having a tree belt, there must be unclean water network for watering the buffer zone between the industrial area and dwelling one. The buffer zone is about 130 feddans.

Description of the project and its elements

- Build an unclean water line from the waste water treatment plant.
- Build an internal network for the buffer zone
- Purchase number of trees and specify their species
- Purchase the needed tools and equipment

- Recruit the needed manpower.
- Benefits of the project
- Increase the green land area.
- Reduce the rate of pollution
- Protect the industrial area from strong dusty and sandy winds coming from the desert.
- Protect the dwelling area from the harmful emissions
- Improve the image of the area by having green land.

Implementing Agency

- Sinai Reconstruction Agency
- Local Unit of Qantara city council

Estimated Cost of the project

- Around 7 millions Egyptian pounds

Funding Agencies

- Directorate of Housing and Utilities
- Foreign donors
- Directorate of Agriculture
- EEAA

Project of Unclean water for the free zone in Ismailai city

Description of the Problem

- There is no unclean water network for watering green areas.
- The green areas are watering by potable water.
- The misuse of potable water and high rate of consumption.

Description of the project and its elements

- The industrial area in the free zone uses the potable water in watering the green areas. Although the poor pumping of drinking water, the unclean water network from Ismailia Canal will be a great help. This network has been done for the future city which was implemented by the governorate of Ismailia.

Implementing Agency

- Directorate of Housing and Utilities

Estimated Cost

- 5 millions Egyptian pounds

Funding Agencies

- Directorate of Housing and Utilities
- Foreign donors

Project of monitoring environmental lab in the industrial area

Description of the problem

- Increase of the pollutants in the industrial area. This will need to have monitoring environmental lab according to environmental law 4 / 1994**.** All the out come of the factories have to be monitored.

Description of the project and its elements

- The site of the lab available in the service committee in the industrial area.
- Availability of equipment for monitoring the air pollutants
- Availability of equipment of noise measurements
- Availability of equipment of analysis of industrial waste water
- Have a list of pollutants of waste water.
- Chemicals, glasses and freezers for samples and lab furniture.

Implementing Agency

- Service Committee in the industrial area in Ismailia city.

Estimated cost

- Around one million Egyptian pounds

Funding Agencies

- Ministry of State for environmental Affairs
- Foreign donors

Project of the environmental awareness for staff in the industrial area in Ismailia

Description of the Problem

- The law standard of environmental awareness among the staff of the industrial areas.
- The staff of the industrial area needs training workshops and courses in the industrial security and civil defense and technical trainings

Description of the Project and its elements

- Build a training center and provide it with equipment, computers, and training programs for the staff. This center will be under the supervision of the service committee in the industrial area. It has also to be in a link with the media unit EEAA.

Implementing Agency

- The Service Committee in the industrial area in Ismailia city.

Estimated cost of the project

- Around 5 millions Egyptian pounds.

Funding Agencies

- Social fund
- EEAA
- Foreign donors

Project of removing the technical workshops near Ismailia city

Description of the Problem

- The workshops have to be removed from the dwelling areas to the far area.
- The noise pollution has a negative impact on the people.

Description of the project and its elements

- The layout of the project is about 25 feddans in the future city which is far from the dwelling area.
- Building 1159 workshops with different sizes between 24m2 to 70m sq to have all the activities according to the conditions of the industrial security.

Implementing Agency

- The Governorate
- The city Council of Ismailia
- The Reconstruction and Housing Agency

Estimated cost of the project

- Around 5 millions Egyptian pounds

Funding Agencies

- Social fund
- Reconstruction and housing Agency
- EEAA
- Foreign donors

Project of building Technician area on 2800 m2 in the Sawarka in Qantara West out of the dwelling area to remove all the workshops

Description of the problem

- Workshops in the dwelling area cause much noise to the dwellers.
- It is not a civil image to have workshops in the housing area
- The random disposal of the solid waste near the dwelling area
- The assorting of the solid waste in the dwelling area as the scrapes trade.
- Increase of diseases
- Increase of insects

Description of the project and its elements

- The studies have been done on the sawarkah technicians area
- The details of engineering design of the workshops and general Planning of the entire project has been done.
- The actual number of workshops owners have been recorded
- The environmental awareness and activating the civil society

Implementing Agency

- The local unit of city and markaz of Qantara West.

Estimated cost of the project

- Around 350,000 Egyptian pounds

Implementing agencies

- Social Fund
- Foreign donors

Project of increase the capacity of the potable water in the Free Zone in Ismailia city

Description of the problem

- The area suffers from the poor pumping of potable water. This leads to more pollution. The number of workers in this area is about 20,000

Description of the project and its elements

- Remove all the outlaw buildings in the potable network.
- Coordination between the Governorate , the Suez Canal Authority

and the national authority for potable water and sanitation

Implementing Agency

-National Authority for Potable water and Sanitation

Estimated cost of the project

- Around two millions Egyptian pounds

Funding Agencies

- Social Fund
- Foreign donors.
- The state.

4-5 the environmental awareness

4-5-1 General Background

The protection of the environment is one the main challenges of today's world. It is very difficult to protect all the natural resources for the future generations. The legal environmental laws are not enough for protection of environment. All the legal actions, conferences, societies are not enough to protect the environment. The most important element is having a sound behavior from all individuals. The most impotent element is the environmental awareness that push the individual to protect the environment in the proper way. The environmental education can be the first step to let the people realize the impotence of laws and legalizations.

Although there are many environmental problems but most of them are complicated and intervened. The negative attitude of the human being has led to many accumulated problems in the environment. These lead to many complicated problems which can not be solved in short time. The solutions of these problems need more time and the beginning is the coordination for having an educational environmental awareness.

In Ismailia governorate, there are many parties that plan and implement to find solutions of the environmental problems. For instance, we have the environmental management unit, EMU, and the local media (Press-Canal broadcasting- Channel 4), the regional center for continuous development. There are other parties such as the Environmental societies associations, educational

institutes, and media centers, the rural environmental volunteers, the Agriculture guideness, medical tours and Suez Canal University.

The environmental awareness and training for building capacities is the main issue. Each institute separately or collectively work to achieve the aim of orientation of the consumption, tree planting, treatment of waste, educational health, solid waste disposal, protecting the natural resources and green areas. All this action depends on the funding agencies and some other donors.

In the environmental awareness campaigns, EMU uses the law 4/1994 to remove the pollutants, and to compliance with the environmental law. There are many special training programs spread through the media, Mosques Imams and workshops.

There is a structure of the EMU in the governorate of Ismailia. The EMU was established in 1987 to protect the natural resources if the governorate and improve and develop the ways of life in order to have a clean and safe environment for every citizen.

The EMU coordinates with other governmental agencies according to law 4 / 1994 in the governorate, it is affiliated to the governor directly administratively and it is affiliated to the EEAA technically. Ismailia governorate area is 47427 Km sq, it has five markazes. The biggest is Qanatra East, then Fayed, Then Qanatara West, Abu Sweer and Kassasseen cities, the total population of the governorate is 850,000 the density of population is 170 individual /km sq.

Therefore the EMU is very important to have general department which has many divisions to increase the environmental institutional awareness. This will lead to a kind of coordination between cities, markazes and different directorates. This also needs high quality of environmental awareness to develop and support the capacity buildings of the individuals in different divisions.

There is a shortage in having information, data about the importance of environment and environmental balance and protection of natural resources. The Environmental education will help to stop the negative attitude of the citizen. It will help the citizens to share and participate in collect the solid waste, protect the green areas and save the natural resources o the governorate.

In this part, we will show the last five year achievements, the most important issues and problems in the environmental awareness and building capacity. We will show the negative impacts and the required works and our ambitions to achieve in the next five years.

4-5-2 the achievement in the last five years

4-5-6-1 Decisions and measurements

- Open of environmental communication division in the EMU by support of the Governorate and EEAA
- establish a continuous development center by the support of the governorate
- Appoint a coordinator in the EMU and the green Corner.
- provide the EMU with legal authority in any environmental suit to Activate the law no. 4 of 1994.
- Make an agreement with the Continuous Development Center to participate In the workshops and training are to build capacity of the staff and citizens form a higher Environmental Committee

4-5-6-2 technical and administrative support

- The EMU allocates environmental commissioner to be in connecting with the NGOs working in the environmental field. EMU supports these NGOs to plan trees, have environmental competitions, cleaning streets, and have jobs to students in summer vacation, open the green corner, have a environmental library.
- Increase the environmental awareness of citizens by the media. EMU shares in the Canal broadcasting, TV Channel 4, Canal weekly magazine. EMU presents rewards with the support of the governorate.
- 100 training sessions have been made in the EMU. 20 sessions are per year to the local and people councils to raise their capacity building.
- The Continuous development center has made 10 courses to the local councils
- The EMU has been technically supported by Digital Camera, Computer, Xerox copier, printer and GIS
- The EMU has been supported by pick-up truck to be used in the spot visits and the supervision of the industrial establishments and monitoring and follow up the rules.

4-5-6-3 the implemented projects and programs

- Direct and indirect programs to the NGOs.

- Follow –up the NGOs which have got foreign donation in environmental field.
- Participate in all the meetings of environmental issues concerning all the issues of health, agriculture to eliminate the insects and rodents and crows.
- Follow-up the cities planning and the green areas and environmental engineering.
- Increase the programs of the environmental awareness in the media to the current issues such as birds flue, noise pollution, environmental compliance and genera Cleaning.
- 200 environmental sessions and workshops have been done for how to use the fertilizers in cooperation with the directorate of agriculture, biological Resistance, agriculture recycling with the EMU
- The cooperation with the EEAA regional office in Suez by providing a truck to measure the air quality in different times.
- Prepare the environmental profile of Ismilia governorate by the funding and supervision of the EEAA.
- Have GIS Unit which affiliated to the Continuous Development Center in the Governorate.

4-5-6-4 Projects and programs under construction

- Prepare the environmental action plan.
- Participate in the weekly Canal Magazine, TV Channel 4, and Canal Broadcasting by the support of the governorate and the NGOs.
- Have a link between the Continuous Development Center and the GIS unit to raise the capacity building of the staff.
- Have a link to the information network in the governorate.
- Continuous Environmental campaigns and legal action to have fins against the smokers in the buildings and public places.
- Continuous cooperation with the directorates of health, agriculture, housing, Veterinary, media, Youth and media concerning the birds' flue

- Have an agreement with the Continuous development center to participate in the training courses and workshops in the institutions.
- Have a plan to raise the environmental awareness and training in the next five years according to the action plan.

4-5-3 the current situation: problems and Causes

Current situation	Problems and their passive effects	Causes of the problems	Plans and programs in the current situation
There is no action plan with integrated vision for environmental awareness	- Focus on the needed areas to increase environmental awareness - Non potentiality of the follow up the environmental campaigns - Poor funding -The gap between media and implantation	- Increase of prices of the commercials - On integrated plan with time schedule -No funding - No experiences for having plan in this field.	- The budget of the state -The foreign donors - The self funding - The meetings of the higher environmental committee
The spread of negative behavior among different segments in the society	- No interest in paying attention to the environmental values. - No attention to the spirit of teamwork - Open fire of the solid wastes in the streets - random markets - Throw the solid waste in the canals and drains - smoking in the public places -No integrated system of environmental awareness	- Increase of slim areas in Ismailia -Limited number of environmental awareness campaigns - No Fund	- The participation of the other concerned agencies in the environmental awareness- Raise the capacity building of the staff
The poor planning of the EMU	- No integrated environmental plan to raise the environmental awareness	-No fund -No skills in environmental awareness -No concrete goal	- Prepare advanced sessions in the EMU - Raise the environmental awareness of staff
Poor structure of the EMU in Cities and markazes	- poor potentialities in the EMU - no goals for any campaign	-No skills -No structure -No care of higher environmental committee	No actual plan, program or project for environmental awareness

4-5-4 vision and goals

The raise of the environmental awareness to the people of Ismailia

- The integrated system of environmental awareness in the governorate
- The institutional support and capacity building to EMUs in all levels of the governorate

4-5-5- the goals and required works

The main goal	Goals in the next five years	Decisions & measurements
Integrated vision preparation to the environmental awareness in all levels of the governorate	- Prepare an action plan to raise the environmental awareness in the governorate. - Help the community by increase the value of the environmental awareness by showing the environmental problems	- Prepare a plan for the capacity building in all levels - Prepare plans, programs foe environmental awareness in all the governmental agencies. - Provide funds for implementing the programs
- institutional support for capacity building in all EMUs in the governorate	- Prepare training sessions for the staff in the EMUs -Support the EMUs financially and technically	- Prepare a plan for the capacity building in all levels - Prepare plans, programs foe environmental awareness in all the governmental agencies. - provide funds for implementing the programs
Environmental Awareness of the staff of the industrial areas	-Prepare a plan for Environmental Awareness of the staff of the industrial areas	Prepare a vision of project and submit it to the funding agencies. -Prepare a plan for Environmental Awareness of the staff of the industrial areas

4-5-6 **List of the sub- projects in the five year plan**

4-5-6-1 **High priority projects**

Name of City and Markaz	Sub-Project	Agency in charge	Implementation Agency	Estimated Budget	Time framework	Funding agency
All Ismailia Governorate	Raise the environmental awareness among different segments of the society	Broadcasting T.V. Press Mosques NGOs in the environmental field	Broadcasting T.V. Press Mosques NGOs in the environmental field	**2millions**	**5 years**	- Foreign funding - investors society EPF

4-5-6-2 **Medium Priority projects**

Name of City and Markaz	Sub-Project	Agency in charge	Implementation Agency	Estimated Budget	Time framework	Funding agency
All Ismailia Governorate	Raise the environmental awareness among in the industrial areas among the staff		**- Governorate** **- NGOs** **- EEAA regional office**	**One million**	**5 years**	- Foreign funding - investors society EPF
All Ismailia Governorate	Raise the capacity building of the EMUs	EEAA	EEAA	**2millions**	**3 years**	- Foreign funding - investors society EPF

4-5-7 Profile of the some of the priority projects

The project of the raise the environmental awareness among different segments in the society of Ismailia

Description of the problem

- The risks which face the human being as a result of the increase of population
- The poor services and utilities
- The accumulation of the solid waste
- The less water resources
- Increase of insects and rodents
- Negative impacts on the health of citizens

Description of the project and its elements

- The awareness of the environmental law and all its terms
- The harms of smoking
- The pollution of the coasts
- Pollution of the water resources
- The harmful impacts of chemicals and insecticides
- The harmful impacts of solid waste accumulations
- Prepare environmental awareness sessions for parents and youth centers
- Prepare environmental competitions in schools to solve the environmental problems
- Prepare trips and tours to the students to know more about the environment of the surrounding area of Ismailia
- Distribute metal containers in the districts and villages
- Increase the awareness by advising the different criteria about the environmental risks.
-Prepare specialized environmental library in schools and youth centers
-Prepare environmental fairs showing the environmental activities
-Form environmental awareness groups in schools and youth centers.
-Prepare the equipment for the sessions such as computers, printer, and Xerox copier.

The target segments

- Schools students
- Youth in youth centers
-Different segments in the society

Implementing Agency

- EMU
- NGOs in the field of environment

Estimated cost

-Two millions Egyptian pounds

Funding agencies

- Ministry of Media
- Ministry of State for Environmental Affairs
- Foreign donors

Project of raise the environmental awareness of the staff of Industrial establishments

Description of the problem

- The limited environmental awareness to the factory owners and staff
- The non commitments of the staff of all protection instructions.

The description of the project and its elements

- Prepare the training courses to the owners and staff of the factories
- Prepare training sessions to the factory owners to comply with environment law
- Prepare the training courses with printing materials and stickers

Implementing Agencies

- The management of the industrial areas
- EEAA

Estimated cost of the project

- Around one million pounds

Funding Agencies

- Ministry of Media
- Ministry of State for Environmental Affairs
- Foreign donors

Project of capacity building of the EMUs in all level of the governorate

Description of the problem

- The limited skills and experiences in the environmental field
- The limited ability of the decartelized EMU

Description of the project and its elements

- Prepare specialized training sessions to the staff of EMUs
- Support the EMU with media devices to perform its duty
- Prepare the scientific materials for these sessions

Implementing Agencies

-Ministry of State for Environmental Affairs

Estimated Cost

Two millions pound

Funding agencies

-Ministry of state fro Environmental Affairs
- Foreign donors

5- The required works to raise the environmental awareness in the entire governorate

All the environmental awareness campaigns have to be planned. They have to target all the different sectors of the society. The programs and the new concepts have to support the main goals in the environmental action plan. This may take much time. It needs strong financial support. In the early stages, the environmental awareness campaigns have to deal with the environmental prior issues in the environmental action plan of the governorate.

The general awareness can be done through the media, Directorate of Education, schools, and youth centers, and all the organizations of the civil society and the staff of the industrial areas.

These campaigns can support easily the environmental action plan because they have the marketing tools which promote to the campaigns. The media, video tapes, stickers and the meetings with the religious figures can affect easily in people and push them to cooperate with these campaigns. The campaigns of planting trees and cleaning streets under the supervision of the governor of Ismailia will help to do something in the environmental awareness. At the same time, the fund from donors and investors will be a great push to such campaigns.

The target to raise the environmental awareness has to go to students in schools and universities. The youth is the future generation in the governorate which can protect the environment as a first step in their practical life. The EMU has to raise the environmental awareness of professors of the university and teachers of the schools. They have to share effectively in the environmental action plan.

There must be a sort of coordination between the central department of environmental awareness in the EEAA and the EMU in the governorate. This can be done by close follow up and technical support from EEAA. The researches and studies in this field will help a lot in increase and improve the ways of dealing with people and will have strong impact in the long run.

6- The institutional support and capacity building of the Environmental Management Unit in the Governorate

6-1 The institutional support and the capacity building

The successful implantation of the environmental action plan of the Governorate will lead to the proper use of all the available resources .This will require more investments for the basic structure of the governorate. Both of the two elements will help to improve the institutional structure to implement the action plan.

The governorate has set up the Environment higher Committee by the decision 62 / 2005, this committee will have the right to steer the environmental action plan in the governorate. There are also the EMUs on all levels of the governorate. The other governmental agencies such as health, irrigation and housing have other responsibilities to deal with this action plan. Therefore, the support of these ministries has to be effective. Moreover, the private sector, the NGOs and civil society have another role to do in this plan.

6-2 The planning and the environmental management

The decentralized system in management will be very effective in the environmental work. All the environmental works will be under the supervision of the higher Committee of Environment in the Governorate. This committee will follow up and update the system and plan with the EMU the environmental actions and coordination. It will have many tasks to do as following:

- The strategic planning for guarantee the sustainability of development according to the environmental criteria
- The application of the land use according to the environmental laws and EIA.
- The coordination among the different working groups to improve the environmental service and protect the natural resources of the governorate.
- Raise the environmental awareness and the participation of the community in the environmental issues.
- Capacity building thought training, and guide services.
- Try to find available fund for finance the environmental works according to the action plan.
- Support the environmental action plan and guarantee its sustainability.

The backward of the importance of the institutional support

- The development of the planning system and EMU on the level of governmental Agencies, private sector and civil society

- The commitment of application of the environmental action plan from the higher committee of environment.
- The coordination between the concerned groups for the suitability of the environmental action plan.

The environmental system does not increase the bureaucratic measurements.

It depends on the decentralization of the EMU which consists of

- The strategic priorities of the environmental action plan in the governorate.

It can prepare the programs, budgets and allocation of the resources.

- The support of the coordination and cooperation between the different sectors in the governorate,
- Have good connected with the EEAA to magnify the local incomings in the national environmental action plan.
- Follow up the implementation and updating of the environmental action plan in the governorate.

-Play the constancy role for the governor in the environmental issues.

There are initiatives which lead to the decentralization of the EMU as follows:

- The draft of the switching all the EMUs in all governorates to general departments for environmental affairs. Some of the governorates have already switched the EMUs such as Red Sea, New Valley governorates. This shift will give more flexibility in dealing with the environmental issues. It will support the decentralization of administration.
- The comprehensive coordination of the environmental activities with the EMUs in the cities, villages and markazes. It includes the office of media complains of environmental issues. The environmental monitoring and follow up will deal with these issues.

6-3 The main directorates concerning with environment

The planning of the EMU is based on decentralization. It helps to coordinate and cooperate the different directorates in the governorate .The following table clarify the matter.

Table (6) the main directorates and their responsibilities on environment

Directorate	Environmental Responsibilities	Coordination with other agencies
Ministry of Water Resources and Irrigation	-Application of law 12/1984 of irrigation, sanitation and other related issues - Distribution and supply of potable water and unfiltered water - Providing sufficient water to the agricultural lands -Cleaning the canals and drains -Renewal and replacement of the old networks by new ones -Application of law 48 by joint inspection with the water resources Police	- Directorate of Health to measure the quality of water - Raise any problem concerning the water quality to the central Ministry -Raise all fines and breaking law no. 48 to the EMU in the governorate -Raise the problems of irrigation to the central Ministry of Water Resources and Irrigation
Ministry of Housing and national Authority of Sanitation	-Application of law 93 of 1962 concerning the sanitation and the decisions of waste water treatment service according to the Egyptian law -Encourage the reuse of the waste water treatment and sludge. -Provide enough utilities for the treatment of the industrial waste water - Provide the sanitation network for the household and industrial use of the water according to the Egyptian Criteria - Prepare the small and big sanitation projects by the central Ministry and the concerned departments in the	- Health directorate affiliated to the industrial waste according to the sanitation - the directorate of Health and Population has to test the potable and waste water on behalf of the EMU and the sanitation - transfer all the fines and lawbreakers to the Water Resources Police

	Governorate The Markazes heads have to supervise any project -Heads of Markazes have to check the leakage, old and used up pipelines, the odors of waste water treatment units and pollution of the untreated water.	
Ministry of Agriculture and Reclaimed lands Directorate of Agriculture	- Application of law 53 of 1966 and the other decrees - The Agricultural cooperative Societies have to deal with the marketing, Financial services, Agricultural fertilizers -Helping the agricultural sector in fighting diseases. -Protecting the soil quality (have tests on the soil) -Encourage reclaiming lands - Management of cleaning the irrigation and sanitation with cooperation with the Ministry of Water Resources and Irrigation -Provide data ,information, training, agricultural guide ness service to farmers	Ministry of Health and Population and the Develpoing Exports Authority have to monitor the quality of the agricultural production The directorate has to provide the EMUs with all the environmental fines.
Ministry of Health and Population and directorate of Health	- Have samples of potable water, waste water treatment units , the water of sanitation , canals and drains -Analysis of the samples -Analysis of the industrial waste water	- in case of having any problem in the potable water quality, there must be a committee of the EMU , Potable Water Company (Directorates of Health, Population and Housing and

	and other pollution resources -Air quality monitoring -Implementing the vaccine programs against any sort of infections -Directorate is not directly responsible of implementing the law.	Utilities have to be involved). The samples have to be taken from the catchments to of Nile River to the central Ministry. The Governorate has to be informed and advised in case of having any problem in the water quality.

4-6 the institutional support from other agencies

The institutional support is not only by the governmental agencies, but it is also by the NGOs, educational intuitions, private sector to support their abilities in the fields of planning, and environmental projects. These initiatives have to be encouraged by the environmental staff in the professional trade unions to support the environmental issues in different fields.

5-6 Training

The preparing and implementing the training programs is one of the most important tools to be implemented in the first two years of the environmental action plan. The training programs have to deal with the intuitional support in different types. Different sorts of environmental specialization in various governmental agencies have to get the required training. There must be environmental training unit which consists of two members to cover all types of environmental services such as protecting natural resources, skills of communication...etc. This unit has to have links with EEAA University of Assyuit, private sector and foreign donors to have financial support.

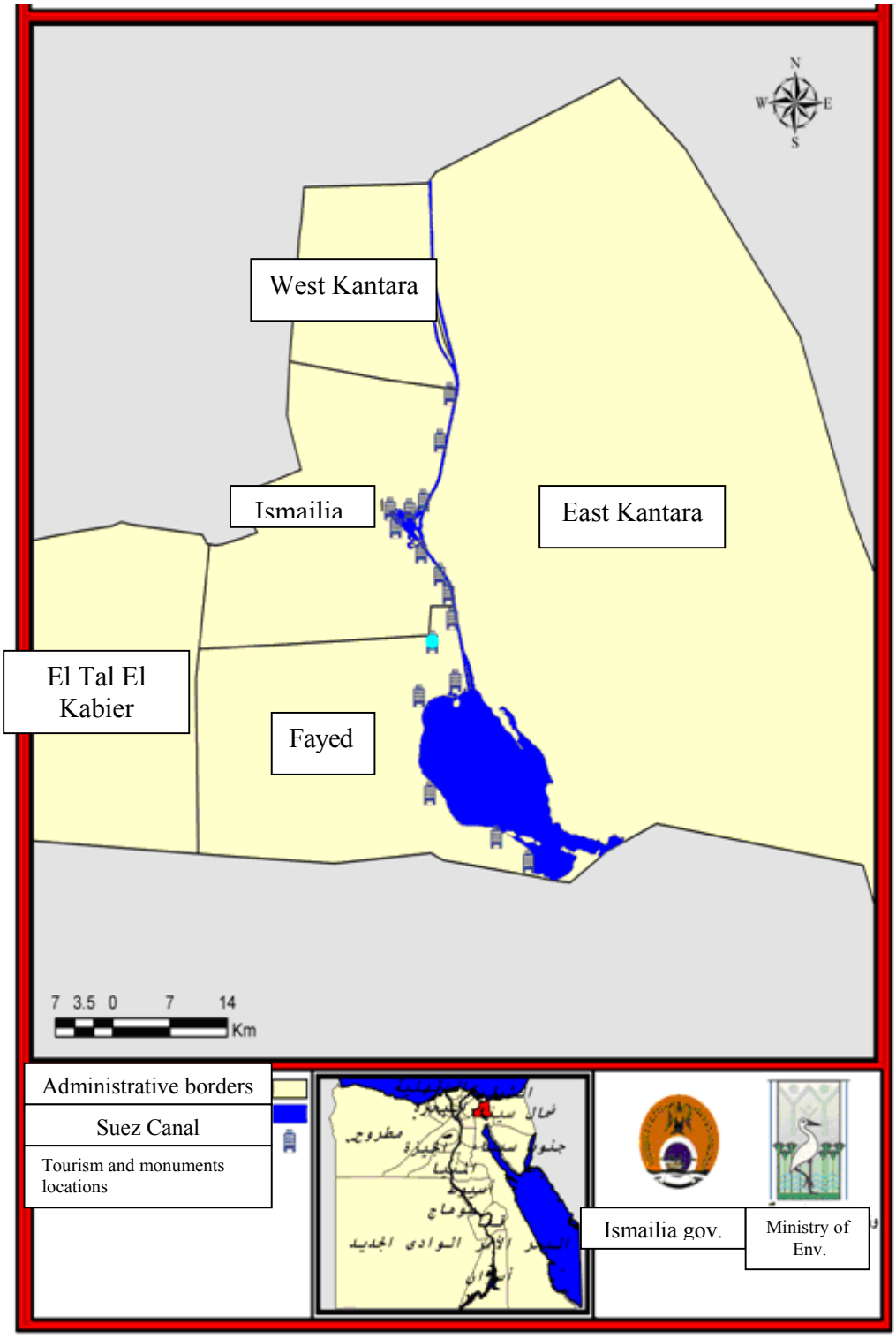
The needs of the environmental training for the different directorates

Directorates	Training needs
Agriculture	**-** The use of chemicals, fertilizers and organic alternatives - Raise of Agricultural crops in the newly reclaimed areas - Environmental awareness
Water resources	**- Irrigation** - The Private department for water distribution

	- The consumption of different crops -The benefits of irrigation and water orientation -Sanitation - The renewal and replacement of old networks - Using the best ways of irrigating. Sanitation and agriculture tenders in the reclaiming areas. -Environmental awareness
Potable water and Sanitation	- Operating and maintenance of the waste water and sanitation - Measure the level of leakage and lick age -Techniques of reduction the waste water - Training the chemists to test the water quality - Environmental awareness
Solid waste management	- Capacity building of the managers and staff in the different departments of the solid waste. - Improving the environmental awareness of the solid waste problems -Recycling of the solid waste - Participate of the private sector in the solid waste management -Environmental awareness

The most important tourist sites of the heritage of Ismailia

7-



7- The roles and responsibilities

The environmental objective in the environmental action plan is clear in the following table. The EMU has to coordinate in the policies and monitoring of the results and achievements of the environmental issues.

Table no (7): responsibilities of implementing the environmental action plan in the governorate of Ismialia

Issues and goals	The main agencies	The responsible agencies
Sanitation		
Extension of the sanitation services on all the urban and rural areas	The holding company of the potable water and sanitation	Ministry of housing and utilities
Institutional support to the different sectors	City councils, village councils, The holding company of the potable water and sanitation	Ismailia governorate EMU
Magnify the reuse of the waste water treatments and sludge	Directorate of Agriculture, The holding company of the potable water and sanitation	EMU, Agricultural cooperative societies, agricultural guideness staff
Solid waste management		
Integrated strategy of the solid waste in entire governorate	**EMU**	City councils, village councils, and civil society
Improve the operation and maintenance of service and utilities	City councils, village councils, and civil society	**EMU**
Improve the current management of the solid waste	City councils, village councils, and civil society	**EMU**
High quality system in the waste water treatment	City councils, village councils, and civil society	EMU and directorate of Health and Population
Safe recycling of waste	City councils, village councils, and civil society	EMU and directorate of

		Health and Population
New system of treating the hazardous waste	City councils, village councils, and civil society	EMU and directorate of Health and Population
Improve the institutional system and capacity building of staff	City councils, village councils, and civil society	Ismailia Governorate
Water supply and water quality		
Cover the service in all places and increase the capacity to fulfill the expected requirements	National Authority of Potable water and sanitation	National Authority of Potable water and sanitation City councils, village councils, and civil society
Improve the water quality service according to the Egyptian criteria	National Authority of Potable water and sanitation	National Authority of Potable water and sanitation
Raise the collected fees to reduce the loss in the networks	City councils, village councils, and civil society	National Authority of Potable water and sanitation
Build the intuitional capacity to improve the management of the water service	City councils, village councils, and civil society	National Authority of Potable water and sanitation
Water resources		
improve the water resources and ground water	Ministry of irrigation and water resources	EMU
Improve the efficiency of the water resources and ground water	Ministry of irrigation and water resources and directorates of Health	EMU
Reduction of water pollution and ground water	Factories, EMU, Directorate of Agriculture, Public works, Health	EEAA, Water resources Police

Agriculture		
Improve the efficiency of the soil and irrigation	Directorate of Agriculture	Ministry of Irrigation and Water resources
Magnify the use of chemicals and insecticides	Directorate of Agriculture	Ministry of Agriculture and Reclaimed lands
Improve the fisheries production	Directorate of Agriculture	General Authority of Fisheries
Reduction of the waste of harvest	Directorate of Agriculture	Ministry of Agriculture and Reclaimed lands
Improve the intuitional management	Directorate of Agriculture	Ismailia governorate
The industrial abatement		
Storage of dangerous materials , safe disposal of hazardous waste	Factories , EEAA ,EMU	Directorate of Health, Directorate of manpower
Reduction of the harmful emissions of the big factories and coal burning ovens , brick factories	Factories	EMU , EEAA
Increase the governmental capacity to deal with the industrial abetment	General economic authority ,city and villages councils	Ismailia governorate , EMUs
Low environmental awareness		
Increase the environmental awareness among staff in the governmental agencies and Ismailia governorate	Ismailia governorate ,EEAA, Directorate of Education	City councils, village councils, and civil society
Improve the service to the people and proper	Holding company of Potable water and Sanitation	Holding company of Potable water and

performance		Sanitation and Directorate of health
Natural Resources		
Support of the planning operations in mines and quarries	Department of Mines and Quarries	Ismailia governorate
Support of the capacity of Department of Mines and Quarries and EMU	Department of Mines and Quarries and EMU	EEAA
Improve the studies of EIA	EMU	EEAA
Reduce the impact of mines and quarries	EMU	EEAA
Cultural Heritage		
Support of management of the cultural sites and the environmental sites	Antiquates Department	Ismailia Governorate and the Higher Council of Antiquates
Support the capacity building	Antiquates Department	Ismailia Governorate and the Higher Council of Antiquates
Protect of the cultural heritage	Ismailia Governorate	the Higher Council of Antiquates
Protect of the antiquates sites	Antiquates Department	Ismailia Governorate
Protect of bio diversity		
Program of protect the bio diversity and environment	Ismailia Governorate , Directorate of Agriculture , EEAA, Directorate of Education	City councils, village councils, and civil society
Department of Natural Protectorates	Ismailia Governorate Directorate of Agriculture EEAA	Village councils

Reduction of the environmental risks	Ismailia Governorate Directorate of Agriculture EEAA	Village councils

8- Funding and implanting the action plan

8-1 the administrative agencies

The practical solutions and reduction of cost have been considered in the environmental action plan. The limited financial resources are the main obstacle to achieve the improvements and development. The five main issues required a quick implementation.

- The improvement of sanitation
- The development of the solid waste management
- Improve the supply and water quality
-The reduction of the industrial abatement
- Raise the environmental awareness

The governorate has to finish the preparation of the environmental action plan. It has to connect with the different directorates and concerned agencies to deal with the priority issues. There must be a link between the different agencies and the EMU to make a link between the joint environmental activities concerning the estimated cost, the implementing agency and the funding agency. For instance, we may give priority to provide the main governmental service more than the investment service.

The governorate has to start by having some indicators which show the environmental action plan activities. The directorates and private sector may have some individual vision to some issues, but the coordination will help to use properly the natural resources of the governorate.

The priories of the action plan will direct the governorate resources to the right direction on all levels, such as the NGOs and civil society. The environmental action plan will direct the fund to the most prior projects. The raise of the environmental awareness will help in understanding the main environmental issues and how to tickle them.

The governorate has to support the private sector in proper way. The supply of the entire infrastructure will help in reduce the financial burden on the governorate and will help to improve the quality of service and cover all the envier mental services.

8-2 The funding institutions and the foreign donors

The governorate has to deal with the funding agencies both locally and internationally. These agencies can provide fund for the most prior projects in the environmental action plan. The table (8) will clarify the foreign donors on the environmental action plan

The name of the donor	The scale of work
DANIDA	Support the EMU by equipment and capacity building
Terdsoum	Implement sanitation projects in the poor villages and support the rural women
CENACT	Support 8 NGOs with solid waste projects
Italian donation	Implement infrastructure and social development in Halwas and Bahteemi Villages

The governorate and the foreign donors fund many projects in the potable water and sanitation. For this reason, six environmental projects have been selected by CENACT to share of the NGOs in solving the environmental problems

8-3 The funding agencies and the local funding agencies

The participation of the governorate in prepare the environmental action plan is one of the main elements of activity of the government. The governmental representatives in participate in the environmental profile. They have already showed the prior projects each in his different field. Ismailila governorate has formed the higher environment committee to supervise the environmental action plan. And revise the performance regularly.

8-4 the private sector

The private sector plays a vital part in helping to implement the environmental action plan. This role has to be increased. The Governorate has to encourage the private sector to share more in the environmental projects such as solid waste, potable water supply and waste water treatment. At the same time the governorate has to encourage the investment sector to deal with the other environmental issues.

The environmental action plan has o help the current factories to improve the methods of industrial process in order to protect the environment, staff health and the near dwelling areas.

8-5 the non governmental organizations

There are more than 1000 NGOs in Ismailia governorate. Some of them work in the field of environment. The aim of these NGOs is to improve the environmental circumstances in their own local communities. During the last five years the NGOs have paid the attention of the foreign donors such as the Egyptian-Canadian Fund which has funded many NGOs in the environmental field.

9- The participation of the national and international issues

The environmental action plan will help to improve the environmental circumstance in the governorate. These problems are some of the national problems according to the national environmental action plan NEAP in 1992. This will go on the same direction with the international environmental problems. This will help to improve the way of life of citizens. Egypt has tried to fulfill all its international obligations according to the 21st international agenda of Rio Conference.

10 The follow-up and evaluation of the implementing plan

10-1 The prior projects to be implemented

The environmental action plan has been designed to measure the regular follow-up. The activities which related to the prior environmental projects have been remarked. There must be an active system of follow–up and monitoring to measure all the activities. For instance, if we want to measure the current development in the solid waste management system, we have to

consider all the indicators which can be measured such as the volume of solid waste per day, the number of land fills

The water supply is such as (The length of the pipelines–the collection fees). This can be done by giving financial reward and incentives to the staff.

It is expected that the leading organizations in the environmental field can share in this activities and achieve the main targets. We must not forget the main role of the Environment Higher Committee which is responsible of follow up and updating the environmental action plan according to the circumstances

10-2 The annual evaluation

The current situation of environment report has to be done annually and submitted to the higher environment committee. It must have a brief data about the following:

- The environmental achievement which have been implemented
- The improvement in the environment as a result of the environmental action plan
- The areas which need more attention in the environmental works.
- The changes which happened due to some environmental works

There must be a coordinator of the environmental action plan appointed by the EMU in the governorate to prepare this annual report. It is also expected that the environmental action plan unit support the work of the coordinator. At the same time, those who work in the governorate are part of this system. The NGOs, private sector and the civil society has to share in the annual evolution process.

10-3 The environmental action plan as a continuous process

The environmental action plan has to be flexible and active to be sustainable. It has to be updated, and it has to go with the main goals and policies of the environmental activities according to the local activities.

11- The risks of un-implementing the projects

The environmental improvements are parts of our economic world. Ismailia governorate has increased its industrial and agricultural productions to fulfill the increase of population. The result will be that more environmental problems will be occurred. If we don’t have the required

measures in time, the results will be dramatic in the future. The possible risks on the people of Ismailia are the following:

- The negative impact on health
- The deterioration of the natural resources
- The increase of the cost of the essential services
- The misuse of positive environmental activities may lead to bad impacts on the market

12 - Conclusion

All the concerned parties participated in the environmental action plan agreed on

- The prior issues
- The activities and actions to be taken on the level of the governorate, villages, industrial sector, private sector and NGOs
- The required needs of the institutional support to all main parties.
- The environmental awareness and required programs
- The tasks of the main agencies.
- The need to have accurate budget to all activities
- The follow-up and evolution of all the environmental activities.

All the concerned parties will participate in implementing the activities and the environmental action plan. The table shows the benefits of the environmental activities and how the main and secondary parties may get from this action plan.

The fifth section points out to the quantities of benefits which may be gathered from the environmental activities

The required benefits from implementing the environmental action plan

The benefits
- Improvement of the health / reduction of death rate - Better level of training and experiences to staff of the EMU and Environmental guide - The feeling of belongingness / cleaning the streets - Reductions of the environmental risks - Have good trainings of the environmental issues - Wide scale of people participation - Have a good opportunity for net benefits of projects - Create job opportunities - Increase the opportunities of funding from foreign donors - Increase of receiving economic revenue from the infrastructure. - Technology transfer will be easier - Improve and availability of the irrigation water. - Protection of the fisheries and its stock. - The cleaning and purifying the canals and drains from weeds - Improve of agriculture lands sanitation and soil

13-Annexes

13-1 annexes (1) lists of the work groups and workshops which had been implemented during the preparation of the environmental action plan

13 -1-1 Solid and Healthcare Waste Group

S. No.	Name	Work	No. of work shops	Date
1	Dr. Hassan El-Qarmani	Directorate of Health and Population	5	8/7/2007 10/7/2007
2	Eng. Ahmed Abdual Rahman El- Bosely	Abu Sweer city	5	22/7/2007
3	Mr. Ramadan Iman Ali	City and Markaz of Tal Kebeer	5	13/8/2007
4	Ms. Bahia Haman Darwish	Directorate of Social solidarity	5	22/8/2007

13-1-2 the potable water group

S. No.	Name	Work	No. of work shops	Date
1	Eng. Samir Awad Refai	National Authority of Potable Water and sanitation	6	8/7/2007
2	Eng. Abdula Aziz Abdul Salam ELKarkary	City and Markaz of Ismailia	6	10/7/2007
3	Mr. Nesseim Abdul Malak	New Kassasseen City	6	٢٤/7/2007
4	Ms. Kahdja Soliman	City and markaz of Fayed	6	٣١/٧/2007
5	Eng. Sayyedah Badwy Rashedy	Directorate of housing and utilities	6	١٣/8/2007
6	Mr. Hassan Abdul Latif	Abu Sweer city	6	21/8/2008

13-1-3 the sanitation group

S. No.	Name	Work	No. of work shops	Date
1	Eng. Samir Awad Refai	National Authority of Potable Water and sanitation	6	8/7/2007
2	Eng. Abdula Aziz Abdul Salam ELKarkary	City and Markaz of Ismailia	6	10/7/2007
3	Mr. Nesseim Abdul Malak	New Kassasseen City	6	٢٤/7/2007
4	Ms. Kahdja Soliman	City and markaz of Fayed	6	٣١/٧/2007
5	Eng. Sayyedah Badwy Rashedy	Directorate of housing and utilities	6	١٣/8/2007
6	Mr. Hassan Abdul Latif	Abu Sweer city	6	21/8/2008

13-1-4 Water Resources and Coastal Areas

S. No.	Name	Work	No. of work shops	Date
1	Eng. Saeed Mousa Ibrahim	Directorate of Water Resources and Irrigation	6	٥/7/2007 10/7/2007
2	Eng. MagdaHKassebah	City and Markaz of Ismailia	6	١٩/7/2007
3	Eng. Nabawi Ahmed Behairy	Authority of fisheries stoke	6	13/8/2007 15/8/2007
4	Dr. Sahar Ahmed El-Shatwoury	Faculty of Science, Suez Canal University	6	20/8/2007

13-1-5 industrial abatement

S. No.	Name	Work	No. of work shops	Date
1	Eng. Mohamed El-Sayyed Ahmed	Industrial area in Ismailia	7	5/7/2007 10/7/2007
2	Eng. Magdah Kasseibah	Industrial area in Ismailia	7	18/7/2007
3	Eng. Youssry Abdul Rahman El-Segaai	Public Free zone in Ismailia	7	25/7/2007 1/8/2007
4	Eng. Elia Abdula Satar	City and markaz of Qantara East	7	13/8/2007 19/8/2007
5	Eng. Jehan Abdula Nabi Abudoh Belal	Stoical development fund	7	18/10/2007

13-1-6 the environmental awareness group

S. No.	Name	Work	No. of work shops	Date
1	Ms. Habiabah Eid	Palm trees Club in Ismailia	5	5/7/2007 10/7/2007
2	Ms. Magdah Attah	Canal Press in Ismailia	5	5/8/2007
3	Mr. Mohamed Hassan Mohamed	City and Markaz of Qantarta West	5	13/8/2007 26/8/2007

13-2 annex (2) the profile of the industrial areas in Ismailia

Name of the area	The area	location	sanitation	Solid waste	Total	Work	Out of work	Under construction	Type of factories
The first industrial area	365 Faddan	West of Ismailia city	Available	Insufficient	56	31	11	14	Food, meat fish factories
The second Industrial Area	170 Feddan	West of Ismailia city	Available	Insufficient	114 97	71 71	20 23	33 3	Freezers for food stuff Plastic industries Ready-made clothes
The Public Free Zone	775 Feddan	West of Ismailia city	Available	Insufficient	37	24	----	13	Furniture, cars maintenance, Crystals, Marble, shoes, leather products, paints industries Plastic , Ready-made clothes, chemicals, mantels, solar cells industries
Technology Valley	16,500 Feddan	K 3- 14 K	--------	---------	----	----	----	Under construction	High advanced technology Genetic Engineering
Industrial Area in Qatara East	910 Feddan	One kilo of dwelling area	Available	Available	75	40	11	24	Wood, Plastic, electric appliances , metal and

									textile and weaving, chemical, Foodstuff ,Leather , Cosmetic ,Marble industries
Industrial Area in Abu Khalifa	19 Feddan	2 kilo of Dwelling area	Under construction	Insufficient	100	----	100	-----	----
Industrial Area in Qatara West	22 Feddan	One Kilo of Dwelling Area	Insufficient	Insufficient	----	----	----	Under construction	----

13-3annex (3) the references of the environmental action plan

- The profile environment of Ismailia governorate- EMU
- The reports of Ismailia EMU
- The national Authority of Potable Water and Sanitation
- The reports of Fisheries stoke in Ismailia
- Department of Irrigation- Ministry of Water Resources and Irrigation
- The Reports of the industrial areas in Ismailia