Acknowledgement

The Environmental Management Unit in (EMU) in Menya governorate would like to thank the EEAA and Danida (Environmental Sector Program ESP, EMU component) for the support, training and supervision provided during preparing the environmental profile. The EMU would like as well to thank all the plants and divisions in Menya that provided documented information which reflects the current status of the environmental resources (human, economic and natural) under the supervision of Mr. governor and Mr. Secretary General, and the direct follow up of Mr. Deputy Secretary General of the governorate.

And while introducing this work as one of the milestones of the governorate action plan, the EMU would like also to highlight the effort of its sincere citizens who collaborated to produce this work properly seeking accuracy, scientific honesty and devotion to accomplish this hard mission that consumed too much effort.

Introduction

Menya is one of the north Sa'ed province governorates. It was distinguished, along the time, by a special geographic location the entitles it to be the Sa'ed's bride. Tourists pass by from north and south. Menya's history records pages of struggle addition to a rich cultural heritage. It brought up several great people such as Taha Hussein and Hoda Sha'rawy. Menya is considered from the agricultural governorates, however, it took several serious steps in the field of industries, through food industries, ginning and spinning and chemical industries. Investment fields and opportunities are available in the governorate, most important of which, is land reclamation.

Having both agricultural and industrial activities highlights the role of EEAA in preserving a balanced environment, as it was essential that the ministry seeks achieving balance between the community's interest through increasing development and impacts on the community's environment. After all development and environment are tightly related in all fields.

It is true that working in the field of environmental reform is a great honor for all those who participated. However, we still have a chance to receive this honor through our mutual co-operation and organization in order to achieve tangible results the citizens can actually feel on this province in all fields of environmental work.

Between our hands is a great work we are all proud of concerning the environmental profile of Menya. It wouldn't have finished without the sincere work and cooperation between all departments and bodies in Menya.

This great report is considered the basic introduction for preparing an integrated environmental Action plan in which all involved ministries an authorities take part along with the civil society and the NGOs achieving president Mubarak's saying "preserving the environment is no longer a luxurious work, but rather a necessity to protect our natural resources for the next generations.

Minister of State for
Environmental Affairs
Eng./ Maged George Elias

Preface

Through the different historic stages that passed the Egyptian civilization, Menya was known to be an effective element from the very beginning until now. It played a distinguished role in the field of pioneer variant thought. It is also known with its unique location that connects between north and south the country, such thing is proved in the various monuments that represents all the historical eras that passed the Egyptian civilization. Menya continued its gifting through history represented in great figures who held the torch of though and civilization, such as Akanaton, the first pharo who called for Tawheed along with his wife Nefertiti who represents the head of wisdom. Such head was taken as the motto of Menya governorate. Hour Moheb, Egypt's ruler in the modern pharonic state, Emam kortoby who wrote the collective explanation of the Qra'n rules, Emam el-fouly one of the religious figures. Dr. Taha Hussein, the dean of the Arabic literature and other distinguished authors, Mrs. Hoda Sha'rawy the pioneer of the women rise in Egypt. There are also the heros of the people's resistance in Malloy, Dei Mowas and Odwa along with those who took place in 1919 revolution.

Agricultural activity represents the base of the economic base in Menya. Industry is considered an essential activity in the structure of the economic activity, it is the dynamic component in developing the governorate and a main factor in the governorate's economy towards achieving the biggest possible amount of variance.

Industry Menya depends on modern workshops and traditional light industrial plants of limited production. The no. of such plants reaches 7230 plant of different production holding about 27 thousand worker. Modern industry has known its way to Menya after establishing the industrial zone east of the Nile over an area of about 1516 feddan. The total no. of projects that reached production stage reached 71 project in various activities with an investment cost of 278.339 million pounds, holding 5677 job opportunity in addition to 91 under construction project with preparation investment of 541.444 million pounds providing about 7174 job opportunity.

Mr. / Fou'd Sa'd Eddin

Menya's Governor

Introduction

The environmental profile of Menya is a result of a fruitful cooperation between both the Egyptian and the Danish governments the Environmental support program (ESP) that was launched in 2004 and aims at supporting the country's efforts to accomplish its environmental goals and develop the environmental management to elevate the environmental status.

The program provides technical and financial support to adjust the environmental conditions in the industrial plants. It also supports the decentralization of the environmental management as well as supporting the EMUs in various fields to elevate technical and management skills. Moreover, it provides the technical tools to enable it to play its role in the field of environmental work, as well as preparing the environmental profile, the environmental action slap (GEAP) and executing some environmental projects in the governorates.

The environmental profile illustrates the general features of the environmental status in the governorate; all its natural, industrial and human resources, and the connection between them to establish the sustainable development. It winds up at pointing out the environmental issues and its priorities that is considered the main pillar for preparing the environmental action plan which includes the steps towards solving such environmental issues.

It is of our pleasure that we bring out the environmental profile in such an honorable way that was a fine result of the fruitful cooperation between each of the EEAA, Danida and Menya governorate.

At the end, I would like to sincerely thank all those who participated in preparing this work.

EMU Chief

ESP Director

Prof. Fatma Abo Shouk

INDEX

1- Introduction *1*
1-1 Administrative Divisions *6*
1-2 Environmental profile *7*
a) Importance of Environmental profile *7*
b) Aims of Environmental profile
1-3 Development and Environment *8*
1-3-1 Quality of life *9*
1-3-2 Growth magnitude *11*
2- The Governorate *12*
2-1 Location and administrative boarders *12*
2-2 Natural and geographic features *12*
2-3 Population features *22*
2-3-1 Census and growth rate *22*
2-4 Social features *25*
2-4-1 Housing structure and style *25*
2-4-2 Age and Gender *25*
2-4-3 Education *26*
2-4-4 life conditions and services *28*
2-4-5 Health *31*
2-5 Economic features *38*
3- Natural Resources *41*
3-1 Introduction *41*
3-2 Geology and nature of the land *42*
3-2-1 Geological status of Menya *42*
3-2-2 The nature of the land in the governorate *43*
3-2-3 Geology and its relation with earthquakes *43*
3-3 Water Resources *47*
3-3-1 Surface water resources *47*
3-3-2 Ground water resources *60*
3-3-3 Untraditional water resources *66*
3-4 Land resources *74*
3-4-1 Land use in the governorate *74*
3-4-2 Land reclamation in the governorate *74*
3-5 Biological Variation *77*
3-6 Civilization and cultural heritage *83*
3-6-1 Introduction *83*
3-6-2 Monumental sites *83*
3-6-3 Main environmental issues *91*
4- Surfaces and basic structures *93*
4-1 Potable water *93*
4-1-1 Potable water supply surfaces *93*
4-1-2 Treating potable water *99*
4-1-3 Main issues for treating and distributing water *103*
4-1-4 Costs of water supply *104*

4-1-5 Environmental problems in potable water sector *104*
4-1-6 Monitoring potable water quality *106*
4-2 Sewage *108*
1- Introduction *108*
2- Sewage in cities *112*
3- Sewage in countryside *112*
4- Sewage flow rate *112*
5- Final disposal of waste water *113*
6- Environmental problems related to sewage sector *113*
4-3 Running Solid Wastes *119*
4-3-1 Introduction *119*
4-3-2 Sources of solid wastes *119*
4-3-3 Size of wastes *121*
4-3-4 Components of solid wastes *126*
4-3-5 Systems of running solid wastes *128*
4-3-6 requirements of running solid wastes *136*
4-3-7 Medical wastes *138*
4-3-8 Butcheries wastes *141*
4-3-9 Authorities responsible for running the wastes *143*
4-3-10 Legislations related to running solid wastes *143*
4-3-11 Environmental Impacts *143*
4-3-12 Health impacts *144*
4-4 Energy *146*
4-4-1 Uses of energy *146*
5- Urban Environment *150*
5-1 Introduction *150*
5-2 Suggestions of new cities *151*
5-3 Population areas, present cities and villages *158*
5-4 New habitant communities *161*
5-5 Land uses *163*
5-6 Available urban services *166*
5-7 Main economic sectors *170*
5-8 Environmental problems *176*
5-9 Monitoring programs and environmental Observation *177*
6- Economic activities *178*
6-1 Agriculture and agricultural fields *178*
6-1-1 Introduction *178*
6-1-2 Main crops *179*
6-1-3 Main fruits *190*
6-1-4 Main vegetables *190*
6-1-5 Agricultural chemicals *193*
6-1-6 Integrated management to fight lesions *198*
6-1-7 Agricultural wastes *199*
6-1-8 Management of agricultural wastes *200*
6-1-9 Fish wealth and fish farms *201*
6-1-10 Environmental problems related to agricultural activity *202*

6-1-11 Environmental monitoring and observation programs 204
6-2 Mines and mining 205
6-2-1 Introduction 205
6-2-2 Mineral wealth in the governorate 206
6-2-3 Environmental problems related to the mining sector 221
6-2-4 Observation and monitoring programs 222
6-3 Industry 223
6-3-1 Introduction 223
6-3-2 Industrial Zones 224
6-3-3 Main industrial plants 228
6-3-4 Medium and small industrial projects 229
6-3-5 Industrial pollution 239
6-3-6 Policies of cutting down industrial pollution 240
6-3-7 Observation and monitoring programs 241
6-3-8 Environmental department in industrial zones 242
6-4 Tourism 243
6-4-1 Introduction 243
6-4-2 Touristic activities 243
6-4-3 Touristic sites and its locations 246
6-4-4 The strategic plan of tourism development 248
6-4-5 Environmental Administration of the tourism sector 250
6-4-6 Main environmental problems 250
6-4-7 Policies of protecting touristic environment 251
6-4-8 National policies to support touristic activities 253
6-4-9 Tourists' numbers 255
7- Environment quality and environmental deterioration 261
7-1 Introduction 261
7-2 Water quality 262
7-3 Soil quality 265
7-4 Air quality 267
7-5 Audio pollution (noise) 273
7-6 Environmental diseases 276
8- Organizational framework and environmental policies 279
8-1 Authorities responsible for protecting the environment 279
8-2 Environmental legislation and legal pursuit 285
8-3 Higher Committee for environment 293
8-4 Role of local community and cooperative counterparts 297
8-5 Awareness and environmental education 303
8-6 NGO's activities 304
8-7 Environmental activities in the governorate 309
8-8 International initiatives and role of donating parts 311
9- Environmental issues and priorities 314

Tables

Table (1) Administrative division of Menya Governorate	6
Table (2) monthly rates of temperature (in Celsius) as recorded in Menya Weather Station.	18
Table (3) monthly rates of relative humidity in Menya.	19
Table (4) monthly amounts of rain (mm) at Menya Weather station.	20
Table (5): annual rates of the percentages of wind direction in Menya Weather station during the year.	20
Table (6) monthly rates of relative humidity in Menya.	21
Table (7) Total cloud cover at Menya weather station.	22
Table (8) statement of death rates from 1998/2005 (rate/thousand)	24
Table (9) Statement of newly born from 1998 till 2005 (rate / thousand)	24
Table (10) population no. progress according to the educational status in the governorate	27
Table (11)	29
Table (12) waste water treatment stations	30
Table (13) Hospitals, beds and ambulances following health management or the private sector	35
Table (14): Number of doctors, technicians in health management in Menya.	36
Table (15) Gross local production , average pen capita in Egyptian pounds in Menya governorate 2003	39
Table (16) The percentage of population under poverty line in Menya 2003	40
Table (17) Reservoirs and arches regulating water distribution of the Nile in Egypt	50

Table (18) Distributing surface water according to usage in Menya governorate	51
Table (19) Results of observing and lazing waste water of Moheet drained in Menya	56
Table (20) Results of observational campaign carried by the national center of water research in 2001 (quality of surface water)	58
Table (21) Ground Water distribution.	63
Table (22) distribution of untraditional resources within the governorate.	67
Table (23) water quality results in the governorate's wells (ground water quality).	69
Table (24) Report of the samples taken from the find term in of the sewage purification stations in Menya and Abo Korkas	70
Table (25) plants and factories draining in public water paths with in consistent results Samples were talon by Health and population management in Menya from 1 – 5 04 till 30 – 6 – 05	72
Table (26) land areas (km) and their uses in Menya governorate.	75
Table (27) reclaimable desert lands along the sides of the eastern and western desert roads.	76
Table (28) Plants existing within the parameter of the governorate	77
Table (29) Mammels found in the governorate	80
Table (30) various type of binds in Menya	81
Table (31) kinds of reptiles and amphibians in the governorate	82
Table (32) kinds of fish in Menya governorate	82
Table (33) amount of sold water during 2005	94
Table (34-A) Status quo of the potable water supply in urban and some rural parts and consumption rate in 2005	95

Table (34-B) average daily consumption 2005	96
Table (36 – a) existing / suggested potable water purification Stations in Menya	100
Table (36 – b) existing / suggested potable water purification stations in Menya	102
Table (37) Determined fees of water supply according to type of plant and water use.	104
Table (40) waste water (sewage) stations, served locations, designed capacity and drainage locations	109
Table (41) under construction waste treatment stations	110
Table (42) treatment systems at the waste water treatment stations either working or under construction	111
Table (44) Main sources of industrial drainage and rate of daily drainage	113
Table (46) legal standards of reusing waste water	117
Table (47) locations and amounts of wastes and methods of collection governorate wide	120
Table (48) categorizing the domestic wastes according to teh income	127
Table (49) No. of public dumps and its area in the govenorate	130
Table (50) amount of recycled garbage at the recycling factories (garbage and agricultural wastes)	133
Tabl4e (51) Health burial grounds in the governorate	135
Table (52) Equipments, labor force and available resources to run solid wastes	137
Table (53) amounts of medical wastes daily produced in the hospitals	139
Table (54) Emissions produced from combustion of petroleum substances	150

Table (55) Size of population clusters in the urban and rural parts of the governorate	152
Table (56) new villages of the desert hinterland	154
Table (57)villages of the first stage in the desert hinterland	155
Table(58) new cities suggested in the desert hinterland	156
Table (59) new suggested hinterland cities according to the location and the area	156
Table (60) administrative division of Menya governorate	158
Table (61) land areas (km) and their uses in Menya governorate.	164
Table (62) economic features of the governorate	171
Table (63) Plants distribution according to the no. of workers.	173
Table (64) Important activities in the governorate.	174
Table (65) Categorizing the production ability of the agricultural lands in Menya governorate.	179
Table (66) Crops cultivated in Menya (crop structure in 2003).	180
Table (67) Nile and regular summer crop composition	183
Table (68-a) lasting summer and winter harvest composition for 2005	186
Table (68-b) lasting summer and winter harvest composition for 2005	188
Table (69) Important vegetables in Menya 2002/2003	191
Table (70) Total area cultivated in vegetables inside and outside the parameter of reclaimed lands during 2005/2006.	192
Table (71) Amount of agricultural chemicals used.	194
Table (72) Chemical fertilizers demand for Nile and summer crops in 2005.	196
Table (73) Organic fertilizers added annually or seasonally to the land.	197

Table (74) amounts of insecticides used in the governorate in 2005	198
Table (75) agricultural wastes of different crops (in ton) according to the cultivated areas.	199
Table (76) Fish amounts and types in 2004.	202
Table (77) no. of stone quarries and its types in Menya.	205
Table (78) Type, location and amount of ores. The total area above and under the ground. The annual production, no. of stone quarries and stock in the governorate.	207
Table (79) Type, location and amount of ore total area, annual production and no. of lime stone quarries.	210
Table (80) Type, location and amount of ores. The total area above and under the ground. The annual production, no. of stone quarries and stock in the governorate.	212
Table (81) Type, location and amount of ore. Total area, annual production and no. of white sand quarries in Menya.	214
Table (82) Type, location and amount of ore. Total area, annual production and no. of basalt ore stone quarries.	216
Table (83) Type, location and amount of ore. Total area, annual production and no. of stone are quarries.	217
Table (84) Type, location and amount of ore. Total area, annual production and no. of stone quarries.	218
Table (85) Type, location and amount of ore. Total area, annual production and no. of gypsum stone quarries.	220
Table (86) Land use distribution in the Industrial zone in Menya.	226
Table (87) Projects, investment costs and labor until the date of preparing this profile.	227
Table (88) Projects in the stage of production in the industrial zone.	228

Table (89) no. of plants, existing industries and no. of workers.	229
Table (90) Registered crafts plants and its labor in Menya.	230
Table (91) average and small industries in the governorate, illustrating the type of product, no. of workers, wastes and method of disposal	231
Table (92) Small and very small industries and crafts workshops within the governorate as well as its no. and the no. of workers involved.	237
Table (93) categorizing the tourist sites	247
Table (94) Development of hotel capacity and tourist nights during the last five years.	255
Table (95) Tourism traffic.	256
Table (96) Hotel capacity, no. of guests and touristic nights in 2005.	258
Table (97) Land classification in the governorate.	266
Table (99) sources of environmental deterioration for soil, water and air	275
Table (100): NGO's working in the field of environment and type of their projects	305

Maps

Map (1) : Administrative Borders of Menya Governorate.	15
Map (2) : Administrative Division of Menya Governorate.	16
Map (3) : Geological Map of Menya Governorate.	45
Map (4) : Topographic Map of Menya Governorate.	46
Map (5) : Water Paths and Surface Canals in Menya Governorate.	54
Map (6) : Valleys and Islands in Menya Governorate.	55
Map (7) : Waste Water Treatment Stations in Menya Governorate.	118
Map (8) : Locations of Solid Wastes Disposal.	145
Map (9): Housing Blocks and Main Roads in Menya Governorate.	160
Map (10): Important Touristic Sites.	260
Map (11): Main Sources of Water Pollution in Menya Governorate.	264
Map (12) : Main Sources of Air Pollution in Menya Governorate.	272

Annexes

Social features annex	318
Health annex	320
Civilization and cultural heritage annex	327
Potable water annex	329
Waste water annex	360
Urban environment annex	363
Agricultural annex	367
Industry annex	

1- Introduction

Menya is considered one of the leading governorates through Egypt's ancient and modern history. It was gifted by a distinguished location among the governorates of the northern Upper Egypt region. Such location reflected both negatively and positively on the features of the inhabitance growth of the governorate.

Menya lies between the two longitudes 40 28°, 37 32° east and the two latitudes 40 27°, 45 28° north. It' area is estimated to be about 32.2 79 km^2, stretching to about 135 km in length. Menya population, according to the estimated census dated 1-1-2005, is about 40 49 000. The inhabited area is estimated to be about 2.4 thousand km, representing 7.5% only of the total area, upon which lives more than 4 million people. It's worth mentioning that Menya is the second biggest populated governorate, after Giza, among Upper Egypt governorates capital. Menya is surrounded by Beni Sweif from the north Giza and El Wady El Gedeed from the west, Red Sea governorate from the east, and Assuit from the South. Menya is connected with the other governorates through regional roads and national rail way.

The rural feature dominates the governorate, with 82% of the population peasants and 18% urban. Most of the population concentrates along the Nile Valley that runs through Menya South-north. 437957 feddans are cultivated in Menya depending on the Nile's water. The rest of the governorate is considered desert the thing the makes the desert feature dominates the governorate. However, the desert of Menya is rich in various natural resources: marble, pure lime stone, loam …… etc. such desert spans have its environmental impact on the development of this region, especially the valleys with its natural gifts of groundwater, rocks,

and mineral treasures. It also has its negative impact represented in the running fluids and its major affect upon inhabitation and land use.

The historical importance of Menya goes back to the pharonic era. Tal El-Amarna village was the new capital of Akanatone within the period between 1375-1358 B.C. Akanatone and his beautiful wife Nefertiti were the first to call for Tawheed, realistic art, and discard discrimination through worshipping the sun (Atone). Agriculture, industry, fishing and sports have improved in Menya more than 2000 years B.C. Menya is known for several ancient sites from several eras, as will be explained later.

Most of the population live in the villages, rancher and hamlets that exceeds over 2000 in number accumulated in the valley whereas rarely found in the desert area. Such overcrowdings over the valley without penetrating the desert has lead the countryside people to invade the agricultural land to build houses. As much as 4.1 thousand feddans were used for such purpose. On the other hand, city people built houses an established many random regions, about 30, all around the governorate. Electricity reaches to about 94% of the families, however, lesser percentage has access to safe drinking water (about 78%). The rural regions are as not as lucky as the urban ones in receiving their share of the public utilities.

Agriculture is the main economic activity. About 2.7 million people, representing 58% of the labor force, work in agriculture 33% work in the services sector, where as 9% only work in the industrial activity.

As a result, Menya's citizens lie in the category of the low incomes relative to the general average in Egypt. Small agricultural possessions

prevail the governorate (1.94 Fadden in average). Traditional agricultural systems also prevail as well as traditional crops (cotton and grains which represent 66% of the total agricultural area, fodders and main crops that represent 16.7%) in addition to animal, poultry, fish and bee production activities. About 103 thousand fishing boat work on the Nile and the main water streams, in addition to 84 fish farm. Raising bees is also spreading in the governorate. As much as 210 thousand beehive is estimated to be found in Menya.

The services sector (which comes second) includes various types of services : public and trade services in which about 200 thousand workers are involved distributed among 14.5 thousand trade plants, and about 23 central market and about half this number local markets, and about 9 thousand licensed street traders.

Industry comes in the third place. It can be divided into three parts according to the number of workers involved. First of which is the sector of simple-traditional industries with an estimated number of plants of about 7.2 thousand where about 26.7 workers are involved. Such activities are variant, most important of which are the transformational industries (furniture industry, food industry, beverage, tobacco). Next comes the handicraft industry that includes about 3.2 thousand plants involving about 4.3 thousand workers. The most important sectors of which are wood processing and metals, metallic products spinning and weaving. The third sector of the industry includes the handicraft industrial projects that involves the industrial area east the Nile in the governorate.

Deep in the desert some economic activities are being run, represented in extracting some stones from its natural sources. The

number of used stone quarries I about 334 (the number is not fixed) providing work for about four thousands workers (on day to day basis). Menya is considered from the least five governorates according to the GDP indicator, although it has made tangible improvement within the last years.

As for education, the university has played a role in encouraging and developing the peoples' awareness towards having their children to Join education whatever stage, especially the primary one, including boys and girls. Civil society organizations as well as private sectors have contributed in providing educational services regarding this stage along with the governmental sector and the Azhar sector. It's worth mentioning that attending the industrial-technical education during the high school stage out numbers any other type of education et that stage including public high schools. Efforts in the field of erasing illiteracy are active as well. There are about 3.3 thousand class in that regard and double the number of professional locations to erase adult illiteracy, most of which are found in the rural areas.

In the field of health care and health services, there are about 407 health plant available in the cities and villages of Menya providing about 4.7 thousand bed served by about 1.57 doctor and about 3.12 thousand nurse in addition to blood banks and family centers, private clinics and pharmacies.

It's worth mentioning that Menya has paid attention to the environmental factor, as a result several environmental projects were established, such as:

- Increasing the green areas which represent a natural lung to clarify the air from carbon dioxide gas. In that regard some public parks were

established, streets and squares were planted with trees. Kornish El-Nile in Menya was also improved to become a wonderful feature in the governorate.

- Collaborating with some donating organizations to execute environmental projects in the governorate, such as : the Egyptian – Italian project for recycling solid wastes – Multi fact programs of small projects, aiming the supporting woman, the project of establishing and preparing the schools to fulfill the targets of the Egyptian education plan, the project of controlling and avoiding the toxic chemical wastes. Such project aims at improving the information center of the toxic substances in association with some sectors in the governorate.
- The project of improving urban environment in West Menya, in association which the Swiss side.
- Environmental reformation project in association with the Uniceif organization.
- The project of improving the drinking water station at Kedwani and establishing sewage station at Beni Mazar, as well as establishing 12 filtration units in the governorate's villages in association with the American side.
- Projects of managing agricultural wastes done by civil societies in association with the Canadian side.
- Establishing a factory for recycling agricultural wastes in the industrial city in Menya.
- Establishing three factories for recycling garbage in three cities in Menya to control random discard of solid wastes and at the same time using it in producing organic manure.

- Establishing and running two stations for sewage at each of Odwa and Deir Mowas cities along with the existing ones at Menya and Abo Korkas cities to control the problem of sewage. Works of completing similar stations at other cities are taking place at the time being.
- Large number of canals and drains that pass through population blocks have been covered (filled up with earth) to control water pollution and irresponsible discard of wastes inside these canals.
- In addition, several projects were established to improve the environmental quality of life for the citizens through improving the quality of the various service (water – sewage – electricity education – earth – crops – environmental friendly industry.

1-1 Administrative Divisions

Menya is divided into nine administrative mark a3 from north to south are: Odwa – Maghagha – Beni Mazar – Mattay – Samallout – Menya – Abo Korkas – Mallawi – Deir Mowas). They are divided in return into 61 main villages under which 359 sub-village and 1713 Nag'e, Ezba & Kafr, as shown in table (1).

Table (1) Administrative division of Menya Governorate

Serial	Location	No. of Markaz	No. of cities	No. of towns	No. of districts	No. of Sheikh-doms	No. of local unit	No. of villages	No. of hamlets	Badawi clusters
1	Menya	1	1	0	0	246	8	43	272	
2	Mallawi	1	1	0	0	233	9	49	116	
3	Maghagha	1	1	0	0	231	6	41	159	
4	AboKorkas	1	1	0	0	237	8	47	224	
5	Odwa	1	1	0	0	121	4	26	98	
6	Beni Mazar	1	1	0	0	234	7	44	333	
7	Dir Mowas	1	1	0	0	125	5	29	86	
8	Samallout	1	1	0	0	273	9	54	308	
9	Mattay	1	1	0	0	127	5	26	117	
Total		9	9	0	0	1827	61	359	1713	

Source: Information center.

1-2 Environmental Profile (importance and aims)

A- Importance

The environmental profile presents the general features of the environmental status of the governorate, its natural, artificial and human resources, how far it's being used, how much they depend on one another to achieve sustained development. Environmental information were gathered from all over an around the governorate through discussions with unit work groups. Current status quo, main issues and environmental interests were determined. Oriented meetings with other involved parties being companies, utilities, institutions, the industrial sector, private sector companies, to determine the priorities of the main environmental interests for the different societal areas.

Gathering and analyzing multi-sourced data end information has made it possible to determine many issues through the different views of both citizens and officials. Such approach helps guarantee the accuracy of the environmental profile and how for it represents the real situation. It also gives the beneficiaries the chance to feel in control of the process of the general environmental action plan (GEAP) and its outcomes.

The environmental profile is one of four essential requirements to prepare the GEAP of the governorate. It aims at:

1- Determining the environmental issues and problems.

2- Setting realistic policies and targets within the GEAP of the governorate in order to improve the environmental status.

3- Determining the priorities in the GEAP of the governorate during preparing it.

4- Determining tangible solutions and projects of the GEAP of the governorate to control environmental problems.
5- Setting realists indicators to follow up the environmental of impacts of the actions taken.

As a result of the absence of a central source or data base for the environmental information both locally or governmentally in Egypt, in addition to the absence of monitoring data to organize the various important environmental standards, the gathered data for this profile contains mainly the following :

1- Reports from the sector working groups.
2- Information from the involved local ministries.
3- Statistics from the Information and Decision support center in the governorate.
4- Human Development Report of the governorate.
5- Uniceif Report 2003.
6- Inclusive layout of the governorate (Inhabitant planning Unit).
7- Environmental Management Units (EMUs) in the nine localities of the governorate.

1-3 Development and Environment

Environment is considered one of three pillars for the sustained development regardless the economic & social resources compared to the other two pillars; it is worth mentioning that the environment is being neglected most of the time. As a result, most of the environmental trends are negative. With the raising awareness of the relation between poverty between environmental management and decreasing poverty, as well as providing GEAPs as an important frame work to plane for and run the

sustained development. Such plans are considered essential tool to allow the poor to determine the issues and the priorities as well as playing on effective role in running the activities that handle these priorities. As a result, effective environmental management is considered from the important matters to ensure the sustained development especially for the poor and those that are most affected. The basic interests of environment are related to the following:

- Quality of life especially with regard to health and poverty.
- Growth magnitude.

1-3-1 Quality of life:

Decreased death rates is considered one of the important indicators of the tangible improvement that took place during the previous period, as indicated in the report of Health management about death rote from 1998 : 2005. We can gather the impacts of environmental status on the poor through:

- Ways of life.
- Health hazards and exposure to diseases.

Way of life:

Rural families all around the world depend directly on the natural resources and the interacting eco systems such as water, soil, forests & other natural mineral resources as in obtaining their daily needs. When such resources decrease and deteriorate in quality, daily requirements become threatened. Such threatens are reflected in the following:

- Misuse and miss management of fresh water and contaminating it.
- Misuse of fish and after mineral resources.
- Soil deterioration.

Health hazards and exposure to diseases:

Environmental deterioration is one of the essential factors that help spreading the diseases affecting the quality of life and the economic activities for many people. Early death and diseases resulting from environmental factors represent 20% of disease burden and costs in some countries. It can be compared with death rates according to malnutrition.

Basic environmental hazards include the following:

- Water related diseases as a result of shortage in access to clean water and absence of sewage.
- Exposure to indoor air pollution resulting from burning fuel inside ineffective ovens insufficient ventilation.
- Exposure to urban areas pollution because of the minute substances suspending in the air as a result of fuel combustion & bad engines.
- Burning agricultural wastes.
- Exposure to chemicals and agro-industrial wastes.

The burden of the diseases that are related to the limited supply of clean water, sewage, and indoor air pollution falls on the poor families both in rural and urban areas where no access to basic utilities services in available. They depend on animal & agricultural wastes in obtaining their fuel to cook. Citizens of urban areas are all affected by air pollution. However, the poor suffer more because of the sevearness of these impacts and because they only have limited chances to protect their children or to move to less polluted areas. Moreover, poor people are more affected by natural catastrophes and changes that take place eon the environmental condition.

1-3-2 Growth magnitude

Economic growth is one of the important matters if it decreases and controls the severity of poverty & improves life's conditions. However, improving the quality and quantity of growth is not an easy thing. In case of environmental issues, improving the motivations of sustained usage of natural and environmental resources is one of the main issues. Environmental problems usually exist as a result of market & policies failure.

Such thing negatively affects growth magnitude. Environmental problems have several distinguished features, such as:

- Late impact: Most of the environmental changes have late impacts that require a long time to apply the adequate protection.
- Site impacts: the reasons of such environmental impacts as well as its location are clear geographically.
- Accumulated impacts: individual actions have simple impacts of the environment. However, accumulating such impacts for several actions leads to escalating the situation.
- The red for governmental interference: environmental problem are, most of the time, one of the consequences of market shortage and demand governmental interference.
- Connection between the sectors: Environmental problems reflect, most of the time, on a wide range of sectors. Such thing requires organizing the unified efforts & policies.

2- The Governorate

2-1 Location and administrative boarders:

Menya lies in a distinguished a location among the northern governorates of Upper Egypt, between the two longitudes 40 28°, 37 32° east end the two latitudes 40 27° and 45 28° north. It is surrounded by Beni Sweif from the north, Giza from the west, Assuit and El-Wadi El Gadeed from the south and Red Sea governorate from the East. Menya city is the capital of Menya governorate. Map (1) illustrates the administrative boarders of the governorate. Menya is connected with the other governorates through the regional road, the eastern and the western desert roads, and the rail way. Menya is about 247 km away from Cairo.

Menya is divided into mine administrative localities, their order from north to South is : (Odwa – Maghagha – Beni Mazar – Mattay – Samallout – Menya – Abo Korkas – Mallawi – Deir Mowas). The administrative division has already been illustrated in the introduction under section 1-1. Map (2) as well illustrates the administrative division of the governorate.

2-2 Natural and geographic features:

The land of the governorate was formed from river precipitations that precipitated through thousands of years. Among its dominant geographical and natural features is River Nile that reaches about 135 km. in length inside Menya. The outpouring plain is one of the most important geomorphologic features in the region. It gets wider at the north of the governorate. Most areas of this plain are concentrated west of the Nile. It presence east of the Nile is limited only to some small pockets at the sides of the sharp turns and at the mouths of dry valleys. At many spots, the water of the Nile hits the eastern hill. This is related to:

- The earth's rotation that leads to the deviation of all the moving objects to the rights in the northern hemisphere. As a result, the outpouring plain is concentrated to the west.
- North West winds that drive the river waters east which increases erosion at that side.

Actually, he shape of the river and the islands included, have changed significantly after building the High Dam and the decrease of water level in the river after reserving the water in front of the dam. As a result, some islands surfaced blocking the riverbed.

The governorate is also known by a hill east of the Nile, and another one west of it. The east hill is represented in the lime formations found on the eastern side of the Nile. It represents a part of Mo'aza lime hill that runs from Qena's fold in the South till Mokattam in the North. It approaches the outpouring plan of the Nile in most parts with edges that are very declined, where as it runs relatively for from it at other parts, especially at the valleys mouths that cut it to fall in the Nile to the west. The edge of this hill in its part in Menya is characterized by both huge altitude at some parts as it reaches more than 180 m most of it, and severe slopes at the same time at other parts.

The edge is also characterized by being so close to the outpouring plain. As for the western hill, it stretches on the west side of the Nile valley running parallel to the out pouring plain with a level that exceeds 50 m.

The eastern hill is also characterized by the presence of a number of valleys that vary in areas, lengths & slopes. Menya is also characterized by several degrees of agricultural lands of high productive levels compared to the governorates of the region. More than 55% of

Menya's lands fall in the first category regarding field crops productivity. Most of Menya's soil is from the heavy mud kind. In such kind of soils, the condition of draining is considered one of the factors that determine the lands productivity. If the process of draining the water is bad, the land will deteriorate quickly and became salty or alkaline unable to produce. On the other hand, efficient draining leads to increasing productivity with large rates that may exceed 100%. From the data of the public Egyptian institution for draining projects, we find that there is a five years plan 2002/2007 to renew and establish agricultural draining networks in a large number of lands in Menya.

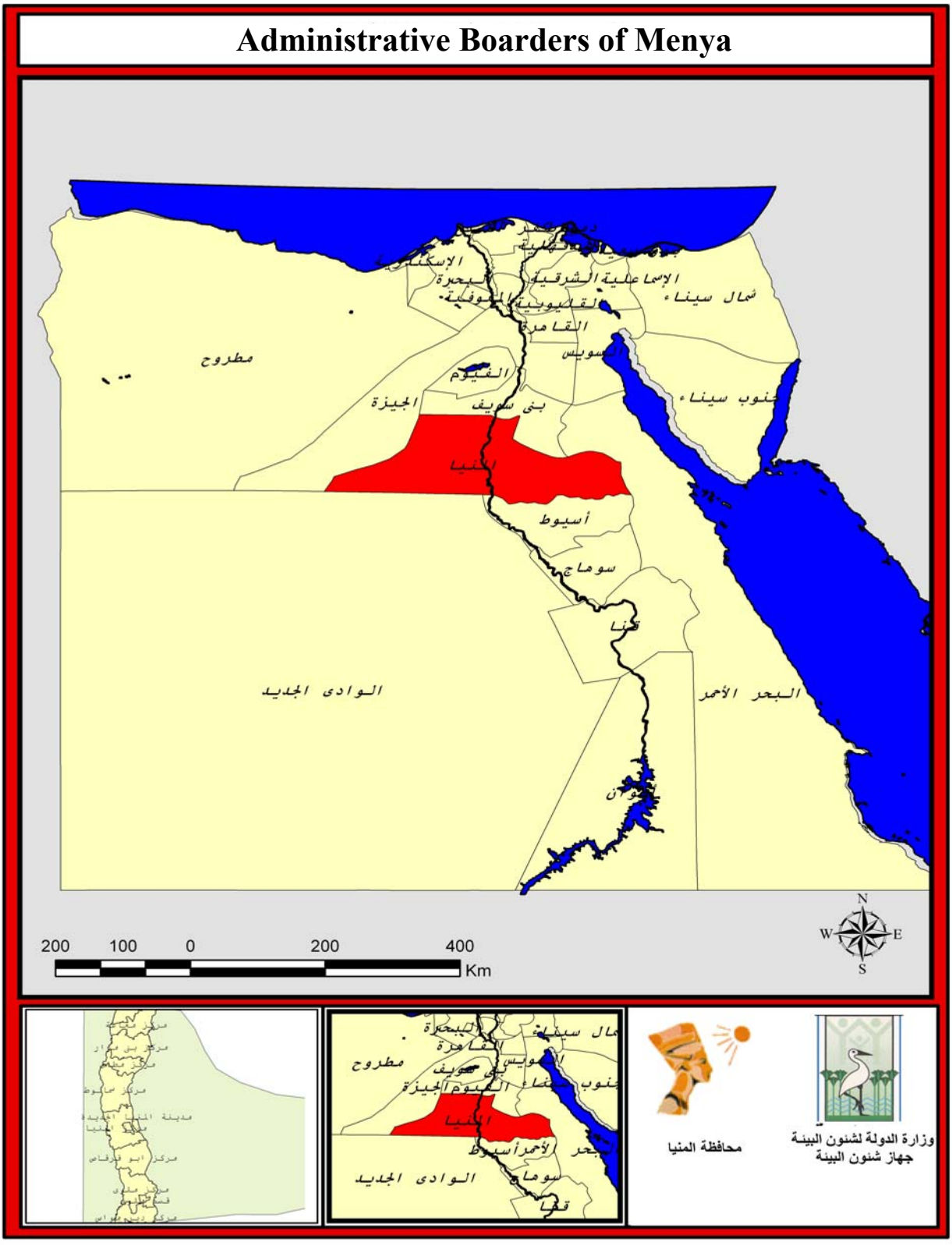
Climate features of the governorate:

Climate features:

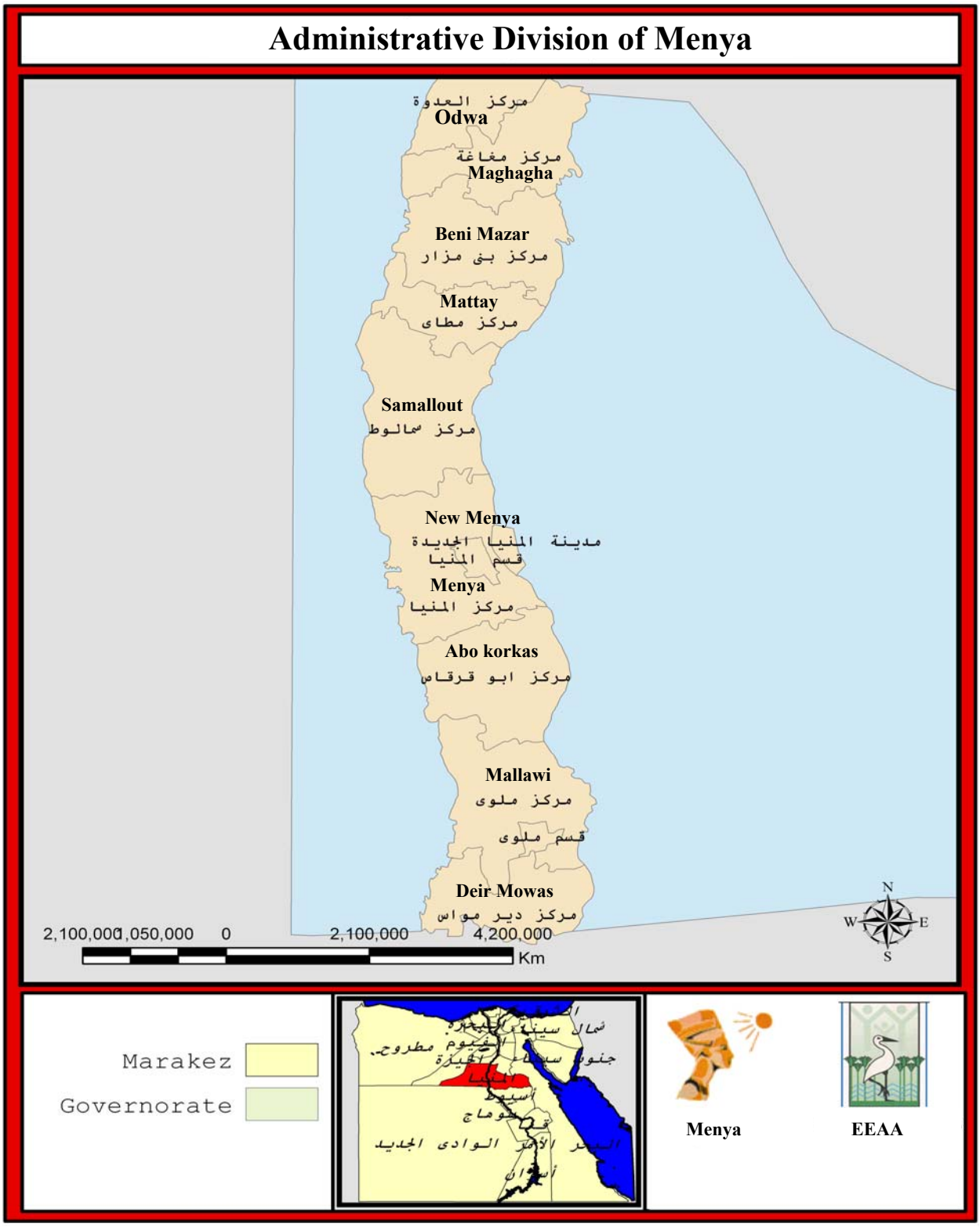
The climate is the region is affected by the dominating environmental circumstances, most important of which are :

Astronomical location:

Menya stretches longitudinally in latitudes between 40 27° and 45 28° North. As a result, it falls into the desert climate system with its well known features. It's worth mentioning that most of the Egyptian lands fall in the same system.


Administrative Boarders of Menya
الإسكندرية
البحيرة
الإسماعيلية الشرقية
القليوبية
المنوفية
شمال سيناء
القاهرة
مطروح
السويس
الفيوم
الجيزة
بنى سويف
جنوب سيناء
المنيا
أسيوط
سوهاج
قنا
الوادى الجديد
البحر الأحمر
200 100 0 200 400
Km
N
W
E
S
محافظة المنيا
وزارة الدولة لشئون البيئة
جهاز شئون البيئة

Map (1)


Administrative Division of Menya
مركز العدوة
Odwa
مركز مغاغة
Maghagha
Beni Mazar
مركز بنى مزار
Mattay
مركز مطاى
Samallout
مركز سمالوط
New Menya
مدينة المنيا الجديدة
قسم المنيا
Menya
مركز المنيا
Abo korkas
مركز ابو قرقاص
Mallawi
مركز ملوى
قسم ملوى
Deir Mowas
مركز دير مواس
2,100,000 1,050,000 0 2,100,000 4,200,000
Km
N
W
E
S
Marakez
Governorate
Menya
EEAA

Map (2)

Geographical Location:

Habitants and population are concentrated inside the outpouring plain strip of the Nile Valley. Such connected habitant range that stretches along 200 km is subject to the winds coming from the North West with no topographical obstacle what so ever. As a result, and according to its geographical location, it because opened to the effects coming for north and North West. On the other hand, and being on the river sides has had a relative effect in soothing the temperature. Nevertheless the continental pattern is the dominating feature of Menya since it's for away from the Red Sea and the Mediterranean One.

Temperatures:

Temperature is one of the important elements of the climate, as other climate elements are affected by it. It also has significant impacts on human life and different activities. The following table illustrates monthly rates of temperatures (Celsius) at Menya weather station. It shows the raise in temperature during summer, Menya stays warm in winter. Daily temperature average is 28.5° during July, the highest month, and 11.8° in January the lowest one. As a result the average of the temperature range is 16.8° which means that the climate is continental.

Maximum highest temperature rate reaches 36.7° during summer, whereas the minimum temperature rate records 20.2° for the same month.

As a result, average temperature range between day and night during these months is 16.5°.

Table (2) monthly rates of temperature (in Celsius) as recorded in Menya Weather Station.

Month	*Rates of Max. temp.*	*Rate of Min. temp.*	*Rates of daily average*	*Standard Temperatures*			
				Max. degree	*Date*	*Min. degree*	*Date*
January	20.2	3.9	11.8	31.7	15/1960	4	31/1950
February	22.5	5.3	13.4	35.4	22/1941	4	7/1950
March	25.8	8	16.7	40.9	30/1960	0.7	8/1943
April	30.8	12.1	21.4	44.3	15/1958	3	7/1949
May	34.8	16.4	25.7	48	31/1961	8.5	1/1948
June	36.5	19	28	47.5	7/1961	13	2/1943
July	36.7	20.2	28.5	45.5	5/1941	16	30/1967
August	33.3	20.4	28.2	44.6	14/1968	16	29/1959
September	33.6	18.5	25.8	41.7	7/1967	12.6	30/1949
October	31.4	15.5	23.1	41.5	10/1942	9.2	27/1959
November	26.5	11.3	18.2	39.3	2/1941	2.9	30/1953
December	21.8	6.5	13.4	33.2	2/1956	8	26/1972
Annual average	29.7	13.1	21.2	-	-	-	-

Source: Inclusive layout of the governorate.

As for winter, January is considered the coldest month where the max. temperature rate reaches 20.2, where as min. temperature rate reaches 3.9°. Consequently, average temperature range between day and night is 16.3°. Although winter mornings are warm, its nights are cold.

Relative Humidity:

Table (3) illustrates monthly rates of relative humidity at Menya weather station. As shown, relative humidity percentage increases by the end of fall and during winter as a result of temperature decrease. Relative humidity reaches its max. rate during November and December recording 60% and 62%, where as it decreases during summer to reach its min. rate of 35% May.

Table (3) monthly rates of relative humidity in Menya.

Month	*Jan.*	*Feb.*	*March*	*April*	*May*	*June*	*July*	*August*	*Sep.*	*Oct.*	*Nov.*	*Dec.*	*Annual average*
Rate	58	53	48	40	35	39	45	51	54	54	60	62	50

Source: Inclusive layout (Inhabitant planning Department).

Rain:

Table (4) illustrates monthly rates of rain (mm) at Menya Weather station. As shown, annual and monthly quantities of rain appear to be very small. February is the most rain month, where it reaches 1.5 mm. Rain doesn't fall during summer. As for the rest of the months, rain is rare and the annual amount reaches about 4 mm. The amount of rain falling on the region is directly proportional with the number of the rainy days. It is also noticed that the rainiest months are those having the biggest number of rainy days. This is related to the nature of rain falling on Egypt as it follows the aerial depression. Which helps increasing the efficiency of the rains is that most of it fall during low temperature months the thing that decreases the amount lost from evaporation.

Table (4) monthly amounts of rain (mm) at Menya Weather station.

Month	*Rain amount (mm)*	*Max. amount in one day*
January	0.5	6.8
February	1.5	11.4
March	0.3	3.2
April	0.3	10.2
May	0.4	8.4
June	rare	rare
July	rare	rare
August	rare	0.1
September	rare	1.2
October	0.4	6.5
November	0.1	2.7
December	0.5	4.4
Rain amount	4	-

Source: Inclusive layout (Inhabitant planning Department)

Wind speed

Table (5) and (6) show annual rates of wind direction and speed.

Table (5): annual rates of the percentages of wind direction in Menya Weather station during the year.

Directions	*North*	*North east*	*East*	*South east*	*South*	*South west*	*West*	*North west*	*Still*
Annual average	43	12	1	4	4	3	3	24	6

Source: Inclusive layout (Inhabitant planning Department)

Table (6) monthly rates of relative humidity in Menya.

Month	*Jan.*	*Feb.*	*March*	*April*	*May*	*June*	*July*	*August*	*Sep.*	*Oct.*	*Nov.*	*Dec.*	*Annual average*
Average	5	5.9	7.9	8	8.7	9.2	7.8	6.6	7.4	6.6	6	4.9	7

Source: Inclusive layout (Inhabitant planning Department).

As shown in table (5) north winds blow over the governorate at on annual percentage of 43%, next is the north west winds with 24%, then the north east with 12% still air records about 6%. North winds are usually moderate and soothing since it blows from higher and cooler latitudes towards lower and warmer ones. It is the dominant type of wind all through the year; however, its percentage becomes less during winter. It is preferable in such hot region during summer. At the same time, it doesn't carry sand as it passes over agricultural lands and the Nile valley before reaching the region.

It's also shown from table (6) that the wind reaches its max. speed in June, while its min. speed in recorded during December at 4.9 knot/hr. Annual average of wind speed in 7 knot/hr.

Clouds and sun shine

As reported from Menya weather station and written in the inclusive layout of the governorate the sky is clear if what the clouds are hiding of it is less than 25%. It is considered mild cloudy if what the clouds are hiding the sky ranges between 25% - 75% of it. If this percentage exceeds 75% of the sky, then the clouds are considered heavy. What the clouds hide of the sky differs along day time and according to the season as well. As shown in the next table, clouds increase during winter ranging between 19%: 23% which means that the sky is

considered clear. During summer, this percentage decreases again to reach 3% which means that the sky is clear and free of clouds.

Table (7) Total cloud cover at Menya weather station.

Month	*Jan.*	*Feb.*	*March*	*April*	*May*	*June*	*July*	*August*	*Sep.*	*Oct.*	*Nov.*	*Dec.*	*Annual average*
Daily average	1.6	1.5	1.3	1.4	1.2	0.2	0.2	0.2	0.3	0.6	1.3	1.8	1
Clouds%	20	19	16	18	15	3	3	3	4	8	16	23	14

Source: Inclusive layout (Inhabitant planning Department).

From the previous information, it is clear that Menya receives lots of amounts of sun shine all over the year. The sun shine reaches 393 hours in July, which means 13 hr./day. This is related to its location 30 28° north.

2-3 Population features

2-3-1 Census and growth rate:

Population studies are one of the main givens that serve any plan beside other sector studies. Demographic features of population are one of the main determinants in the planning process of any location. Among the most important features is the population growth rates that illustrate the general trend of population size during previous periods in addition to the possibility of using it in population estimation studies, where as other features (age, gender, educational, social state, average family size) the main demographic features of the society in the future. This helps us in the studies of future needs.

Population Development:

Population studies indicate a rapid increase in Menya's population. In 1976, Menya's population was 2,045,000 raised to 2,645,000 in the next census in 1986, then 3,310,000 in 1996. According to the estimated census of the governorate in 2006, Menya's population reached 4,049,000 with a growth rate of 2.19%. Population concentration for the total area of Menya is 0.12 thousand/km^2. As for the inhabited area, population concentration reaches 1.64 thousand person/km^2 as this area is estimated to be 2411.65 km^2. Such increase in growth rate in Menya compared to other governorates is related to the cultural inheritance that encourages early marriage & abundant off springs as do the other governorates in Upper Egypt. Low economic standards of the family also encourage the family to have more kids as a source of income especially that poverty level in Menya rises up to 51%, in addition to other factors related to the general awareness of the citizens.

Growth rate in Menya reached 2.56% from 2003 till 2005. Growth rate in the rural part of the governorate exceeds the urban ones, as it recorded 2.64% in the country side and 2.37% in the urban areas. However, growth rate in general tends from what it was prior to 1996 where it reached 2.71%.

Table (8) and (9) illustrate a statement of birth rates and death rates from 1998-2005.

Table (8) statement of death rates from 1998/2005 (rate/thousand)

Administration	Death rates in years							
	1998	1999	2000	2001	2002	2003	2004	2005
Menya	7.7	4.7	7.3	7.4	7.4	7.8	7.3	7.3
Maghagha	7.3	7	6.7	6.6	6.6	6.4	6.1	6
Odwa	7.2	3.7	6.8	6.8	6.8	6.4	6.1	5.6
Beni Mazar	7.3	6.6	6.1	6.2	6.2	6	5.7	5.5
Mattay	6.9	6.4	6.4	5.9	5.9	6.2	5.7	5.2
Samallout	7.4	6.6	6	6.5	6.5	6	5.7	5.3
Abo Korkas	7.4	7.2	6.5	6.5	6.5	5.9	5.2	5.4
Mallawi	7.5	7.1	6.1	6.2	6.2	6	5.9	5.3
Deir Mowas	7.7	6.6	6.4	6.3	6.1	6.2	6	4.7
Total	**7.4**	**7**	**6.5**	**6.5**	**6.3**	**6.4**	**6.1**	**5.7**

Table (9) Statement of newly born from 1998 till 2005 (rate / thousand)

Administration	Death rates in years							
	1998	1999	2000	2001	2002	2003	2004	2005
Menya	31.9	30	31.1	29.1	29.2	28.2	27.9	26.7
Maghagha	36.1	34.7	35.7	33.1	32.7	33	32.2	30.3
Odwa	37.9	36.9	36.4	34.5	35.1	33.3	34.1	1.2
Beni Mazar	36.1	33.4	33.2	32.7	31.2	30.8	30.3	27.4
Mattay	34.9	33.5	33.9	32.8	32.1	30.7	29	28.4
Samallout	35	33.1	33.6	33.3	32.2	31.7	30.4	27.6
Abo Korkas	33.6	31.3	32.4	32.3	31.6	30.1	29.1	27.1
Mallawi	34.4	33	33.8	33.6	31.8	30.3	29.6	27.9
Deir Mowas	36	34.7	35	33.8	32.3	29.7	29.7	28.3
Total	**34.6**	**32.8**	**33.3**	**32.5**	**31.6**	**30.6**	**29.9**	**27.9**

Source: Health and Population management in Menya.

2-4 Social features:

Most families in Menya live with each other in big families that apply habits and traditions like that of the tribal society. Some families live in one house that holds the parents and the sons and have it own style.

2-4-1 Housing structure and style:

The structure and style of the house differs in the urban areas than the countryside. The common style in the urban areas is the modern buildings of different heights and independent units (flats). Cement and hard bricks are used in building such houses. In the rural areas, a house doesn't exceed three floors. Most of them are composed of one or two floors. Stone bricks and wood are used in building such houses, few of which use cement. In the urban areas, one building holds many families that come from different places, whereas in the rural areas only relatives live the house. The average family number in the rural area is five, while the average family number in the urban area is four. The rate of population condensation or the number of persons in one room is related to the social and economic conditions as well as the living standards.

2-4-2 Age and gender

Table (2-4-2-1) in the, supplement of social features, illustrates the development of population number according age categories from age one day to 75 years old, as well as the distribution of the population over rural and urban areas and the gender of population in each age stage. As shown in the same table, the 0-14 years age category reaches about 42.7% of the total population, 22.3% of which are males while 20.5% are females. The age category 15-64 years represents 53.6% of the total population (work age), 27% of which are males while 26.6% are females.

As for elderly people, 65 years old and more, they represent 3.7% of the population, 1.8% of which are males while 1.9% are females. As a result the percentage of those being supported (youngsters + elderly) reaches 46.4% (almost half the population). Such high percentage increases the burden on the producing category. Table (10) illustrates the development of population number according to the social status, from age 15-65 years old in Menya.

2-4-3 Education:

Rates of illiteracy have dropped in Egypt from 55.4% to 39.2% during the period from 1976 till 1996. Such drop is also applied on Menya as shown in the next table as it shows the development of population number according to the educational status in the age category that is more than 15 years old during 2004 and 2005, and the decrease in illiteracy percentage against an increase in the percentage of literate individuals above 15 years old in all educational stages according to the latest data collected from the IC of the governorate, ministry of education and the involved authorities.

Table (10) population no. progress according to the educational status in the governorate

S	State	Estimated population no. for the year 2004					Estimated population no. for the year 2005				
		Male		Female		Total	Male		Female		total
		Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural	
1	Illiterate	68356	511878	114607	858942	1553783	69881	523296	117163	878101	588441
2	Reads and writes	52237	214892	36766	87535	391430	53402	219685	37586	89487	400161
3	Pre college	147160	378630	118628	149965	794383	150442	387075	121274	153310	812102
4	College	29253	24475	16947	4514	74089	29905	23896	17325	4615	75742
5	Post college (MA – PhD)	1492	452	287	110	2342	1526	462	294	113	2394

Source / Information center of the governorate

2-4-4 Life Condition and Services:

Habitant conditions are one of the main indicators of social and economic development. Poor and neglected families often suffer from a shortage in basic utilities services. Supplying citizens with basic social services (utilities – education – health) and others that serve them is vital and has great impact on the individual's productivity and increasing the GDP.

Water supply service:

Surface and ground water are considered the main sources of drinking water in the governorate. The Nile and the main canals (Ibrahemia canal – El-Bahr Elyoussefy canal) as well are from the continuous & abundant source that could be relied on to supply the governorate with drinking water at the present or in the future. Surface water is purified in different purifying station before being pumped in the drinking water network.

Ground water is the second main source of potable water through wells' station that are supplied with diving pumps to extract it. Table (11) illustrates water resources, its quantities, the amounts used and lost, number of stations, individual's share and the cost of square meter of the drinking water.

Table (11)

1- Water resources	The Nile – Ibrahimya canal Bahr youssef – ground water
2- Total amount of water produce from 1-7-200 till 30-6-2005.	113032954 m^3
3- Sold water	71390846 m^3
4- Loss percentage	7.39%
5- Number of stations and their kind	237
6- Individual's share (rate of consumption)	76.9 liters/day
7- International rate of consumption	180 liters/day
8- percentage covered under the service	78% of the habitants
9- Cost of square meter	48 piaster
10- No. of benefitted citizens	3150000

Source: Potable and Waste Water Company in Menya.

Table (2-4-4-1) in the social features supplement illustrates the no. of habitants benefiting from this serve up till 30-6-2005. It is shown the water reaches to about 78% of the citizens. However, some of this water is not consistent with the standards, especially that most of the villages depend on ground water.

Waste Water service :

At the present time, there are working waste water networks in all the following cities and villages (Menya city – Abo Korkas – Odwa –

Deir Mowas) – (Bahnasa village – Tala – Beni Ebeid "under processing"). Working is not over yet in waste water networks in the following cities; Maghagha – Beni Mazar – Mattay – Samallout – Mallawi.

Table (12) illustrates number of treatment stations, designed capacity and operating year.

Table (12) waste water treatment stations

Serial	*Locality (Markaz)*	*No of elevating stations*	*No. of treatment stations*	*Designed capacity m^3/day*	*Year of operation*
1	Menya city & tala village	15	1	40000 m^3/day	1965
2	Abo Korkas city	5	1	40000 m^3/day	1997
3	Odwa city	2	1	2000 m^3/day	2005
4	Deir Mowas city	2	1	10000 m^3/day	2005
5	Bahnasa village	2	1	2000 m^3/day	1999
6	Beni Ebeid village is under operation				

Source: Potable and waste water Company in Menya.

It's worth mentioning that waste water service doesn't reach to a large sector of Menya's citizens, working waste water nets doesn't reach except to only 10% in urban areas and some of the rural ones. Actual beneficiaries and users to this net doesn't exceed 8.5%. The rest of the habitants depend on tanks, some of which are solid, others are not. In all cases, such thing has its negative impact on the surface or ground water reservoir because such reservoirs are being gathered and thrown in the open ditches that runs in return to the public ones to the Nile.

Electricity:

Electricity service reaches all the cities, villages, sub-villages ranches, … etc. of Menya. The governorate depends on the electricity of the High dam. There are no stations for generating electricity. Electricity sector in Menya only distributes. However, electricity doesn't reach all the families at their homes. Indicators of the Uniceif reports illustrate that only 83.5% of the habitant benefit from electricity. What was recently reported from electricity sector in 2005 shows that the number of actual subscribers is 745633. From that latest number, it's obvious that the number of citizens benefiting from the electricity service exceed 95%.

2-4-5 Health

Poverty is not related to just income, but other issues such as health, security, education, nutrition basic services. We can also use other issues such as water supply and illiteracy as poverty indicators. As for the health side, age average is considered one of the main indicators of the human development. On the national level, the average of age in Egypt was 66.9 year in 1998. Such average in significantly higher than that of 1976 when it was 55 years. By the year 2000 this average increased to be 68 years. The current average of age in Menya is 68.8 years. (Human Development Report 2005). Such thing is considered an evidence of an improvement in the general health situation of the citizens of the governorate. The increase of this average in the rural area than in the urban, however, may under value such evidence against the environmental considerations in that regard. Tale (2-4-5-1) in the Health Supplement illustrates life estimation at birth. Table (2-4-5-2) in the same supplement as well illustrates that there is a difference in the age average between villages. In some villages it records 69.1 years, while in others it

records 66.3 years. Such difference may be related to the deterioration in services level in such villages.

Death rates:

The data reported from Menya health and population management (year 2005) illustrates that death rate in the governorate is 7.4 in the rural areas and decrease to 6.6 in the urban ones. Compared to death rates of the previous years, significant decrease in noticed, as it reached 11.8 in 1986, then 9.2/1000 in 1991.

Children's death

According to the Human Development Report of Menya 2003, children's death rate recorded 31/1000 birth case during 2001 against 30.6/1000 birth case in 1996.

On the other hand and according to the Human Development report of 2005, infants' death rates showed a significant change. Infants death rates reached 108/1000 baby in 1991, decreased to 31.3 / alive baby in 2004.

Table (2-4-5-4) in the Health Supplement illustrates children's death through different age stages according the reports of Menya health and population management.

Mother's death

There are no data about Mother's death rates in Menya. However, and according to the Human Development report 2005, mother's death rates were about 85 cases for every 100 thousands alive infant, the thing that reflects a significant decrease in mothers' death rate in the governorate, as it recorded 146 cases for every 100 thousand alive infant in 1992. National figures during the some interval illustrates similar trend in the decrease of Mother's death rates (174 in 1992, 90.5 in 2000).

Rates of catching diseases

Table (2-4-5-6) in the health supplement illustrates that the number of tumor cases frequently going to the center ranges between 3000 and 4500 case monthly, the thing that reflects how for such diseases are spread in Menya.

Typhoid cases reached 617 during 2004, the biggest percentage of which was in Odwa, Beni Mazar, and Mallawi. Least number of cases was in Mattay as shown in table (2-4-5-7) in the health supplement. Numbers of prosila patients was 503 case in 2004, most of which were in Samallout (101 case), then Abo Korkas (Fekreyya) as illustrated in table (2-4-5-8) in the health supplement.

The existence of viral hepatitis is also shown the number of cases recorded in the health management was 74 cases, 28 of which are C positive, and 9 are b positive. Most of the cases were in Menya city through the first half of 2005, in addition to the unrecorded cases being followed up in the private clinics and the hospital external clinics and the cases that haven't been discovered yet.

Project of fighting endemic diseases in the governorate

Health units in the governorate apply a complete scan over the endemic diseases. They regularly carry out medical examination, necessary analysis and follow up. The following is an illustrative report covering 2004 and the first half of 2005. Total cases examined for Bilharzia during this period was 1442385, the positive cases were 15051 representing about 11% of the cases examined. Stool examination cases were 236962, of which 1849 were infected by Ascars, 351 by Anclestoma and 18654 by Esporosest, the thing that reflects bad health condition in the governorate. Total number of viral infection cases reached about

11276 cases from 1-1-2004 till 30-6-2005 number of cases infected by parasitic diseases was 11304 case, renal failure cases was 3324, liver diseases cases was 20057, and respiratory system diseases cases were 17284. From such data, it is noticed the spread of hepatitis diseases as well as respiratory system diseases in the region. (see table (2-4-5-9) in the health supplement).

Table (13) reports the number of hospitals, their supplies, ambulances following health management and the private sector in Menya.

Table (13) Hospitals, beds and ambulances following health management or the private sector

Markas	Health Affairs managements								Other authorities		Private hospitals	Beads
	Hospitals			Beds	Blood banks	Ambulance			*Mabarra*	beds		
	Public	*Central*	Specialized			Centers	Units	cars				
Menya	1	0	5	769	1	1		10	1	160	10	311
Maghagha	0	1	2	387	1	0	1	4	0	0	1	6
Odwa	0	1	1	198	1	0	1	6	0	0	0	0
Beni Mazar	0	1	4	338	1	0	1	4	1	40	5	130
Mattay	0	1	0	213	1	0	1	4	0	0	0	0
Samallout	0	1	2	379	1	0	1	6	0	0	2	50
Al – fekreyya	0	1	0	208	1	0	1	6	0	0	2	33
Mallawi	0	1	2	516	1	0	1	5	0	0	1	20
Deir Mowas	0	1	1	230	1	0	1	3	0	0	0	0

Source / Information center In Menya governorate

Report of doctors, technical workers at health management in Menya

Large number of specialists work in Health sector in Menya, reaching about 6751 (doctor – nurses – rays technicians – Lab technicians – others). Table (14) illustrates them in details.

Table (14): Number of doctors, technicians in health management in Menya.

Menya	Doctors	Nurses	Radiation technicians	Lab. Technicians	Other	Notes
	2103	3493	184	284	687	

Source: IC in Menya.

It is also worth mentioning that every public or central hospital has :

- An independent substitutional light supply that works efficiently.
- An independent substitutional water supply the works efficiently.
- A periodical inspection is run weekly to examine the efficiency of such means.

Illustrating the status quo of the health services in Menya and the studies done in the inclusive layout of Menya, we find that. The supply rate of the service is 0.5 bed for every 1000 person. Such rate is smaller than these of the Ministry of health (3 beds / 1000 person). As a result of such shortage in the health service supply compared to the planned rates, it represents a shortage in 9908 bed at the governorate level that has to be provided at the present time to provide the service efficiently compared to the planned rates. Such target is achieved through improving the present hospitals whether public, central or specialized. On the other hand, taking

care of the village hospitals to control the centralization of the service. According to the expected population increase, the health service needs to provide 5119 bed along the governorate after fixing the current shortage to provide the service as expected.

This reflects the insufficiency of the health service at the governorate, especially in the rural areas. Human Development Report 2005 emphasizes such assumption through the following:

- Number of doctors in Health and population Ministry is 5.2 doctors for every 10 thousands person.
- Number of nurses in Health and population Ministry is 9.4 nurses for every 10 thousand person.
- Percentage of nurses to doctors is 18: 1.
- Number of beds for every 10 thousand person is 11.1.
- Number of health units for every 100 thousand person is 2.6 units.

Through the data presented in the inclusive layout of the governorate and the data acquired from the health management, a statement was prepared illustrating the improvement done and will be done in the field of health services through 2007/2012. One public hospital was improved, two central hospitals, 4 specialized hospitals, 6 village hospitals, 90 rural health units, and establishing 3 units for every 5-years plan, the required is :

- Completing and preparing Menya public hospital in New Menya city.
- Improving and preparing 9 village hospitals of capacity 30 beds for each one, with total number of 270 beds, and improving each of (Maghagha – Samallout – Abo Korkas – Menya – Mallawi – Odwa – Beni Mazar – Deir Mowas – Mattay) hospital.

- As for the new projects, they are : establishing are public hospital on 4.8 feddans area, and 4 specialized hospitals on 10 feddans area.

2-5 Economic Features

- GDP (Gross Domestic product) and Income distribution the GDP indicates the total value of the economically produced service using internal and external resources. The economic condition, as well, is considered one of the main axes of the human development in the society, as it reflects how abundant are the circumstances to elevate the luxurious level of the individuals, and in what data available. In that regard, some indicators can be illustrated as follows :
- The percentage of individuals under the poverty line is considered one of the main indicators reflecting the percentage of people suffering economical deprive, as a result, reflecting gaps and mingles in distributing the economic revenues of the society. According to Egypt Human Development Report 2003, Menya comes in rank 22 among the Egyptian governorates regarding the average of the individual's share from the GDP which was 3916 pounds (2001 data).
- Menya's share from the domestic product was 17080.5 million pound, as the individuals share raised to about 4358 pounds (according to the Human Development report of 2005, illustrating that Menya came 19 among the governorates).
- However, the percentage of the poor in still high as it recorded 38.2% of the population. The percentage of the severely poor reached 10.2% of the population (Human Development Report 2005). Tables (15) and (16) illustrate poverty and income distribution in Menya.

Table (15) Gross local production , average pen capita in Egyptian pounds in Menya governorate 2003

Markaz		Total of Markaz	Urban pant	Rural pant	Villages of the markaz			
					Max. limit		Min. limit	
					Value	Village	Value	Village
Menya		4919.4	8002.0	3545	4208.4	Nazlet faragallah Matta	3251.5	Saft El-khemar
Abo Korkas		3151.3	6837.1	3772.4	3928.9	Nahhal	2529.3	Nazlet Asmant
Odwa		3860.8	6967.6	326.4	3700.6	Geni warkan	2847.4	Nazlet Ramadan
Beni Mazar		4239.6	7171.4	3049.9	4303.3	Hamada	2036.8	Hazlet Amr
Deir Mowas		3661.6	6996.7	3123.5	3833.7	Tokh	2690.1	Nazlet Mahmoud
Samallout		4526	6994.3	4046.2	5340.2	Kom El-Hatub	3444.9	Essalam
Mattay		3959.3	6915.8	3248.5	4054.3	Abgag El-Hatub	2140.9	El – Roda
Maghaha		3964.1	1141.8	3272.4	4507.1	Zawget Al- gdama	3010.1	Beni khalaf
Mallawi		4099.1	1658.8	3193	4024.9	Monshai't seif El – Nasr Mhammed	2489.5	Monsha't seif El Nasr
Governorate	Urban	-	5854.2	-	8002.2	Menya	6837.1	Abo krokas
	Rural	-	-	3369.4	5340.2	Kom El – loufi	2036.8	Nazlet Amr
	Total				4979.4	Menya	3860.8	Odwa

Source / Human Development

Table (16) The percentage of population under poverty line in Menya 2003

Makaz		Total or Markaz	Urban part	Rural part	Villages of the markaz			
					Max. limit		Min. limit	
					%	Village	%	Village
Menya		15.2	15.1	15.2	15.3	Admo and others	15.1	Matahara Bahareyya and others
Abo Korkas		15.2	15.1	15.3	15.4	Beni saeed/ Rehana	15.1	Abyoha and others
Odwa		15.2	15.3	15.3	15.3	Baskalon and others	1	Kafr Mahdy and others
Beni Mazar		15.2	15.2	15.2	15.3	Ab toga and others	15	Shalagam / Tanabo
Deir Mowas		15.2	15.2	15.2	15.2	Abo khalaka and other	15	El – Amareyya
Samallout		15.2	15.1	15.2	15.3	Monshait beding and other	15	Al – be ho and others
Mattay		15.2	15.1	15.1	15.3	Bardanoha and others	15.1	Nazlet Awlad El – Sheikh
Maghagha		15.2	15.2	15.2	15.3	Abo Besht and othes	15	Ashneen El – Nasara and others
Mallawi		15.2	15	15.2	15.4	Al – arein kebly	15.1	Nazlet Sharmoukh
Governorat	Urban	-	15.2	-	15.3	Odwa	15	Mallawi
	Rural	-	-	15.1	15.4	Beni saed/ Rehana/ Al- arein kebly	15	Shalkm / Tanabo / Nazlel awlod El Sheikh / Nazlet Sharmoukh
	Total	15.1			15.3	Odwa / Samallout	15	The rest of Marakz

Source / Human Development Report 2003

Source: Human Development Report 2003

From table (15) it I obvious that the individual's share from GDP in pounds along the urban part of the governorate exceeds double that of the rural part. In cities, it ranges between 8002.2 in Menya city as max rate and about 6836.1 in Abo Korkas city as a min-rate, with a varying percentage of 17%. On the level of Mrakaz, it recorded 4979.4 in Menya Markaz as a max. rate and 3860.8 in Odwa Markaz as a min. rate with a varying percentage of 29%. On the level of the governorates villages, it recorded 5340.2 in Kom El-Loufi village (Samallout) as a max. rate and 2036.8 in Nazlet Amr (Beni Mazar) as min. rate with a varying percentage raising to 162.2% among the villages, which means that the vary in the value of this indicator is about a time that of the cities. Such thing proves that the discrepancies among villages are the ones needing more attention on the short term.

3- Natural Resources

3-1 Introduction

Menya enjoys a variety in natural life because of its various natural environment. These natural environments can be classified into three main types:

- Moist lands.
- Agricultural and urban environments.
- Desert environments.

Each of which is characterized by its own animal and plant life.

3-2 Geology and nature of the land

3-2-1 Geological status of Menya

Geological wise, Menya is covered by precipitation rocks that range in age between the third and the fourth era, arranged from the oldest to the newest as follows (Map 3 illustrates the geology of Menya) :

- Formation of the third era represented in the formations of the Eocene era, the last era of the third age, that stretch in the shape of a longitudinal strip parallel to the outpouring plain of the Nile. Such formations are marine precipitations formed from lime rocks mixed with sand and loam.
- Precipitations of the fourth Era : they are loose, incoherent formations represented in :
  - Nile outpouring precipitations: they are the precipitations of the out pouring plain of the Nile brought from the Ethiopian hill. It is formed from mud and silt.
  - Plain precipitations: represented in a land strip parallel to the western outpouring plain. They are formed from pure sand coming from the western desert.

They area east the Nile is formed from line stone of the middle iodine, known as Menya formation or lower Mokattam, the same rocks from which Mokattam is formed. It stretches forming the edge of Nile valley. This line stone was subjected to decomposition and remove during the rainy ages over Egypt in the past, the thing that led to the formation of cages and cliffs as well as the increase of the splits and fractures in the lime hill located east of the Nile which makes it unstable and geologically weak. As for the area west of the outpouring plain, it is formed from a

longitudinal strip of sand hills that can be a protecting belt for this area from the west if handled and planted with wind shield trees.

3-2-2 The Nature of the Land in the governorate:

Menya in general contains three kinds of soil. In the north and the south, there are salty soils. Medium salt soils are scattered in the north east, middle and south west.

Most of the governorate's lands are normal salt and suitable for agriculture. In other words, the nature of land in Menya governorate is characterized by the following (Map 4 illustrates the topographic nature of Menya):

1- Newly formed river precipitation lands stretching along the two edges of the Nile, including most of the lands, representing about 70% of the agricultural lands Most of these areas fall between the Nile east and Bahr youssef west.

2- Pure old sand river precipitation lands that was air borne and lies on the western edge of the cultivated valley up the new river plains. The rest could be cultivated as well. They represent an important part of the reclaimed areas.

3- Surface lime lands thrown by the fluids from the feet of the Eastern hill. These lands are formed east of the Nile.

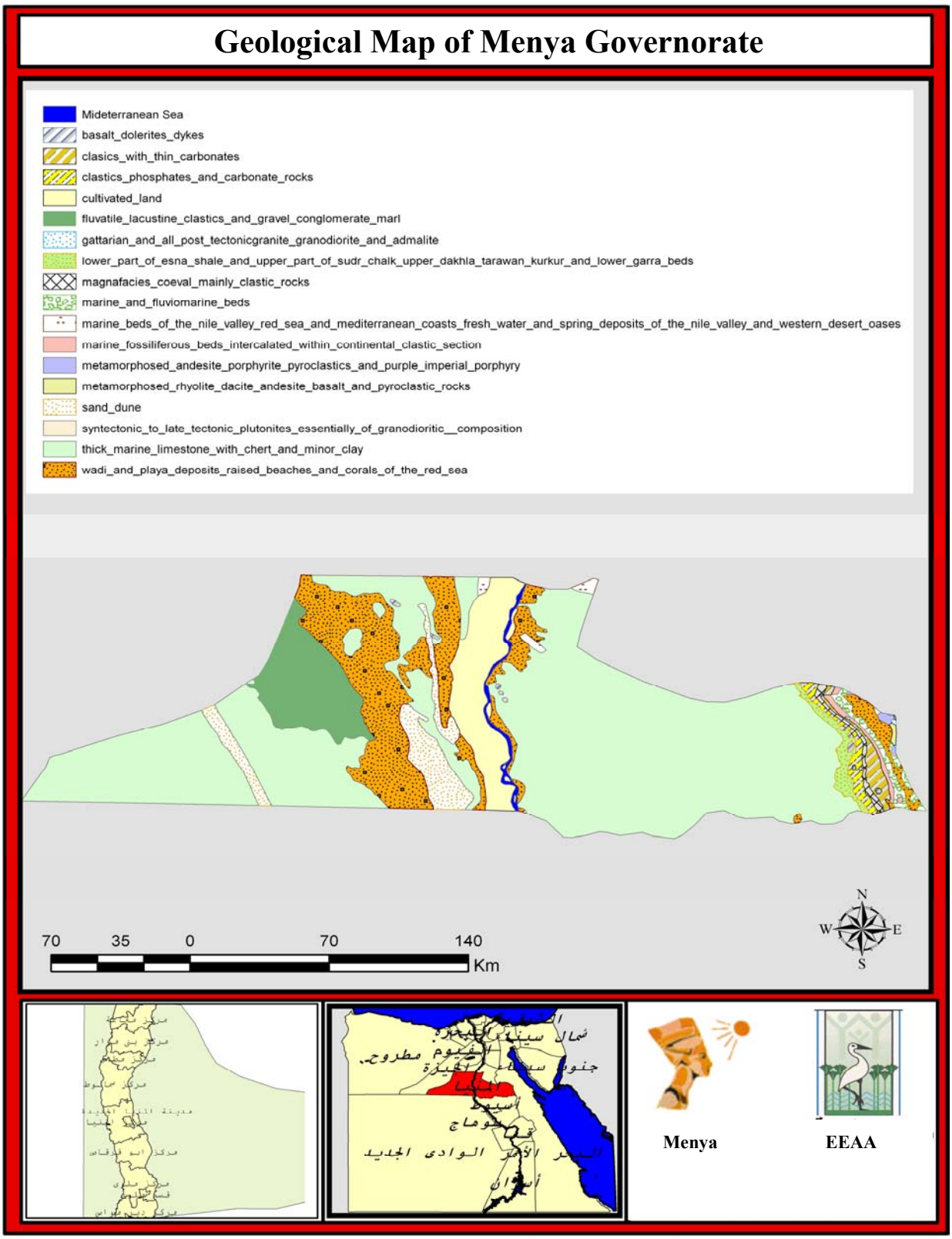
3-2-3 Geological formation and its relation with earthquakes

Studying this area illustrates that the lime Eocene rocks covering Menya was affected by a number of normal cracks in the Oligocene / Miocene age, that takes a shop of a land fall downs parallel to the Red Sea. Folds are rarely found east of Menya, so the general shape formations in this area takes the main formational shapes of cast Africa

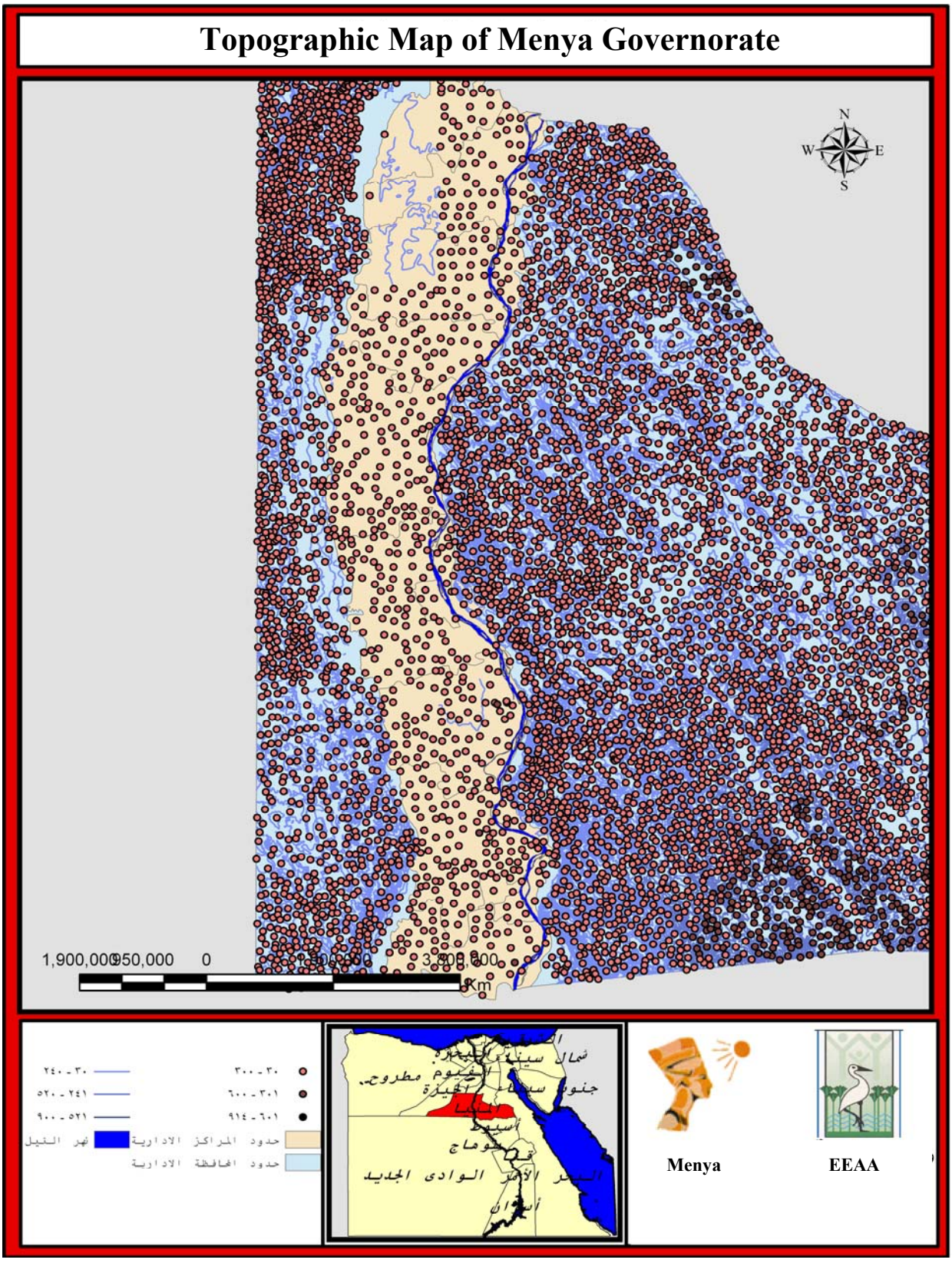
parallel to the Red Sea. As a result, most valleys of draining water take the same direction. East Artifice region is related to the movements and folds of the base rocks in the old ages, therefore, the eastern part of the Nile was affected by the elevation movement that took place in the fourth era and took the North West direction, that is the direction of the Red Sea.

Earthquakes activity in Menya

In light of the available data and what was reported in the regional planning of the governorate, Menya falls within a region of weak earthquake activity with limited effect. In addition, areas of earthquake activity lies the for west and North West the governorate, for enough from the expected inhabitant expansions areas.


Geological Map of Menya Governorate
Mideterranean Sea
basalt_dolerites_dykes
clasics_with_thin_carbonates
clastics_phosphates_and_carbonate_rocks
cultivated_land
fluvatile_lacustine_clastics_and_gravel_conglomerate_marl
gattarian_and_all_post_tectonicgranite_granodiorite_and_admalite
lower_part_of_esna_shale_and_upper_part_of_sudr_chalk_upper_dakhla_tarawan_kurkur_and_lower_garra_beds
magnafacies_coeval_mainly_clastic_rocks
marine_and_fluviomarine_beds
marine_beds_of_the_nile_valley_red_sea_and_mediterranean_coasts_fresh_water_and_spring_deposits_of_the_nile_valley_and_western_desert_oases
marine_fossiliferous_beds_intercalated_within_continental_clastic_section
metamorphosed_andesite_porphyrite_pyroclastics_and_purple_imperial_porphyry
metamorphosed_rhyolite_dacite_andesite_basalt_and_pyroclastic_rocks
sand_dune
syntectonic_to_late_tectonic_plutonites_essentially_of_granodioritic__composition
thick_marine_limestone_with_chert_and_minor_clay
wadi_and_playa_deposits_raised_beaches_and_corals_of_the_red_sea
70 35 0 70 140
Km
N
W
E
S
Menya
EEAA

Map (3)


Topographic Map of Menya Governorate
N
W
E
S
1,900,000
950,000
0
3,800,000
Km
Menya
EEAA

Map (4)

Cracks and new movements of the Earth's crust surface cracks cover most of Egypt, most dangerous of which concentrate in areas of the Red Sea, Suez Gulf and Sinai. It disappears under the Great Sand Sea in the Western Desert. It varies in length direction, horizontal and vertical displacement amount. As for the region of Menya governorate, the layer of lime stone which covers the eastern sector of the governorate nominated to contain the future inhabitant expansions (New Menya city), reaches about 120 m thickness in average in which a group of cracks run through with different and complicated directions concentrated in three main directions.

Such cracks lead to surface splits with different and interlaced directions as well as caves that are filled mostly by lime muddy silt. It lies in various depths ranging at the most between three and five meters. It's worth mentioning that the fluds, which occurs in the region, help increasing the width of such split and caves raising its danger.

As a result, detailed engineered and geotechnical studies must be carried out to determine the exact locations of these splits and caves, the potential impacts and how to face them.

3-3 Water Resources:

3-3-1 Surface water resources:

Water resources in Egypt are restricted in the Nile, flash rain and ground water found in the Egyptian deserts, in addition to the possibility of desalinating sea water. Menya gets a sort of good quality water. Surface water resources in Menya are restricted in the Nile and its branches. Map (5) illustrates surface water courses and canals in Menya.

Rain and floods

Rain is rare in most of Upper Egypt. Generally, rain falls along the Mediterranean cost and decreases towards east. Annual rain fall rates ion Alexandria reaches about 200 mm, and decreases to reach 75 mm in Port Said. It decreases even more when we head inside to reach 25 mm in Cairo. Rain falls in Upper Egypt during winter only in the form of irregular rains that can't be depended upon as a source of water. As shown in table (4) that little. February is the rainiest month, with rain amount of 1.5 mm, whereas no rain falls during winter, where the amount of rain in winter in Menya reaches 4 mm.

Since building the High Dam, there are no river floods in Menya. As for rain floods in generally talks place in Upper Egypt as a result of the strong rainy storms that last for very short periods & result in running surface water with high draining rate in short time. It talks its way to the Nile through previously mentioned valleys that are called rain floods spills as sudden heavy rains are collected in its runways leading to damages in the building existing in the valleys' spills.

Of these valleys are (Sannora valley, Al-Fakira, Om Sally, Mawatheel, Al-Model, Sharona, Al-Harafeesh, Al-Tarfa, Gurff El-Dier, Al-Tuhnawy, Al-Dahsa, Sheikh Mohammed, Al-Askes, Al-Shorafa, El Kom Elahmur). All these valleys penetrate the hill east of Nile in the governorate's area, they also slide from east and south east from an altitude that exceeds 150 m until they pour in the Nile. Most of these valleys cause mild-dangerous rain floods (Map 6 illustrates the islands and valleys in Menya). Some of the main reasons that cause rain floods some of the main reasons that cause rain floods are :

- The dry desert climate, as it is characterized by sudden heavy rain.
- Absence of plant covers for the soil above the lime hill at the east.

River Nile

98% of Egypt's fresh water comes from outside its international boundaries. The Nile provides Egypt with more than 95% of its water needs. It is the second largest rivers in the world, with length of more than 6800 km. The area of its basin is 3 million km^2. The Nile runs in ten African countries and supply them with water through two main branches : the blue Nile which originates from the Ethiopian Hill, and the white Nile which originates from the aquatic Hill.

Egypt's average share from the Nile's water is estimated by 84 billion m^3 in Aswan; however, water running in the Nile depends on Seasonal variety. According to the 1959 agreement signed with Sudan, Egypt's share reaches 55.5 billion m^3 from the available water resources. The amount of lost water reaches 10 billion m^3 in the High Dam lake.

The High Dam is the main regulator for the flow of the Nile's water. The water from the bottom of the Dam transfers from the main canal to a heavy net of irrigation canals to provide the water necessary for agricultural use. The excess water is collected through a network of covered and opened drain in Upper Egypt generally, and in Menya specifically. Most of the excess water turns to the main canal of the Nile. Excess water in Delta, however, turns to the Mediterranean Sea and the Northern lakes. The current irrigation system in Egypt was set 150 years ago. It established a number of arches to control water levels. There are seven main systems to control the water after it crosses the High Dam. These systems serve about 13 canal covering 80% of the irrigation water that comes from the main canal of the Nile. Table (17) illustrates the reservoirs and the arches controlling the water of the Nile after crossing the High Dam.

Table (17) Reservoirs and arches regulating water distribution of the Nile in Egypt

Serial	Reservoirs and arches	Distance after passing the high Dam in k .m .	Date of completion	Date of adjustment 1912 - 1933
1	Aswan reservoir	6	1902	
2	Old Essna arches	170	1908	
3	New Essna arches	171	1994	
4	Nagè Hammady arches	359	1930	1948 Unused till now
5	New Nagè Hammady arches	363	Establishment started in 2002	
6	Assuit arches	549	1861	1901 unused till now
7	Old Delta arches	950	1939	
8	New Delta arches	950	1902	1945
9	Zefta arches	1045 (Dameitta branch)	1950	
10	Edfena arches	1170 (Rashid brianch)		

Source / Irrigation in Menya

Since building the High Dam, and through these systems, full control was acquired over the flow of the Nile's water in Egypt. Moreover, controlling the annual average of the water running was achieved so that it doesn't exceed the agreed upon share. Water coming from the High Dam is distributed through irrigation networks that cover most of the valley and the delta. Irrigation water is distributed either through main canals that take its waters from the Nile directly and then feed sub canals, or the water is being pumped directly through elevating stations, which applies on Menya.

Table (18) Distributing surface water according to usage in Menya governorate

Serial	Usage	Amount	
1	Agriculture	3.6288 billion m^3/year	Most of the drinking water comes from ground water.
2	Drinking water	0.0539 billion m^3/year	
3	Industry and other uses	0.6366 billion m^3/year	

Source: Irrigation and Potable Water Company in Menya.

Canals and drains

Some canals crosses Menya, most important of which are :

- Ebrahimeya canal, it crosses the governorate from the South to the North in the middle of the precipitate plain in the middle of Menya. Out of this canal branches the sub canals that are spread over Menya.
- Bahr Youssef is considered from the main canals that run from the South to the North. It lies on the western edge of the populated area.

- The Nile, Bahr Youssef and Ebrahimeya canal, and their main branches, are considered the acceptable main surface sources of drinking water.

As for the drains, Menya is divided; drain wise, into two main parts:

1- The part that lies east of the Nile.
2- The part that lies west of the Nile between it and Ebrahemya canal. The slide in both locations helps draining in the Nile. As for the part that falls between Ebrahemya canal and Bahr Youssef, surface drain in concentrated represented in a network of drains as will be mentioned later in this report.

Types of surface water:

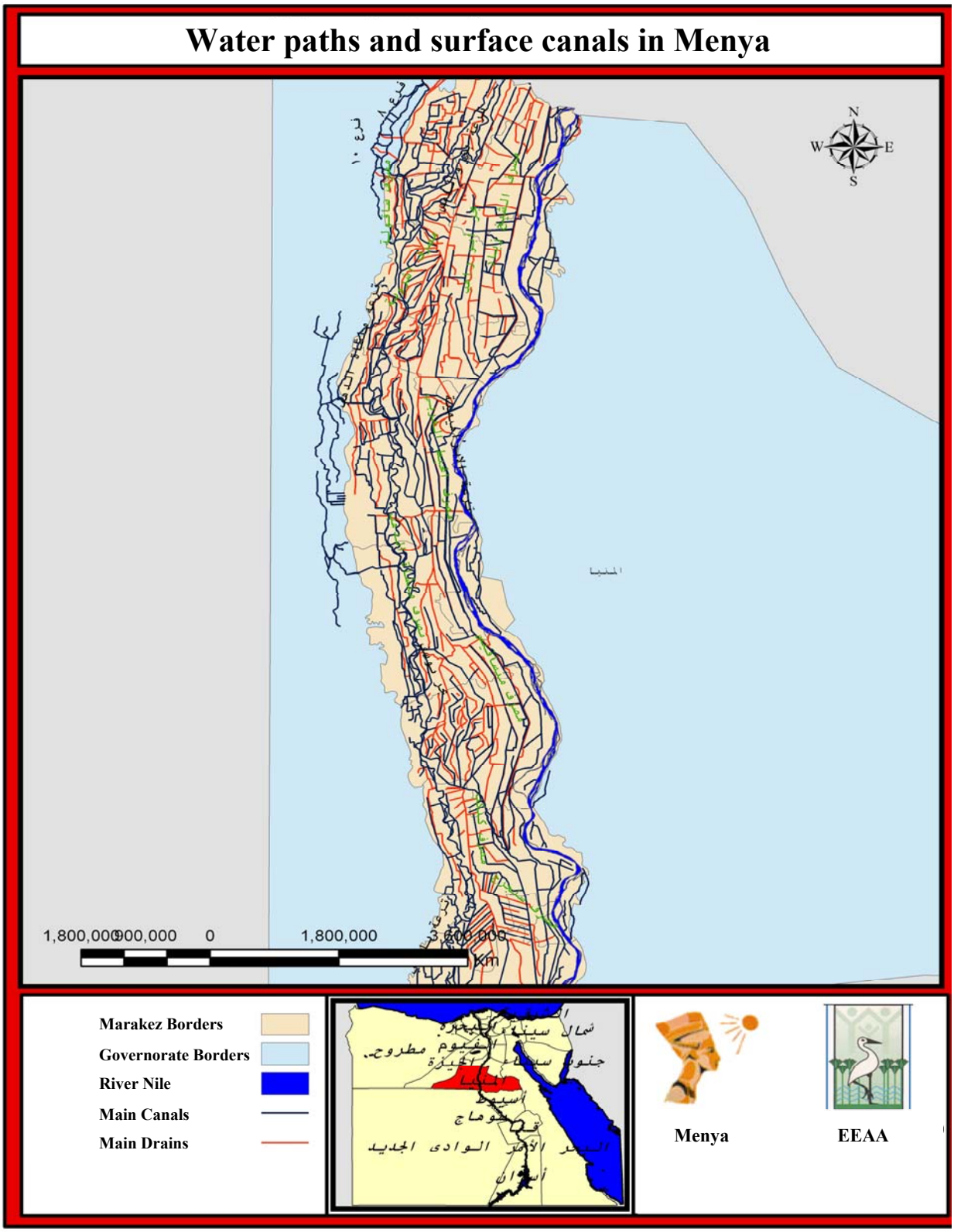
Menya is provided with an acceptable kind of water from the Nile and the main canals branching out of it. However, most of the agricultural drains the pour in the Nile are highly polluted and throw large amounts of pollutants including all types of agricultural industrial and human drain water, in addition to oils and wastes resulted from the boats. Such impacts appear clearly when the river runs in the urban and industrial populated area.

The next data are achieved to evaluate the Nile's water through a survey done by the National center for water researches 2001-2002 and according to Egypt's plan towards national resources of water 2001.

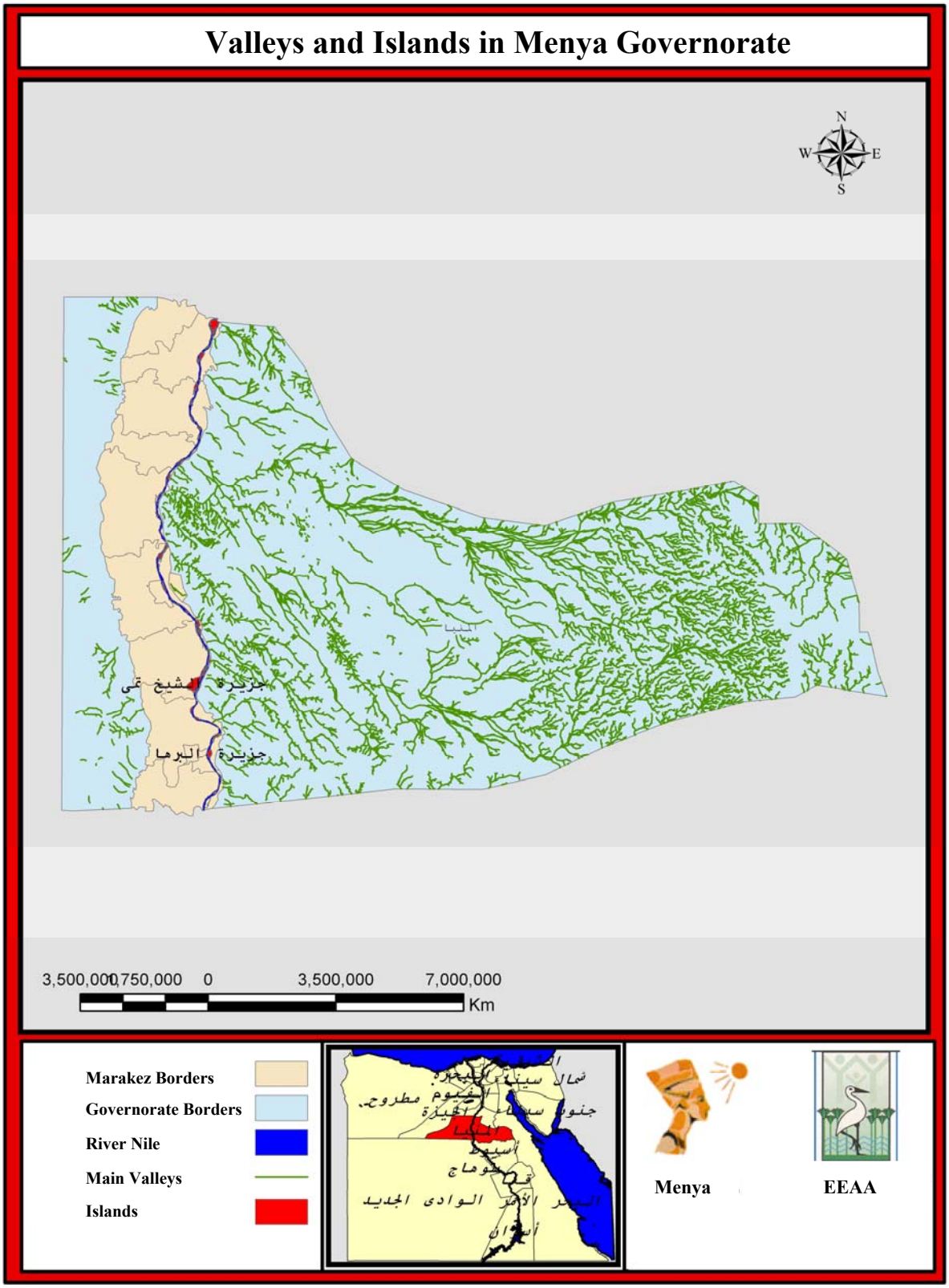
67 agricultural drains throw the water wastes in the Nile between Aswan and El-kanater. 43 of them were tested, and it was found that only few of it is compatible with the determined standards of law 48, year 1982, article 65 that regulates the type of drain waters which can be

mixed with the Fresh water. The worst water among these drains was coming from the following drains :

1- Khor Elseil in Aswan.
2- Kom Ombo.
3- El Barba.
4- Etsa (El-Mohit) which is the main drain in Menya. It was found that it throws the highest load of organic substances (57 tons of chemical oxygen/day – 51.7 active oxygen / day. EEAA, Assuit RBO made a survey to examine the waters of El-Mohit drain in the governorate in February 2006. The sample was not compatible with the legal standards. These was a shortage in the dissolved oxygen, and an increase in the percentage of each of the absorbed active oxygen, the consumed oxygen, total of solid substances, oils and fats, total alkaline, iron and cyanide, the thing that reflects how polluted is this water and how dangerous are the impacts of mixing it with the Nile, as illustrated in table (19).


Water paths and surface canals in Menya
N
W
E
S
1,800,000
900,000
0
1,800,000
Km
Marakez Borders
Governorate Borders
River Nile
Main Canals
Main Drains
Menya
EEAA

Map (5)


Valleys and Islands in Menya Governorate
N
W
E
S
جزيرة الشيخ عمى
جزيرة البرها
3,500,000 1,750,000 0 3,500,000 7,000,000
Km
Marakez Borders
Governorate Borders
River Nile
Main Valleys
Islands
Menya
EEAA

Map (6)

Table (19) Results of observing and lazing waste water of Moheet drained in Menya

Serial	Indicator	Measuring unit	Result	Allowed limits according to law 48 of year 1982
1	Temperature	C	23	5 degrees above normal
2	PH	UNT	7.3	7 – 8.5
3	Electrical conductivity	MS – CM	0.925	-
4	Dissolved oxygen	PPM	3.3	Not less than 5
5	Turbidity	UNT	68	-
6	Absorbed active oxygen	PPM	38	10
7	Chemically consumed oxygen	PPM	200	15
8	Total dissolved solid substances	PPM	615	-
9	Total suspended doled substances	PPM	5	-
10	Total solid substances	PPM	620	500
11	Fats and oils	PPM	0	-
12	Sulphides	PPM	15.4	-
13	Nitrates	PPM	8.6	45
14	Nitrates	PPM	0.2	-
15	Total nitrogen	PPM	12.1	-
16	Total Hardness	PPM	210	-
17	Alkalinity	PPM	249	50-300
18	Total organic carbon	PPM	430	-
19	Chlorides	PPM	60.6	-
20	Fluorides	PPM	0.46	0.5
21	Soleplates	PPM	241	-
22	orthophosphate	PPM	2.3	-

Serial	Indicator	Measuring unit	Result	Allowed limits according to law 48 of year 1982
23	Total phosphate	PPM	6.9	-
24	Iron	PPM	1.8	-
25	cadmium	PPM	0.0005	0.01
26	Lead	PPM	Nd	-
27	Zinc	PPM	Nd	1
28	Chrome	PPM	0.0007	0.01
29	cyanide	PPM	0.06	0.01

Source: EEAA, Assuit RBO

In general, drains are not compatible with the quality standards of the surface wastes that are stated in law 48 of the year 1982. In many cases, they may represent health hazards on the population most of the health care problems in fact are related to the sewage. Most spreading diseases among the population are those resulting from water contamination (such as HIV and Typhoid) Table (20) illustrates the results of the monitoring campaign done by the National Institution for water researches during 2001, to determine the type of water in the Nile which is considered the main source of water in the governorate, since there were no up to date available.

Table (20) Results of observational campaign carried by the national center of water research in 2001 (quality of surface water)

Serial	*Distance from the High dam*	*Chemical oxygen*	*Active oxygen*	*Total dissolved solid substances*	*Colonic bacteria*
	Criterion	*Long/Liter*	*6mg/Litre*	*500mg/Litre*	*Not available*
1	5	7	1.25	171	0.2 E 1.6
2	21	10	1	170	0.2 E 3.5
3	53.8	15	1.45	169	0.2 E 6.5
4	83.4	15	1	175	0.2 E 1.2
5	110	7	1	188	0.2 E 4
6	148	22	1.46	184	0.3 E 1.2
7	168	12	1.23	183	0.1 E 5
8	206.9	5	1.37	186	0.3 E 2.5
9	222	14	1.72	189	0.3 E 3
10	277	6	2.36	190	0.2 E 6
11	311	9	2.86	191	0.2 E 1.6
12	361	10	2.26	194	0.2 E 4
13	397	12	1.56	197	0.2 E 3.5
14	448	5	2	198	0.2 E 1.5
15	489	11	1.92	202	0.2 E 5
16	512	10	2.6	204	0.2 E 5
17	532	9	2.34	208	0.2 E 7.5
18	545	14	2.46	205	0.2 E 6
19	587	14	2.46	200	0.2 E 8
20	635	14	2.5	204	0.2 E 4
21	683	27	2.19	205	0.2 E 6.5

22	617.6	18	2.2	209	0.2 E 1
23	748	16	1.86	211	0.1 E 8
24	792	8	1.8	213	0.1 E 9
25	815	12	1.99	216	0.2 E 8
26	832	14	2.37	220	0.1 E 3
27	874	17	2.47	229	0.2 E 3.5
28	888	15	3.25	231	0.2 E 1.6
29	902	22	2.51	248	0.2 E 8
30	922	17	3.5	235	0.2 E 1.2
31	938	15	3.31	235	0.3 E 1
32	967	24	3.28	240	0.2 E 6.5

Source: Research Center (Irrigation)

From the illustrated data, we can deduce the following:

- There is a big difference in location distribution of the possible number of colonial group along the Nile.
- There is an increase in number of the colonial group around drains which shows concentrations of unprocessed human wastes.
- There is a gradational increase in the salinity whenever we head north; still, organic loads are within natural capable limits. Along this part of the Nile (from Aswan to Kanater), the river is compatible with the standards of Egyptian waters type in regard to the amounts of non organic substances. It is also considered close in comparison with the main rivers around the world regarding total contamination. This is basically related to the impact of easing up methods as well as the

attraction of the Nile precipitation to the heavy metals and any other components.

- As for the main canals, there are no available data regarding the type of these waters through laboratorial analization. These waters, as well are subject to contamination especially that some of it passes along or through population blocks. They are also being misused by the people throwing home wastes or dead animals.

3-3-2 Ground water resources

Introduction

Ground water is found on depth ranging from 80: 150 cm from the surface of the outpouring plain in Menya in most of its parts as a result of the Nile's water leakage and irrigation water leakage. Such water is easily acquired through digging non deep wells, or are pumped up. Under surface water as well appears at the rock bottom of the Eastern hill as a result of the leakage of part of the rain due to its loose precipitations in addition to what the valleys bring from rain floods. Moreover, the interiors of these valleys itself are considered suitable places to obtain subsurface waters through digging not too deep wells.

Inside water system in Nile valley and water rock surface Nile inner reservoir in Menya is found under the outpouring plain cut by the river's path, as well as the canals & drains, where agricultural land spread. This reservoir belongs to the rocks of the late fourth and third age with lentil-like mud intertwines. It's thickness ranges between 30-150 m, and with drain rate of 80-280 m^3/hr. The cover of this reservoir consists of fine sand grains with pebbles and black mud, where the excess surface water, as well as water leak from the Nile and the canals leak to the layers holding the ground water.

Several areas depend on this reservoir for agriculture, especially in the areas of agriculture expansions. It is also used for drinking using manual pumps. Salinity degree in these waters ranges between 500 or less : 2230 in the million. The thickness that could be penetrated in the reservoir ranges between 9-40 m. Mostly there is no connection between the Nile inner reservoir and the Delta reservoir. The thickness of the precipitation that are carrying the water decreases at Cairo reaching (several meters). This is related to the presence of folds resulted from the earths operations in the ages pre the tri-Eocene.

The water is this reservoir is present in circumstances that are semi-limited to the old agricultural lands. Generally, the water in this reservoir moves towards North in the direction of the Earth's surface slope. Permeability factor of this reservoir ranges between less than 1000 m^2/day to 15000 m^2/day.

Ground water system in Carbon compounds carbon compounds in Menya are represented in the lime stone. A lime stone is considered a water reservoir in case there were cracks and partitions that are filled with water. Lime stone covers about 50% of Egypt's total area. The inner reservoir of the lime stone can be divided into 3 layers as follows:

1- Bottom layer related to the upper cretaceous age.

2- Middle layer related to the lower and middle Eocene age.

3- Upper layer related to the middle Miocene age.

Impermeable mud precipitations supplies separate the three layers from each other. They are formed from Essna loam components with thickness of about 100 m, and Dub'a loam components with thickness of about 200 m. most of the time, there exists Nobian sand stone precipitations above the lime stone reservoir that obtains it waters from

the vertical movement of the water in the Nobian reservoir in addition to the local rains.

The lime stone reservoir in Menya is related to the middle Eocene age. It is found under all the desert western surfaces of mild altitude, and the Eastern part located east of Mattay and Beni Mazar east of the Nile. The reservoir if formed from cracked lime stone of about 40 to 80 m thickness , and draining rate ranging from 40 m^3/hr to 80 m^3/hr. Studies run at the Faculty of Science – Geology Department proved that the capability of this reservoir is average and that there is a connection between it and the Nile from the Eastern side.

Ground water movement, supply and drain

Levels of ground waters vary though the year, ranging from several up to one meter. The general direction of the water is towards the north. However, in the areas next to the Nile, the direction of the wat4r is mostly from the reservoir to the Nile.

The inner reservoir of the Nile valley in Menya is supplied from the leakage of the excess irrigation water) from the canals and the agricultural lands). The amount of such water varies according to the type of the soil and the method of irrigation. In the sand soils, at the sides of the Nile valley, the rate of vertical drain ranges from 1 and 2.5 mm/day, whereas it reaches 1 m in the agricultural soils covered with mud.

Draining from the inner reservoir takes place through the leakage of the ground water to the Nile especially during the demand on water, when the Nile level decreases and the water leaks from the reservoir to the Nile pumping is also another way of draining from the reservoir whether this draining is for drinking purposes or industrial and agricultural ones.

There is a static around the amount of ground water drained annually, but it's not accurate. According to what is mentioned in some of the scientific researches at the Faculty of Science (geological department), Menya university, and the public department of the ground water in Menya, thus amount reaches about 612.08 million m^3/annually, distributed as follows:

Table (21) Ground Water distribution.

Serial	Usage	Amount in million m^3/year
1	Domestic and drinking	60
2	Agricultural	549
3	Industrial	3.08

Source : Faculty of Science and The department of ground water in Menya.

Ground waters system in Noba (Nobian sand stone) Menya governorate falls in the range of the nobian sand stone reservoir that covers vast areas of the eastern and western deserts, the Nile valley and parts of Sinai. The upper layer of this reservoir appears in Aswan on the surface and stretches north under the newest rocks and runs deeper in the north direction that the waters of this reservoir are found in Cairo under 3000 m depth. It is supposed that the sulphuric waters of Ein Helwan are captured waters in the layers of the nobian sand stone, that appeared to the surface as a result of its presence above geological formation that lead to such thing. The thickness of the ground reservoir reaches 300 m in Sohag governorate and decreases towards the North and the South to reach several meters in Cairo to the North and Edfo to the South. A layer of muddy beliocene covers the bottom of the reservoir. The phenomenon

of the hydraulic connection between the inner reservoir in the Nile valley and the sand stone reservoir is still under research. This reservoir is considered the main ground water reservoir in Egypt. In order to benefit from its waters, accurate studies should be done to determine the depth in which it is found, as well as estimating its amounts and the best ways to get it out.

The Nubian sand stone reservoir in Egypt is considered a part of the regional Nubian reservoir stretching between Libya, Sudan and KSA. It can be divided in Egypt into 5 basins:

1- In the western desert : where the ground reservoir is divided into several consecutive layers of muddy sand stone that separate the layers carrying the waters into several reservoirs. The water moves towards east with a hydraulic graduation of about 0.05 m/km.

2- In Aswan region and its southern expansion: the Nubian sand stone reservoir is found appearing on the surface, as it is considered a part of the regional reservoir in the western desert. The ground reservoir disappears towards North under a layer of a precipitation succession of the post nobian sand stone rocks.

3- In the eastern desert: capabilities and expansions of the Nubian sand reservoir haven't been determined yet.

4- Suez Gulf and the Red Sea region: Data indicate the presence of the restricted nobian sand stone reservoir, the contains high salinity waters (more than 100.000 in a million).

5- Sinai peninsula : the amount of water stored in the Nubian sand stone reservoir is estimated to be 1000 billion m^3. These inner water are locked and formed in the old ages (late Pleistocene) in addition to the surface supply resulted from the rain.

The pizometric pressure of the reservoir in the middle of Sinai reaches 200 m above the sea surface, and the total salinity degree reaches about 1500: 5000 part in a million.

Possibility of developing the ground water

In order to study the possibility of developing the ground reservoir, we have to evaluate the kinds of the existing inner reservoir, as well as the uses of the lands in the region. The Nile valley reservoir is considered of high potentials in the area directly surrounding the river path, and decreases she we head towards the desert, as it is a renewable reservoir. As for the Nubian sand stone reservoir, it is of low potentials regarding Menya, where as the lime stone reservoir is of average potentials. The ground reservoir of the Nile valley is supplied from the excess what leaking from irrigation as well as he canals. On the other hand, draining from the reservoir takes place when the ground waters leak to the Nile, especially in cases of demand on water, and for agricultural, industrial and drinking uses that reaches about 612 m^3/year.

Knowing the potentials of the grounds reservoir in the governorates requires detailed studies to locate it and use it in a bigger way in the parts that can be reclaimed in the desert areas.

As a matter of fact, a co-operation protocol between Menya governorate and nuclear substances Institution was signed dated 30-8-2003. As a result, the Institution was committed to execute a water map for Menya to determine the areas that could be cultivated after being reclaimed according to this map. Indeed, parts for agricultural reclamation was determined a several areas in the desert hinterland in the governorate, east and west of the Nile. Currently, some of these areas are being used to establish model villages in the desert hinterland of Menya. A discovery well in under construction in the areas of Tuna El-Gabal in Mallawi to serve plantation and establishing a model rural society.

Quality of ground water

It has been shown previously that the salinity level of the Nile inner reservoir ranges between less than 500 to 2230 parts in a million. Ministry of health, represented in the health and population management in Menya, takes samples from every well once a month, especially those used for drinking. The quality of water of 52 well all around Menya was analyzed. Results show that only 7 wells are compatible with the Egyptian standards related to the quality of water (potable water), where as the result of 45 well was not compatible with one or more of these standards.

3-3-3 Untraditional water resources

Although the Nile is considered the main resource of fresh water in Egypt, there are other water resources that can be used to fulfill water needs. These supplement resources are known as untraditional resources, they include the following:

1- The renewable ground reservoir in the Nile basin.

2- Reusing agricultural draining water.

3- Reusing processed waste water.

Nevertheless, these resources can't be considered a dependable source except after running studies that determine its amount and type. Therefore, we can't add them to the water resources in Egypt. Moreover, these resources are only a reuse of water that ha been used before in a way that improves the efficiency of the water distributing system. This depends on the number of times the water is being reused. In addition, these resources can be used and managed carefully to avoid counter environmental impacts or the possibility of the deterioration of the water or the soil quality.

Table (22) distribution of untraditional resources within the governorate.

Serial	Resource	Amount	Percentage from total amount	Notes
1	Agricultural drain	558.5 million m^3/year	90%	Amount of untraditional resources …
2	Industrial drain	43.435 million m^3/year	7%	
3	Sewage	18.615 million m^3/year	3%	

Source: Irrigation management in Menya.

Agricultural drain water

The amount of water drained from the agricultural lands that drain in the Mohit (the main drain in the governorate) is considered relatively big, as it reached about 1.5 million m^3 daily, that is redirected back to the Nile through Atsa drain opening. Mohit serves an area of 105.000 feddans equipped with a network of covered drain. Excess agricultural water goes to Mohit then to the Nile without any processing at Etsa village, Samallout.

Resources of agricultural drain water are restricted to the following:

- Agricultural drain and canals leakage.
- Running surface water from the fields.
- Vertical leakage from the soil.

Note:

Waters in this drain is mixed with sewage waters (some of which is processed and some isn't) from the two sewage stations of Menya city and Abo Korkas. Moreover, this drain receives industrial drain sewage some of which is processed, whereas some is not. It's worth mentioning that this drain is considered a contamination center in Menya because of the unprocessed wastes it receives.

Processing waste waters :

In order to obtain new water resources, processed sewage water is usually used for agricultural uses, whether by mixing it with fresh water, or using it alone. Demand on water has increased because of the domestic use, population growth, life style improvement and the increasing industrial demand over the water. As a result, demand increases on the water than can be processed and reused.

The amount of processed sewage in Menya reaches 85: 100 thousand m^3/day, produced from the processing stations of each of Menya city, Abo Korkas, Odwa, Deir Mowas, Bahnasa village). It is also planned to complete sewage projects in the rest of the cities, the thing that will result in producing about another 110 thousand m^3/day in addition to establishing Menya station in the western desert hinterland with potential production of about 120 thousand m3/day. The current Menya station was designed during the 70s to process a max. amount of 40 thousand m^3/day. However, it receives daily more than 60 thousand m^3/day, which means thus more than half of this amount is pumped to Mohit drain un processed or processed inefficiently.

Agricultural drain can't be processed. The opening of the drain is consequent along the drain across the governorate which makes it difficult to control its processing.

As for the industrial drain, it is being partially processed in Abo Korkas Sugar Factory, and it's not enough. Worth mentioning, the processed or unprocessed sewage water in Menya are not reused.

The quality of untraditional water resources:

Table (23) illustrates the quality of well waters used for drinking in the governorate. No data, however, are available regarding the wells used for agriculture. A water map for the governorate in currently under preparation.

Table (23) water quality results in the governorate's wells (ground water quality).

Wells description	No. of wells
Total no. of chosen wells	181
Wells consistent will all the standards	33
Wells consistent with iron standards	151
Wells consistent with manganese standards	73
Wells consistent with the natural characteristics standards	140
Wells consistent with the chemical characteristics standards	53
Wells consistent with the bacteriological standards	143
Wells inconsistent with iron and manganese standards	16
Wells inconsistent with the chemical characteristics standards	95
Wells inconsistent with the bacteriological standards	37
Wells inconsistent with iron, manganese and chemical characteristics standards.	46
Wells inconsistent with iron, manganese, bacteriological and chemical characteristics standards.	1
Wells inconsistent with iron, manganese and bacteriological standards.	1

Source: Potable and waste water company in Menya.

The following tables illustrate the samples taken from the lost terminal of the sewage purification stations in Menya city and Abo Korkas, the compatible and the non compatible and the reason behind non compatibility through the period from May 2004 till June 2005.

Table (24) Report of the samples taken from the find term in of the sewage purification stations in Menya and Abo Korkas

S	Name of station	Markaz	Samples dates	*Total Sample*		Drainage orientation	Reasons of inconsistency
				C	IC		
1	Sewage purification station Talah	Menya	23-5-04		IC	Moheet	Increase in Suspended substances and banned oxygen
2	Sewage purification station Talah	Menya	27 – 6 – 04		IC	Moheet	Increase in suspended substances and oxygen article 66
3	Sewage purification station Talah	Menya	13 – 7 – 04		IC	Moheet	Increase in suspended substances and oxygen
4	Sewage purification station Talah	Menya	28 – 7 –4		IC	Moheet	Increase in suspended substances and oxygen
5	Sewage purification station Talah	Menya	26 – 8 – 04		IC	Moheet	Increase in suspended substances and oxygen
6	Sewage purification station Abo Korkas	Abo Korkas	9 – 10 - 04		IC	El – Dayra	Increase in suspended substances and oxygen
7	Sewage purification station Talah	Menya	26 – 10 - 04		IC	Moheet	Increase in suspended substances and oxygen
8	Sewage purification station Abo Korkas	Abo Korkas	23 – 11 – 04		IC	El – Dayra	Increase in suspended substances and active oxygen
9	Sewage purification station Talah	Menya	16 – 12 – 04	C	IC	Moheet	Increase in suspended substances, oxygen, fats and oils.

S	Name of station	Markaz	Samples dates	*Total Sample*		Drainage orientation	Reasons of inconsistency
				C	IC		
10	Sewage purification station Abo Korkas	Abo Korkas	21 – 12 – 04		IC	El - Dayra	-
11	Sewage purification station Talah	Menya	30 – 1 – 05	C	IC	El - Dayra	Increase in suspended substances and oxygen
12	Sewage purification station Abo Korkas	Abo Korkas	2 – 2 – 05		IC	El - Dayra	-
13	Sewage purification station Talah	Menya	24 – 2 - 05		IC	Moheet	Increase in oxygen and soleplates
14	Sewage purification station Talah	Menya	24 – 3 – 05		IC	Moheet	In crease in suspended substances, fats and oxygen.
15	Sewage purification station Talah	Menya	17 – 4 – 05		IC	Moheet	Increase in active and acidic oxygen and suspended substances
16	Sewage purification station Abo Korkas	Abo Korkas	17 – 4 – 05	C	IC	El – Dayra	-
17	Sewage purification station Talah	Menya	26 – 5 – 05		IC	Moheet	Increase in active oxygen.
18	Sewage purification station Talah	Menya	30 – 6 – 05		IC	Moheet	Increase in active oxygen.

C: Consistent **Source / Health and population management in Menya**

IC: inconsistent

It is shown from table (24) the non compatibility of 15 sample out of 18, the thing that confirms the contamination of this drain.

Table (25) plants and factories draining in public water paths with in consistent results Samples were talon by Health and population management in Menya from 1 – 5 04 till 30 – 6 – 05

S	Name of station	Markaz	Samples dates	Drainage orientation	Reasons of inconsistency
1	Factory of drying agricultural crops	Maghagha	24 – 5 – 04	Inside the ground	Increase in fats consistency
2	Tambo factory for drying agricultural crops	Maghagha	1 – 6 – 04	Raheb drain	Increase in fats, oils and oxygen
3	Kidvany filtered water operation (electric washing)	Menya	15 – 6 – 04	The Nile	Inconsistent, article 61 of the law
4	Becho ice cream factory	Beni Mazar	14 – 7 – 04	Amyaa' canal	Inconsistent, article 62 of the law
5	Odwa filtered water operation (filters washing)	Odwa	28 – 7 – 04	Bahr youssef	Increase in suspended substances
6	Beni Amer filtered water operation (filters washing)	Odwa	9 – 8 – 04	Bahr youssef	Increase in suspended substances
7	Sarayra water operation	Samallout	6 – 11 – 04	The Nile	Increase in suspended substances
8	Fish incubator in atahrah	Abo korkas	9 – 11 – 04	The Nile	Increase in fats, oils and suspended substances
9	Odwa water operation (filters washing)	Odwa	10 – 11 – 04	Bahr youssef	Increase in suspended substances
10	Sugan factory in Abo Karkas	Abo korkas	11 – 1 – 05	El – Dayra	Inconsistent with article 65

11	Sugar factory in Abo Karkas	Abo Korkas	27 – 2 – 05	El – Dayra	Inconsistent with article 65
12	Factory of drying agricultural crops	Maghagha	8 – 3 – 05	Sheikh Zayed drain	Inconsistent with article 65
13	Fish incubator in Matahra	Abo korkas	9 – 3 – 05	The Nile	Inconsistent with article 61
14	Mobile water operation(filters washing)	Menya	17 – 3 – 05	The Nile	Inconsistent with article 61
15	Nasr factory for Halawa in Tiba	Samallout	22 – 3 – 05	Monshét El-Dahab canal	Inconsistent with article 62
16	Tambo factory for drying agricultural products	Beni Mazar	23 – 3 – 05	Raheb drain	Inconsistent with article 66
17	El- Raey factory for Halawa in Tiba	Samallout	20 – 11 – 05	Monshaét El – Dahab canal	Inconsistent with article 62
18	Tambo factory for drying agricultural products	Beni Mazar	27 – 4 – 05	Raheb drain	Inconsistent with article 66
19	Factory of drying agricultural products	Maghagha	2 – 5 – 05	Sheikh zayyed drain	Inconsistent with article 66
20	Lady land ice cream factory Beni Mazar.	Beni Mazar	16 – 5 – 05	Amyaa' canal	Inconsistent with article 66
21	Betcho land ice – cream factory	Beni Mazar	21 – 5 – 05	Amyaa' canal	Inconsistent with article 62
22	Tweety factory for drying agricultural products	Maghagha	7 – 6 – 05	Da hamro drain	Inconsistent with article 66
23	Tahana El Gabal filtered water operation.	Menya	29 – 6 - 05	The Nile	Inconsistent with 61

Source / Health Management in Menya

Table (25) shows the non compatibility of the industrial drain samples in all the industrial plants the throw its wastes in the waters, during the determined period. However, some of these factories have reestablish its status, which are the ice-cream factory in Beni Mazar, the Halawa tehinyya and drying agricultural crops factories in each of Maghagha and El-Kom el Ahmur as well as the fish incubator. It's worth mentioning that the result of the last sample taken from the drain of the sugar factors dated 17-5-2005 was compatible with the standards of draining in water runways.

3-4 Land Resources

3-4-1 Land usage in the governorate

The total area of the governorate reaches 32279 km^2, whereas the area of the agricultural land is 437957 feddans. A big percentage of this area is second and third degree Nile valley lands containing thousands of years ago. This cultivated area is used more than once in producing traditional crops such as cotton, wheat, rice and others.

3-4-2 Land reclamation in the governorate

The area of the land applicable for reclamation and cultivation is about 26500 feddans, which is good potential for horizontal agricultural expansion (18000 feddans west of Beni Mazar, 6000 feddans west of Samallout, 2500 feddans and east of Abo Korkas). Worth mentioning is that these areas have already been reclaimed. Area of land applicable for reclamation is more than 200000 feddans within the governorate.

However, these areas have to the doubled more than once in order to achieve a balance between the areas cut from the agricultural lands for construction and services and the newly reclaimed areas beside the increase in the population (about 3% annually). Table (26) shows the distribution of the land use in the governorate, which will be explained in details in the chapters of the urban growth and the agricultural activity. Table (27) illustrates the desert lands applicable for reclamation.

Table (26) land areas (km) and their uses in Menya governorate.

S	Location	Urban Rural	Total area (km2)	Populated Area (Km2)				
				Housing	Utilities and cemeteries	Lakes and waste lands	Agricultural and inside zemam	Agricultural lands outside zemam
1	Menya		312.3	14.457576	2.9710721	4.902948	290	16976 surface km, presidential decree 2020 of the year 1971 in the west Desert. 13206 surface km presidential decree 24 of the year 1994 in the East Desert.
2	Mallawi		293.28	13.368598	3.1803072	4.120558	270	
3	Maghagha		209.25	8.703601	1.6335297	2.256825	200	
4	Abo Karkas		250.8	9.027583	1.9667732	4.108028	235	
5	Odwa		139	3.9877650	0.8224633	0.45428	128	
6	Beni mazar		254.28	8.601972	1.6342518	4.306802	243	
7	Deir mowas		153.07	5.678213	5.122751	2.434827	138	
8	Samallout		334	13.384052	2.7590576	6.143295	313	
9	Mattay		157.35	46.03704	0.3523747	1.385027	157	
Total			2103.33	81.80	16.83	29.7	1975	

Source / Agricultural management in Menya

Table (27) reclaimable desert lands along the sides of the eastern and western desert roads.

Location	Area
Eastern desert road towards Mattay markaz	17142
Eastern desert road towards Abo korkas markaz	4166
Eastern desert road towards Mattay markaz	134
Eastern desert road towards Mattay markaz	595
Eastern desert road cost of Maghagha markaz	7319
West of western desert road, Odwa markaz	8570
West of western desert road	4760
West of western desert road	9524
West of western desert road, west of Mattay markez.	3570
Along the sides of the western desert road, west of Abo Korkas markaz	38095
Along the sides of the western desert road, Mallawi markaz	46546
Along the sides of the western desert road, Deir Mowas city	58925
Total reclaimable desert lands	199661

Source / Agricultural management in Menya

The area of the reclaimed desert lands following Agricultural company of Upper Egypt reaches 33000 feddans, irrigated by three elevating station in Tarfa, Kamadeer and Sakoula. However, the actual cultivated area reaches 70000 feddans; therefore, there exists disputes regarding taking over irrigation water shares in the region.

3-5 Biological Variation

Plants

There are no specialized studies in Menya that determine the flora, therefore, the following mentioned plants are the common known ones, some of which are : herbal plants such as wormwood, alfa and colocynth as well as tree plants such as : sycamore, mimosa, camphor and willow trees.

The spread along the canals. There are also the kind illustrated in table (28) that was acquired from the specialists of faculty of science (plant Department), Menya University.

Table (28) Plants existing within the parameter of the governorate

Serial	*Latin Name*
1	**Achillea santolina**
2	**Alhagi maurorum (graecorum)**
3	**Amaranthus ascendens**
4	**Avena fatua**
5	**Beta vulgarais var cicla**
6	**Brassica tournefortii**
7	**Calotropis procera**
8	**Capella bursa-bastoris**
9	**Centaurea calcitrapa**
10	**Chenopodium album**
11	**Chenopodium murale**
12	**Chrozophra plicata**
13	**Cichorium pumilum**
14	**Convolvulus arvensis**
15	**Conyza linifolia**
16	**Cotula anthemoides**
17	**Cuscuta Arabica**
18	**Cynodon dactylon**
19	**Cyperus rotundus**
20	**Datura stramonium**
21	**Dichanthium annulatum**
22	**Echium rauwolfii**

Serial	*Latin Name*
23	**Emex spinosa**
24	**Euphorbia peplus**
25	**Fagonia Arabica**
26	**Fagonia critica**
27	**Farsetia aegyptia**
28	**Gnaphalium luteo album**
29	**Haloxylon scoparium**
30	**Heliropium europaeum**
31	**Siline conoidea**
32	**Sisymbrium irio**
33	**Solanum nigrum**
34	**Sonchus oleraceus**
35	**Sporobolus pungens**
36	**Stipagrostis scoparia**
37	**Tamarix aphyll**
38	**Trifolium resupinatum**
39	**Trigonell hamosa**
40	**Veronica anagallis-apuatica**
41	**Vicia monantha**
42	**Zilla spinosa**
43	**Zygophyllum album**
44	**Zygophyllum coccineum**
45	**Zygophyllum simplex**
46	**Papyrus**
47	**Euphorbia dheterphylle L.**
48	**Sesbania sespen**
49	**Acacia nilotica**
50	**Helitropium supinum**
51	**Hyoscyamus muticus**
52	**Imprata cylindirica**
53	**Juncos rigidus**
54	**Lactuca serriola**
55	**Launaea cassiniana**
56	**Launaea nudicaulis**
57	**Lolium perenne**
58	**Lotus corniculaus**
59	**Malva parviflora**
60	**Medicago hispida**
61	**Mentha microphylla**
62	**Melilotus indica**

Serial	*Latin Name*
63	**Ochradenus baccatus**
64	**Paronychia Arabica**
65	**Phalaris minor**
66	**Phragmities australis**
67	**Plantaga major**
68	**Pluchea dioscoridis**
69	**Poa annua**
70	**Polypogon monosplensis**
71	**Portulaca oleraceae**
72	**Pulicaria Arabica**
73	**Pulicaria crispa**
74	**Reichardia tingitana**
75	**Rumex dendatus**
76	**Salsola kali**
77	**Senecio aegyptius**
78	**Senecio desfontaibei**
79	**Senecio vulgaris**
80	**Corchorus olitroius**
81	**Orobanche ramose L.**
82	**Ammi majus L.**
83	**Brassica (L.) koch nijra**

Source / Faculty of Science – Menya University

Animals:

It is had to determine the zoology of Menya governorate, because of the absence of specialized studies in that regard, although the governorate is characterized by being longitudinal with a big share of the Nile share that reaches to 135 km. Therefore, it is rich in various kinds of plants and animals that live along the Nile, and in the valley, some of which could be endangered and subject to distinction and in need of specialized studies by Menya University or the EEAA explore it and determine its types and numbers as well as preserve it and help it survive.

Although there are no detailed studies about the governorate, this information mentioned in this report about these species was explored

from the publications of the Biological Variation Unit at EEAA about the Egyptian zoology in general. It can be classified to the following categories according to tables (29) and (30).

(A) Mammals

Table (29) Mammels found in the governorate

Carnivores	*Herbivores*	*Rodents*	*Notes*
Represented in night animals rarely seen such as foxes, wolves, hyena and	Represented in mountain goats and some kinds of dears	Mountain rabbits, rates	Bats and rodents are the most mammals found in the Menya

Source / Printables of the Biological Variation Unit in EEAA

(B) Birds:

Birds are considered the biggest animal category present in the governorate. There are more than 90 kinds of birds belonging to 13 categories, 40 kind of which are resident, 9 of which are settled, and 7 kind became rare. The rest of the kinds are immigrant visiting the region during winter, coming from the north, and during summer, coming from south. Table (30) illustrates the various types of birds Menya governorate.

Table (30) various type of binds in Menya

Resident birds	Settled birds	Rare birds	Migration birds	
Small bittern – wild duck – black winged – glede – kestrel – hen – water hen snipe – mountain curlew – plover – spotted sand grouse –ring dove – sucking – owl – horned owl – owl – European hoopoe – pale rock swallow – sky lark – fan tail – warbler crying warbler – piper – Egyptian geese – crow – nightingale - blue pigeon – wheatear - blackbird – sparrow - cattle egret.	Egyptian sand grouse – blue pigeon – Egyptian local dove – European local – dove – hoopoe – warbler – bee eater - bright faced lark Egyptian yellow wagtail.	Crowned grebe – Egyptian glede – Egyptian vulture – small bird – green legged sand piper.	Black neck grebe – heron – big egret – small egret – winter teal – winter teal – sparrow hawk pintail – black glede – buzzard – coot – big – crowned plover – small crowned plover (rare visitor) – snipe – sandpiper – red shank – swallow – fieldfare – gold finch – ortolan – blue headed bunting redstart.	Large crowned plover (irregular summer visitor) – Spanish swallow (irregular summer visitor)

Source / Printable of the Biological variance unit in EEAA

(C) Reptiles and Amphibians:

Table (31) kinds of reptiles and amphibians in the governorate

Type	Rank	Kinds	Notes
Reptiles	1- lizards	Domestic gecko – wide eyed gecko – monitor lizard – small spotted skink – large spotted skink	
	2- Snakes	Sand snake – wall snake – Egyptian copra – bold snake	All of them are semi –poisonous except for the Egyptian copra
	3- Crocodiles	-	-
	4- Turtles	-	-
Amphibians		The Nile frog	Spreads in all the Delta govern orates. It can live both in water and inland.

Source / Printables of the Biological variance unit in EEAA

(D) Fish

Table (32) kinds of fish in Menya governorate

Kind	Notes
Bolti – catfish – grouper – electric ell – labis – shal – snake fish	The most famous of them all is the bolti and the catfish.

Source / Agricultural management (fish wealth department) in Menya

3-6 Civilization and cultural heritage

3-6-1

Menya governorate has a rich and various cultural heritage. It is one of Upper Egypt's governorates that have a lot of historical and monumental location, some of which is more than 7000 years old.

Table (3-6-1-1) in the annex of civilization and cultural heritage illustrates the record of honor of Menya's sons since the pharonic age till now.

As the rest of the governorates, there exist two cultural places in each of Menya city and Abo Korkas following the public Authority of cultural places in Cairo. There exist also Public Libraries, cultural houses and children's libraries. The cultural branch at the governorate in comprises several departments and divisions (researches department – artistic services and others).

3-6-2 Monumental sites

Menya governorate enjoys special monumental sites holding and featuring the Egyptian pharonic history (old state – middle state – modern state) then the greek age, roman age, Christian and Islamic age.

Monumental and touristic sites

*** Deir Mowas Markaz**

It is located 60 km South of Menya city. There exists the monumental Tal El Amarna region 15 km north east Deir Mowas. It is the region chosen by Akanoton to establish the capital of his kindom (Akhet-Aton) for worshipping the one god (Aton) simplified in the shape of a sun with rap coming out of it an end in human hands to provide life to the universe. Akhet Aton city, Tal El Amarna currently, was Egypt's capital

during the modern pharonic state. It's worth mentioning that Akanaton allowed the arts men to freely express themselves and their surrounding establishing the first school of realistic art internationally know as "Amarna Art". The most of portent monuments of this region are:

North Tombs

Most important of which are : relics of the Northern palace and Aton's large temple – Hoya tomb – Meri Rà the 2nd tomb – Ahmouza tomb – Meri Rà tomb – Bento tomb – Bànahcy tomb). They are tombs of princes and ministers.

Southern tomb in Haj Kandeel :

They are 19 tombs, most important of which is the tomb of (Eye) the senior priest of god Atoun.

Akanaton royal tomb

It lies 13 km from Tal El Amarna in a valley heading east.

*** Mallawi Markaz**

48 km south of Menya city and holds the following monumental regions:

Ashmonein region

It lies about 8 km west of Mallawi. This region was the capital of the 11th region of Egypt's regions. It was also the residence of worshipping god Tehout represented in the shape of a monkey or ibis bird. It holds important monuments from the pharaonic, greek, roman, Christian and Islamic ages, most important of which : Statues of god Tehout – relics of the greek market (that goes back to 350 B.C.) – relics of a bazilc church. The ashmonian played an important role in the liberation was against the Heksus under the city main (Banakhy).

Tona el Gabal Region

Lies west of Ashmonein at a distance of 10 km. It's reachable through the western desert road or the Cairo/Aswan agricultural road. Its most important monuments are (Betozeris tomb, a senior priest from the greek-roman age – Ezadora mummy "martys of pure love" – the vaults of god Tehout).

Betozoris tomb :

This tomb was discovered by the French scientist G. Levavs in 1919. At the beginning, it was thought to be one of the Egyptian temples because of its external appearance. But as a matter of fact, it was a family tomb, not only for Betozoris, but for his mother, grandmother and members of his family as well. All the members of this family held clergical positions related to the god Tehout, or other gods that were worshipped at that place. Near to the tomb, exists an alter in the shape of a rectangular base.

Sheikh Ebada region

Lies 8 km east of Mallawi city, built by Hadreyan emperor 120 B.C in the memory of his best friend Antinio who drawn in the Nile. The city was named Antiniopolis. It lies near a temple built by king Ramsis the second which still exists during the Islamic age, one of the companions, Ebada Ben Assamet, built a mosque in this village honoring it and expressing his feelings towards the village in which Coptic Maria, whom prophit Mohamed (PBUH) married and had his son Ibrahim, was born and lived in.

Deir El-Barsha

Lies east of Mallawi city and holds a number of tombs, most important of which, is the tomb of Gehouty Hoteb and Hatta Takht. They go back to the middle state age.

Deir Abo Hans

There exists a church from the fifth century joins between the Byzantine art and the bazilc art, in addition to "Saint John the short" church.

Islamic monuments

Represented in Asqalany Mosque built in 1193 a.d., attributed to Sheikh Asqalany of asqalan in Iraq of the distinguished features of this mosque are the frontages that are built from the mangour bricks, one Al-Youssefy mosque built in the Fatimy age. It resembles the Azhar mosque in Cairo.

Abo Korkas Markaz

Lies 22 km south of Menya city. It has some of the most beautiful monuments in the governorate.

Beni Hasan Region

Lies 3 km south of Menya city, reachable through eastern desert road and Cairo / Aswan agricultural road as well as the eastern road parallel to the Nile in Menya.

Sultan Beni Hasan Zawya :

It holds 39 tombs sculpture in the rocks for the governors of Hebno city from the middle pharonic state (2000-1785 B.C). Most important of which are Amnemhat tomb, Khom Hoteb tomb, Baket tomb, and Khiti tomb.

Antar Stable

Lies 2 km south east Beni Hasan. This temple is sculptured in the rocks for god Bekhet. It was built by each Hatshepsout and Tohotmos the third (1551-1447 B.C.) for worshipping god Bakhet. The greek called it (Artemis cave), but it was named Antar stable in refer to one of the Arabian stories heros. What is special about this temple are the engravings that tell how Hatshepsout fixed and rebuilt what the Hyksos destroyed during their occupation to Egypt.

Samallout Markaz :

Lies 25 km north of Menya city. It holds pharonic, Christian and Islamic monuments.

The pharonic monumental region of El-Babein :

Lies east of the Nile in Beni Khaled village. It goes back to about 4 thousand years B.C. It is told that some of the stony used in building the pyramids was brought from this area. Of the most important monuments there is the temple of god Hathore, the god of mines and cutting stones.

Virgin Mary Convent in Global El-Teir

Lies about 25 km north east Menya city, and 2 km from the eastern desert road. It is one of the important sites through which the scared family passed by and stayed in during their trip to Egypt. It has a church sculptured in the rocks built by Helana, and empress in the fourth century. It contains many icons that go back to the beginnings of the Christian age.

The Old Mosque

One of the oldest mosques in Menya, it goes back to year 368 hjri. It lies south of Samallout city, and it has many names, some of which, Sheikh Genidi mosque, and the mosque of the lilte minaret.

Beni Mazar Markaz

Lies 60 km north of Menya city. It holds the following monuments:

Bahnasa region

Lies 15 km North West Beni Mazar, and about 3 km from the western desert road. It is told that its name is drived from "Baha' El Nesa" the daughters name of the city governor during the Islamic conquest it is the relics of the old city (Bermoza). Bahnasa is one of the most important monumental sites, as it hold the Egyptian history with its various stages starting from the pharonic ages till the Islamic one including the greek, roman and Christian ages. It's historical importance also refers to the huge amounts of papyrus found there. Two big tombs why discovered and they go back to Historians narrate that by the time Islam entered Egypt, Bahnasa had a large number of churches. It has now and old tree that it is thought that the sacred family sit under and drank from the well found near by during their escape to Egypt. Some explainers say that this location was mentioned in the Quran in verse 50 of Mo'menoun Soura (And we made the son of Mary and his mother as a sign: we gave them both shelter on high ground, affording rest and security and furnished with springs).

There are a number of tombs that goes back to the Christian age with colored engravings, a monumental church was recently discovered as well. Bahnasa has witnessed glorious pages from the history of the Islamic conquest of Egypt. It is called the city of martyrs due to the many of those martyrized during the Islamic conquest. It was honored by many of the companions, and their wives and sons from those who witnessed Badr Ghaswa with prophet Mohamed (PBUH). Of the most important Islamic monuments:

- The mosque of Al-Hasan Be Saleh Ben Ali Zein El-Abedeen Ben Al-Hussein Ben Ali Ben Abi Taleb. It is the only mosque in Egypt that has two kiblahs.
- The grove of sidi fath' El-Bah, one of the Islamic conquest heros.
- "The seven girls". It is a shrine that tells a story of a group of Egyptian girls who lived in a convent in that place and went out one day to supply the Muslims army with food and water during siege, and were killed by the romans. This story, if telling anything, reflects the joy of the Egyptian regarding the Islamic conquest and how they backed it up in escape from the roman oppression.
- A group of domes, such as the dome of Abo Samra, the dome of prince Zeyad AlFadel Ben Al-Hareth Ben Abdel Mottaleb (the cousin of prophit Mohammed, PBUH).
- In co-operation with the Ministry of tourism, a complete study was done to develop this region. An amount of 9.5 million pounds were approved. Procedures of such development are currently under execution.

Menya Markaz

Lies about 247 km south of Cairo. Menya city is considered the capital of Menya governorate. It's name was drived from the pharonic name (Man'at Khofo), currently zawyet Soltan. All the Egyptian historical ages are apparent there in various sites.

Zawyet Soltan region

Known as the death zawya 10 km south east Menya city (on the eastern bank of the Nile). It goes back to the old state age and was the capital of the 16th region of Egypt's regions. It holds monuments fro the

various pharonic ages, greek & roman ones, most important of which in an old pharonic cemetery from the 6th dynasty, and (Kenso) tomb from the old state age and (Nefrsekhro) tomb from the modern pharonic state.

Tahna El-Gabal region

Lie about 7 km north east Menya city (east of the Nile). It goes back to the old pharonic state, and was called Tenees. However, its most important monuments refer to the greek age. Of its important monuments are the temple of Nero (god Hathor cabinet), some other tombs and relics of the old city that was known by Akorayce.

The old state tomb (known as frezer tombs)

Lies about 5 km north east Menya city. It has 4 tombs from the old pharonic state, as well as other tombs sculptured in the rocks that go back to the period of King Auser Kaff.

Islamic monuments

Represent in Omarawi mosque following fatimi style. It was called so after Oman Ebin El-Khattab. The people of Menya know it as "The farewell mosque". Some sources state that is was the first mosque built in Menya, as well as Lamati mosque that goes back to the end of fatimi age around 549 Hijri. It was named so after Abol Lamati who built it. Of the other monumental mosques, is Fouli mosque.

Christian monuments:

Father Abahora church in Sowada 4 km south east Menya city. It goes back to the fourth century.

Old places, houses and buildings:

At the end of the 19th century and the beginning of the 20th century, Big families in Menya started to build palaces and houses in them in the

governorate's cities and villages. Certain palaces of specific families began to surface, such as palaces of Sharayya in Samallout, palaces of the Abdel Razeks in Beni Mazar, and palaces of Seif El Nasr family in Mallawi and others. Most of it are found in the capitals of the Marakez, few in the villages. They were built in different styles: local architecture, foreign ones, especially the Italian. Some of them were later used as public buildings and still for now.

3-6-3 Main Environmental issues

Unplanned usage of lands, increasing level of ground waters, and air pollutants spread are of the main environmental issues affecting the civilization and cultural heritage in the governorate.

Land usage:

Misusing the land is one of the effecting environmental issues. The increase in the population number with a percentage of 3% annually leads to an increase in the random use of land in various purposes, such as:

- Building and crawling towards the monumental sites due to the absence of clear planning and deterring laws regarding land use, the thing that negatively affects the nature of monumental sites, and its touristic attraction force. Moreover, the absence of monumental and touristic awareness.
- The increase in the mining and prettification activities, which affects the monumental sites and the related services, because some of these sites are found in the desert. Using some of the land near to the monumental garbage which negatively affects the general appearance of such sites.

- The crawling of the sand hills over the monumental sites which changes its nature and appearance. Leaving the roads to such sites unsaved negatively affects the development of such places.

The rise of the ground water level

Some of these monuments lie in the outpouring plain, or in lower regions in the desert hinterland. As a result of the swinging of the level of the ground water either in the outpouring plain or the low regions in the desert, as well as the habitation expansion which leads to using large amounts of water, and land reclamation which use large amounts of water in irrigating or washing these lands, as a result the level of the ground waters increases which in return affects these monuments water can be of acidic or alkaline base, the thing that obviously affects the material of stone monuments. Such problem requires the states intervention to speed up the projects of sewage specially those near monumental site. Moreover, modern irrigation system should be used in agriculture, especially in the newly reclaimed lands.

Air pollution:

Reasons of air pollution generally and in Menya specifically lies in what thousands of cars bring out in its on going move, as ell as trains. Burning garbage on the streets, factories, technical workshops are all polluting the air. Worth mentioning is that such pollutants could come from outside the boundaries of the governorate (on the regional level) wind blow, sand movement from desert areas hitting monuments lead to erosion of such monuments. These issues could be avoided through activating the laws against the violators, using friendly fuel, expanding the areas of parks, increasing the length of factories, workshops and ovens chimneys, monitoring the amounts of dust and gases, relocating

polluting factories and workshops, to the industrial regions in the new cities and adjust their status according to the Environment Law, and running forums & awareness programs for the citizens to draw attention the dangers of these pollutants. Controlling Sand hill crawling can take place either by planting trees to face it or cultivating on it or even fixing it using tar especially near by the monumental sites.

4- Services and basic structures

4-1 Potable water

4-1-1 Services of supplying potable water

River Nile, Bahr Youssef and Ibrahimeyya canal and their main branches are considered the accepted surface sources of potable water. These sources supply the governorate with more than its needs of potable water, in addition to the presence of enough amount of ground water in the region between Bahr Youssef and river Nile. The type and features of the ground water vary in a large way. As a result, Hydrological studies must be run to determine the role of the ground water in providing the water needs on the short term, and may be on the long term for the isolated rural areas.

We can describe the supply of potable water in general in the governorate by being a group of independent networks, each serve a separate region with some joints that connect in between each other. The water supply is formed from a mixture of surface water resources with percentage of 76% from the total of the above three mentioned main surface resources, and ground water with percentage of 24%. In addition to large number of small water networks the serve the rural areas which depend on sub-irrigation canals and ground waters as a source of water.

Rate of water consumption:

Amounts of potable water produced in the governorate from its various resources reached 113.888.668 m^3 from 1-7-2004 till 30-6-2005 whether surface or ground. The percentage of the lost was about 7.37% and the amount sold (consumed) was 71.390.846 m^3.

The individual's share of the product was 76.9 liters/day, which is less than the international rate which is 180 liters/day the thing that reflects that the governorate is under water poverty line.

Coverage percentage of the service was 78% from the total number of population, and the cost of the cubic meter reached 48 piaster. The number of benefiting population was 3.150.000, as shown in table (33).

Table (33) amount of sold water during 2005

S	***Markaz***	***Citizens***		***Governmental***	
		No. of subscribe	***Sold water(m)***	***No. of subs.***	***Sold water(m***
1	Odwa	21630	1731257	388	544327
2	Maghagha	49306	4762191	728	10184450
3	Beni Mazar	50424	6045258	480	729082
4	Mattay	23724	2816289	539	400059
5	Samallout	60704	7463599	688	830227
6	Menya	102626	15148556	1838	6929306
7	Abo Korkas	45187	5608809	827	1478199
8	Malloy	69663	7981991	1023	1171575
9	Deir Mowas	28988	3528404	412	523228
Total		**452252**	**55330755**	**6923**	**13624453**

Source / Potable and Waste Water Company in Menya

However, there is a difference between the urban areas and the rural ones. 85.16% of the urban citizens of the governorate have access to the water network. 14.84% of them depend on pumps as a source of water. As for the country side 33.73% only are connected to the public water network, whereas 63.58% depend on pumps as a source of water percentage of connection to the public network in urban and rural areas has increased during 2005 from 7: 12% Menya city comes in the first place regarding the connection to the public water network 96.72%, then Beni Mazar 96.67%, Odwa 92.45%, Mallawi 86.84%, and Maghagha 82.24%.

However, this indicator doesn't reflect if the units enjoy an internal source of water. The following table shows the level of the service supply provided through the water supply net work for all the urban areas of the governorates, as well as the small water networks which serve the rural areas. Pure water pumping stations are being operated from 6 to 16 hours daily. 30% of the beneficiaries are connected with home joints to the network directly as shown in table (34-a) and (34-b).

Table (34-A) Status quo of the potable water supply in urban and some rural parts and consumption rate in 2005

Description	*MARKAZ*								
	Menya	*Odwa*	*Maghagha*	*Beni Mazar*	*Mattay*	*Samallout*	*Abo Korkas*	*Malloy*	*Deir Mowas*
City area in Hectare	*857*	*36*	*229*	*319*	*139*	*296*	*109*	*409*	*126*
Served area in Hectare	*429*	*23*	*124*	*188*	*79*	*160*	*64*	*176*	*74*
Served population in person	*20541.*	*10846*	*55992*	*53411*	*22276*	*65642*	*44885*	*115631*	*21919*
Served neighboring villages.	*2*	*5*	*13*	*5*	*------*	*5*	*25*	*5*	*6*
Current population in	*23349*	*14182*	*90231*	*22514*	*------*	*14850*	*126954*	*24029*	*30597*

villages									
Potable water connections	***-------***	***-----***	***-------***	***-------***	***-------***	***-------***	***-------***	***------***	***------***
Housing	***43084***	***1982***	***11721***	***12194***	***4884***	***12583***	***8015***	***19687***	***4129***
Commercial	***837***	***150***	***725***	***1003***	***262***	***747***	***461***	***922***	***125***
Industrial		***---***	***---***	***---***	***---***	***---***	***---***	***---***	***---***
Educational		***66***	***158***	***95***	***65***	***111***	***94***	***---***	***112***
Total	***43921***	***2198***	***12605***	***13292***	***5211***	***13441***	***8570***	***20609***	***4366***
No. of public potable water faucets	***---***	***2***	***13***	***4***	***3***	***---***	***7***	***9***	***3***
Potable water supply	***---***	***---***	***---***	***---***	***---***	***---***	***---***	***---***	***---***
Hr/day	***24***	***24***	***24***	***24***	***24***	***24***	***24***	***24***	***24***
People benefiting from potable water %	***99.6***	***96.4***	***97.5***	***97.5***	***71.4***	***90.9***	***92.3***	***97.9***	***80.3***

Source / Inclusive Layout of the governorate

Table (34-B) average daily consumption 2005

Average daily consumption (m / day)									
City	24244	1383	5437	6168	3774	10343	6640	12067	3740
Village	2763	446	9924	2709	---	1485	2000	2761	2246
Total	37007	1828	15361	8837	3774	11828	8640	14828	5986
Rate of individual daily consumption in the city	161	97	85	111	97	130	126	96	107
Percentage of paid water through bills	64	43	30	72	34	65	42	44	56
Percentage of accurate counters	12	80	59	37	61	47	56	41	59
Percentage of inaccurate counters	69	16	26	15	31	21	23	19	33
Percentage of broken counters	19	4	15	48	8	32	21	40	8
Percentage of inaccurate counters	10.3	2.7	2.6	4.7	7.7	11.1	8.8	5.6	5
Percentage of unpaid water	36	57	70	28	66	35	58	56	40

Source / Inclusive Layout of the governorate

Quality (type) of potable water

Ministry of Health and population take samples from Ministry of Health and population take samples from every well and analyze it at its labs. Such action is done once a month. In addition, a committee from the central lab following the company of potable and waste water takes samples from various location (with its various resources) whether from the network or the source or from the reservoirs (land or upper). Table 35 in the potable water annex illustrates the results of analyzing the potable waters during June 2005. from the results, it is obvious the inconsistency of some samples being hard water, or because to turbidity, or bacteriologically inconsistent which indicates the leakage of pollutants to the ground waters.

Problems related to potable water services

a- Specifications:

Most villages and some cities depend on ground water wells for potable. Water sample from 52 well all over the governorate was analyzed. From the results obtained, 7 wells only were compatible with the Egyptian standards of water quality, were as 45 well were not compatible in one or more of these specifications. It is noticeable that in all the examined wells, the percentage of iron concentration was accepted, with less than one milligrams / liter. Half of the examined wells contained acceptable concentration of Manganese. Five wells were not compatible with the Egyptian standards regarding physical features turbidity and the total soluble solid substances. 32 well were not compatible in the chemical characteristics with one or more of the Egyptian standards colonic bacteria concentration in 33 well was above

the allowed concentration in the Egyptian standard specifications for potable water. Table (22) provided a summary of these results.

B- Level of service in the village:

According to the data of the inclusive layout of the governorate, where a field survey for a number of villages that are not connected to the potable water network or the sewage network (represent 15%) was conducted, there is a deterioration in the supply service of potable water in each of these villages. Table (4-1-1) in the annex of potable water illustrates the service level of potable water supply in the villages included in the study of the inclusive layout of the governorate.

C- The rapid increase in the population

From the future expectations of the population number, it is shown that the number of population will reach 5.498.699 by 2022. The expected number of urban population in Menya is 1.008.224 whereas the rural population number will be 4.691.254. Such thing will require an increase in the balance sheet and fund resources to provide potable water for the new increase in addition to the already existing number.

D- Limited capacity of stations:

Some f the villages have limited capacity potable waters stations that are insufficient to provide the least needs of potable waters of such villages.

The reason this is either a shortage in the hydraulic efficiency of the station, or the small size of the reservoir of the station, the thing that leads to depletion of the amount of water in this reservoir in a short time. As a result, there exists the need to increase the working hours of the station, or else the water will be cut from the serve areas.

E- Misuse of potable water

Although the costs of purifying potable waters are high, some citizens use it in agricultural uses as well as for wasting cars or so, the thing that leads to wasting pure potable water. Moreover, the media is falling short in awaring the citizens the importance of potable waters and how to rationalize its consumption.

F- Supply networks

In some areas these networks are unable to supply the cities with the proper needs especially around the rush hour. In some cities, as well, the networks are unable to supply fire needs.

4-1-2 Treating potable water

There are around 237 water stations, surface or ground, in the governorate. 75% of the potable water process depends on ground water.

Table (4-1-2-1) in the potable water annex illustrates these stations as well as their types.

According to the latest reports in the inclusive layout of the governorate, there are 7 main stations to purify potable water, 47 pressured water treatment units and 196 well. The National Institution for potable water and sewage has offered to establish 7 more stations in the governorate. There are also private wells inside the houses beside other water resources in some villages. Tables (36-A) and (36-B) show the status quo of the main water stations.

Table (36 – a) existing / suggested potable water purification Stations in Menya

Location	Name of station	Water source	Capacity (Liter/ Sec)	Specifications of pure potable water	Statues quo
	Old British station	The Nile	240	Unavailable	Some units are almost expired which increases the maintenance costs
	Check station	The Nile	200	Unavailable	Mechanical equipments are almost expired. It doesn't contain all the required practical equipments
	American station	-	330	Consistent	In good condition
	National authority station	-	400	-	A suggested station by the national authority of potable and waste water
Maghagha	City station	Ebrahemyya canal	50	Unavailable	Old and needs urgent improvement

Following table (36 – a)

Location	Name of station	Water source	Capacity (Litre/ Sec)	Specifications of pure potable water	Statues quo
Beni mazar	City purification station	Ebrahemeyya canal	60	Consistent	Mechanical equipments are almost expired. However, the station must stay in services until the operation of the new one, then it should stop.
	National authority station	The Nile	400	-	Suggested station by the national authority of potable and waste water
Mattay	Station of the national authority of potable and waste water	The Nile	400	-	A mew station and is in good condition
	City station	Ebrahemeyya canal	60	Consistent	An old station, almost expired. It doesn't contain the required equipments. It doesn't contain also the systems of chlorine, a lam or the mixing reservoir.

Source / potable and waste water company in Menya.

Table (36 – b) existing / suggested potable water purification stations in Menya

Location	Name of station	Water source	Capacity (Litre/ Sec)	Specifications of pure potable water	Statues quo
Samallout	Station of the national authority of potable and waste water	The Nile	400	……	A new station with good condition
Mallawi	The old station	Ebrahemeyya	60		Needs total improvement to increase its performance
	Station of the national authority of potable and waste water	The Nile	400		Suggested station from the national authority of potable and water.
Odwa	Station of the national authority of potable and waste water	Bahr youssef	400	…….	Suggested station from the national authority of potable and waste water
Abo Korkas	Station of the national authority of potable and waste water	The Nile	400	……..	Suggested station from the national authority of potable and waste water

Source / potable and waste water company in Menya

These tables show the existence of 6 purifying station (86%) that are in bad shape and in nod for complete improvement and fixing. It may as well need replacement.

Distributing potable water

Some of the potable water are so provided to more than a village and a sub-village through distributing networks that connect these villages (one process can depend on more than one well at the some location of the station). It is also possible the mix waters from two different source especially in the villages lying directly on Ibrahimeya canal, Bahr Youssef and the Nile. There is an approach towards cutting down the use of ground water as a source of potable water after the spread of the pollutants especially sewage reservoirs in the village. Therefore, close villages were connected to compact treating water stations that are established over on of the surface sources either in one of these villages or nearby.

Table (4-1-2-2) illustrates the supply operations and the supplied areas in the governorate as well as the number of benefited places and the number of subscriptions.

4-1-3 Main issues for treating and distributing water

Chlorining potable water with powder or liquid chlorine some stations, especially surface filters or portable filters or artesian stations use chlorine in purifying, either in its liquid state or powder to sterilize the reservoirs. Table (4-1-3-1) in the potable water annex provides a statement on the water stations using liquid or powder chlorine.

Chlorining potable water with gaseous chlorine and using alum in purification.

Other stations use gaseous chlorine and solid & liquid alum in the purification process. Table (4-1-3-2) in the potable water annex illustrates such stations. As for the rest of the factors of potable water supply works, it includes pure water reservoirs, main pump lines and distribution networks. Table (4-1-3-3) in the potable water annex illustrates potable water reservoirs, surface or upper ones in the governorate.

4-1-4 Cost of water supply

Table (37) shows the difference in the affirmed fees for water supply according to the type of the plant and the use. These fees range from 15 pounds for the houses and 1000 pounds for the car stations and the contractors.

Table (37) Determined fees of water supply according to type of plant and water use.

Serial	*Type of Plant*	*Fees*
1	*Houses*	*L.E. 15*
2	*Pharmacies and Clinics*	*L.E. 50*
3	*Buildings*	*L.E. 100*
4	*Governmental buildings*	*L.E. 150*
5	*Restaurants Bakeries and cafes*	*L.E. 200*
6	*Automatic Laundries*	*L.E. 300*
7	*Commercial stores*	*L.E. 250*
8	*Gas station*	*L.E.1000*
9	*contractor*	*L.E. 1000*

Source / Potable and Waste Water Company

4-1-5 Environmental problems in potable water sector Ground Water contamination

As a result of the presence of a big number of villages and some cities without sewage service, all the citizens depend on non solid sewage reservoirs, or making deep sewage that reach the ground water reservoir on which the company of potable water depend on s a source of potable

water supply in these regions. As a result, the presence of these sewage reservoirs beside potable water reservoirs has its negative impact of the potable water of such wells.

Deterioration of distribution network

The distribution network seems to be deteriorating in some areas because it's being old and not renewed. As a result, it doesn't been the water pressures, therefore sometimes it explodes and big amounts of potable water are wasted and lost inside near by soil layers or on the streets. On the other hand water is cut for long periods of time. There are still other negative impacts, among which are:

- Accumulation of the water in the streets, and it form a still pond producing harmful insects.
- Surrounding buildings, especially if built from soft bricks.
- Contamination of water inside the pipes after fixing.

Neglecting regular washing

Neglecting regular wash of reservoirs and pipes. Inspecting some locations revealed the presence of seaweeds in some reservoirs. Moreover, in some cases, washing is done by untrained workers.

Plurality of endings at the terminals of the net such thing with the absence of spigots to throw out washing water at the ends of these terminals makes it hard to complete the washing process in the net. It was better, however, to join the entire networks terminal in the village and make a washing spigot at the end of the network, and other sub spigots inside the network to adjust or change to course of washing.

Precipitation basins

Sometimes seaweeds grow and precipitations accumulate in the precipitation basins in some stations. It is true that there is a periodical

system for cleaning and deterging these basins, however, its needs more care and attention during cleaning process, and not leaving it without cleaning and maintenance for a long time.

Depressions (holes) around artesian wells when the land level around the potable water artesian well decreases, such thing leads to the accumulation of rain water or washing water in that depression around the well carrying pollutants. When activating the well, this polluted water leads into the potable water.

Housing blocks crawling

Some stations got reached by housing blocky without having enough space around the station's well. In some cases there is even no fence the thing that carries the citizens in some cases to raise cattles inside some stations.

4-1-6 Monitoring the quality (type) of potable water

This monitoring is done by a quadruple committee including (potable water company – environmental health – Environmental Affairs Department – Assuit RBO).

Water samples are taken either from the in put or output or from the reservoirs or the network's terminals. The samples are sent to each of the lob of the potable water company and the health's lab for analyzing and consistencing the results. Moreover, potable water company caries out a continuous follow up inside the stations. The company has its own specialist chemists at the station for periodical inspection of potable water around the clock. In some stations, chemists are there 24 hours daily especially in the main filtration operations. Samples of raw water are even being examined either from the Nile or the main canals in the regions.

Monitoring stations

As previously illustrated, monitoring takes place through the company and the previously mentioned committee. In addition, some health observers take samples from the potable water within the governorate (reservoirs – networks terminals) in addition to samples of raw water under the national network for monitoring water's contamination. All these taken samples are sent to the lab of the health and population management in Menya for analyzation. They are also analyzed in the central lab of the company the committee is then notified with the results.

Legal standards

All analizations and results issuing are done according to the Egyptian standards of potable water and the decree number 108 of the year 1995 issued by the health Minister, and law number 27 for the year 1978 regarding regulating public resources of water needed for potable and human use. Table (38) in the potable water annex summarizes standards and specification that should exist in the safe potable water and domestic used as approved by the Higher Committee of water dated 26-2-1995.

Responsible party

Potable and waste company in Menya.

Monitoring program of potable water

The quadruple committee, previously mentioned, sets a program for periodical inspection over all the station in the governorate in order to point out areas of defects and reasons of contamination.

4-2 Sewage :

4-2-1 Introduction :

The works of collecting and processing sewage in the governorate are limited to the cities of Marakez (Menya – Abo korkas – Odwa – Deir Mowas) and some villages like Bahnasa at Beni Mazar. The public Institution of potable water and sewage is conducting projects to establish networks for collecting pumping and treating sewage in the rest of the markez (Maghagha – Beni Mazar – Mattay – Samallout – Mallawi) as well as some villages such as Beni Ebeid village in Abo Korkas and Delga village in Deir Mowas. Some of these projects are almost finished, others are under construction. As for those village that don't have a system for collecting and treating sewage, their options of getting rid of sewage wastes are the drains and analyzation reservoirs

Daily amount of sewage

The amount of daily sewage of the served areas and according to the designed capacity of the stations in 94000 m3/day. The amount of sewage in Menya city and Abo korkas only reached 17.451.044 m3/year, the collected sewage in Menya city is bigger than the designed capacity of the treatment station. Table (40) states the stations, served areas and the designed capacity of these stations and its operating year.

Table (40) waste water (sewage) stations, served locations, designed capacity and drainage locations

S	Markaz or city	No. of elevating station	No. of treatment station	Designed capacity	Year of operation	Drainage location
1	Menya city	15	1	4000m^3/day	1965	Moheet
2	Abo korkas city	5	1	40000 m^3/day	1997	Moheet
3	Odwa city	2	1	2000 m^3/day	2005	Moheet
4	Deir Mowas city	2	1	1000 m^3/day	2005	Kapkap
5	Bahnasa village	2	1	2000 m^3/day	1999	Balh
Total		26	5	64000 m^3/day	-	-

Source / Potable and waste water company

There are renovations taking place in Menya station. A new station for Menya city was established in the western desert hinterland. An ejection line of length 28 km is now under construction to deliver the sewage from Menya city to the desert hinterland. The designed capacity of the first stage is 90000 m^3/day, reaches to 120000 m^3/day after completing the second stage. Table (41) illustrates the under construction sewage station and their designed capacities.

Table (41) under construction waste treatment stations

S	Location	Designed	Notes
1	Mallawi	40000 m^3/day	2.5 km south west Mallawi city to serve it
2	Samallout	20000 m^3/day	15km west of Samallout city to serve it
3	Beni Mazar	20000 m^3/day	3km west of Beni Mazar city to serve it
4	Mattay	10000 m^3/day	6km west of Mattay city to serve it
5	Maghagha	20000 m^3/day	6 km west of Maghagha city to serve it
6	Menya at the desert hinterland t	90000 m^3/day 120000 m^3/day	a. first stage b. the end of the second stage.

Source / Potable and waster water company

Available treatment systems

The treatment systems started by using the activating, as it is the well known used way in the governorate since establishing Menya city sewage station on 1965. Using such method is still going on in Menya city station and Abo korkas station. Odwa and Dei Mowas, however, are using the method of oxidizing canals. The rest of the under construction stations will use the method of oxidizing canals as well as the pebble filtrations. The following table illustrates treatment systems used in the working and the under construction sewage treatment stations at Menya governorate.

Table (42) treatment systems at the waste water treatment stations either working or under construction

Waste water treatment station	**Location**	**Station condition**	**Designed capacity m^3/ day**	*Treatment systems*
Menya	3.5km south west the city	Demolished	……. 40000	Activating fludge
Abokorkas	2.5km west of the city	Working	40000	Activating fludge
Odwa	2.5km north of Abdullah lamloum	Working	10000	Oxidizing canals
Beni mazar	3km west of the city	Under construction	20000	Stone filters
Maghagha	6km from the city	Under construction	10000	Oxidizing canals
Samallout	15km from the city	Under construction	20000	Stone filters
Mallawi	1.5km south west of the city	***Under construction***	40000	Stone filters
Deir Mowas	2.5km south west of the city	Working	10000	oxidizing canals

Source / Potable and waste water company.

4-2-2 Sewerage system in the cities

As previously illustrated, sewage services are limited to four cities only at the mean time (Menya city – Abo korkas – Odwa – Deir Mowas).

4-2-3 Sewerage system in the countryside

As previously illustrated, sewage service in the villages are not available in the mean time expect for Bahnasha village. There are two stations under construction for two villages (Belga in Deir Mowas – Beni Ebeid in Abo korkas).

4-2-4 Draining flow rate

Industrial draining rate is about 1.398 m^3/sec. The main source of this industrial drain is the Sugar Company at Abo korkas. It's draining rate alone is 1.39 m^3/sec, and Nile company for ginning cottons with draining rate of 0.008 m^3/sec. This draining goes directly to Mohit wasting canal and Damarees wasting canal then directly to the Nile without passing through sewage treating stations. In addition to the drain of some medium and small factories such as dried onions factory in Maghagha. Most of which are not compatible with draining standard. The sewage rate that is supposed to be totally treated reaches 94000 m^3/day coming from the working stations and is drained to sub drains, the to Mohit or sometimes to Mohit directly into the Nile at Atsa village in Samallout. This is in addition to what the citizen of the unserved areas do, as they directly through sewage wastes, untreated, in the drains. These wastes are even more than the treated wastes, the thing that reflected the seriousness of the sewage problem inn the governorate. Table (14) illustrates the main resource of industrial drain and daily rate.

Table (44) Main sources of industrial drainage and rate of daily drainage

S	Source	Amount m3/day	Notes
1	Abo korkas sugar factory	120096	-
2	Nile company for cotton ginning	691.2	Almost not working at the present time

Source / Irrigation management in Menya

4-2-5 Final dispose of sewage water

Treated sewage from each of Menya and Abo korkas station goes to Mohit, then to the Nile. The rest of the stations drain in sub drains that in return goes to Mohit then to the Nile.

The unserved area get rid of untreated sewage in the sub drains, closed ones or leakage wells. Currently there are not methods for reusing treated or untreated sewage. It is sent back to the Nile through Atsa. There is an approach, however, to reuse sewage treating stations at the rest of the cities, and completing Menya city station in the desert hinterland. This reuse will be in planting wooden (forest) trees in the desert hinterland.

4-2-6 Environmental problems related to sewage sector :

Disposing sewage is one of the governorates biggest problems. There are only four cities covered with a sewage network (Menya city – Odwa – Abo korkas – Deir Mowas), in addition to Bahnasa village in Beni Mazar. The rest of the cities and villages depend on open wells and decomposition wells to get rid of sewage.

Such action lead to the leakage of sewage to the surface ground water reservoir which increase the level of ground water, especially in the habitant area in the outpouring plain and negatively affects buildings as well as contaminating ground water. This sewage contains too much harmful bacteria, chemical substances that contain heavy elements and other harmful substances that would transfer to the ground water, and then to man. Most of the citizens still use manual pumps in potable and washing. Ground water is considered the only source of potable water to most of the villages and some cities.

Throwing sewage wastes, treated or slightly treated, in rivers makes it a source of infection. Types of these bacteria live in water surfaces where plenty of food, from the wastes, is available. These contagious bacteria then transfers to man either through the skin, wounds and mouth or when eating infected fish.

It is well known that sewage water in very rich in organic substances, the thing that increases photosynthesis process in seaweeds. Bacteria gets active and increases the biological decomposition of seaweeds leading to the decrease in the percentage of the dissolved oxygen which results in the death of large amount of fish. The water, then rotten and becomes unsuitable for use.

On the other hand, throwing untreated sewage in the desert even if it is far from the habitants area, makes such lands unsuitable for cultivation by time. Such wastes contain high concentrations of harmful substances such has heavy metals. It is worth mentioning that rivers contamination kills more than 4 million child every year around the world as a result of dehydration diseases.

Authorities responsible for treating sewage and monitoring its quality

All the works of producing potable water and treating sewage all around the governorate and run and supervised by Potable water and sewage company. It was transformed from an authority into a company more than 2 years now. This company is represented by a chairman of board, and Departments heads inside. Every department has its own duties and responsibilities. One of these department is the sewage Department totally responsible for sewage network, elevating stations inside the covered cities, and treatment stations up till the final disposal of treated sewage. The manager of the treatment station is legally responsible for any violations that might take place inside this station whether regarding operation or analyzation of the final terminal of the station. Management of health and population takes samples from the final terminal of these stations, analyze it and report the results to the supervising authorities.

Legal standards of sewage and their compatibility: sewage process is controlled by several laws that differ according to the place sewage and its type. Sewage is not free from some industrial sewage wastes, moreover, treated sewage can be directly thrown in fresh or salty waters.

a- Wastes of industrial sewage that are thrown into the sewage network is submit to the standards mentioned low 93 of they year 1962 and decree 44 of the year 2000 concerning amending the execution list of law 93 of the year 1962 regarding draining in the sewage networks.

b- Wastes of treated sewage that the thrown into water paths is submit to the standards mentioned in law 48 of the year 1982 concerning

protecting the Nile and its branches. Management of health and population takes periodical samples from the lost terminal of the working sewage treatment stations and reports the results to the authorized stations and reports the results to the authorized parties.

Table (45) in the annex of the sewage shows the results of some samples of treated sewage. Some stations are not committed to the standards, either because of mismanagement of lake of efficiency in the station, or over loading the stations.

Legal standards of reuse and its application.

The future look on the status of the water resources of Egypt, and it being in the water poverty limit necessitates depending on treated sewage, estimated amount of 6 billion m^3/year, in agriculture. In general, most of the agricultural use of sewage takes place in the mean time after being treated in two ways:

a- Indirectly through draining in the agricultural drains according to the standards of law 48 of the year 1982.

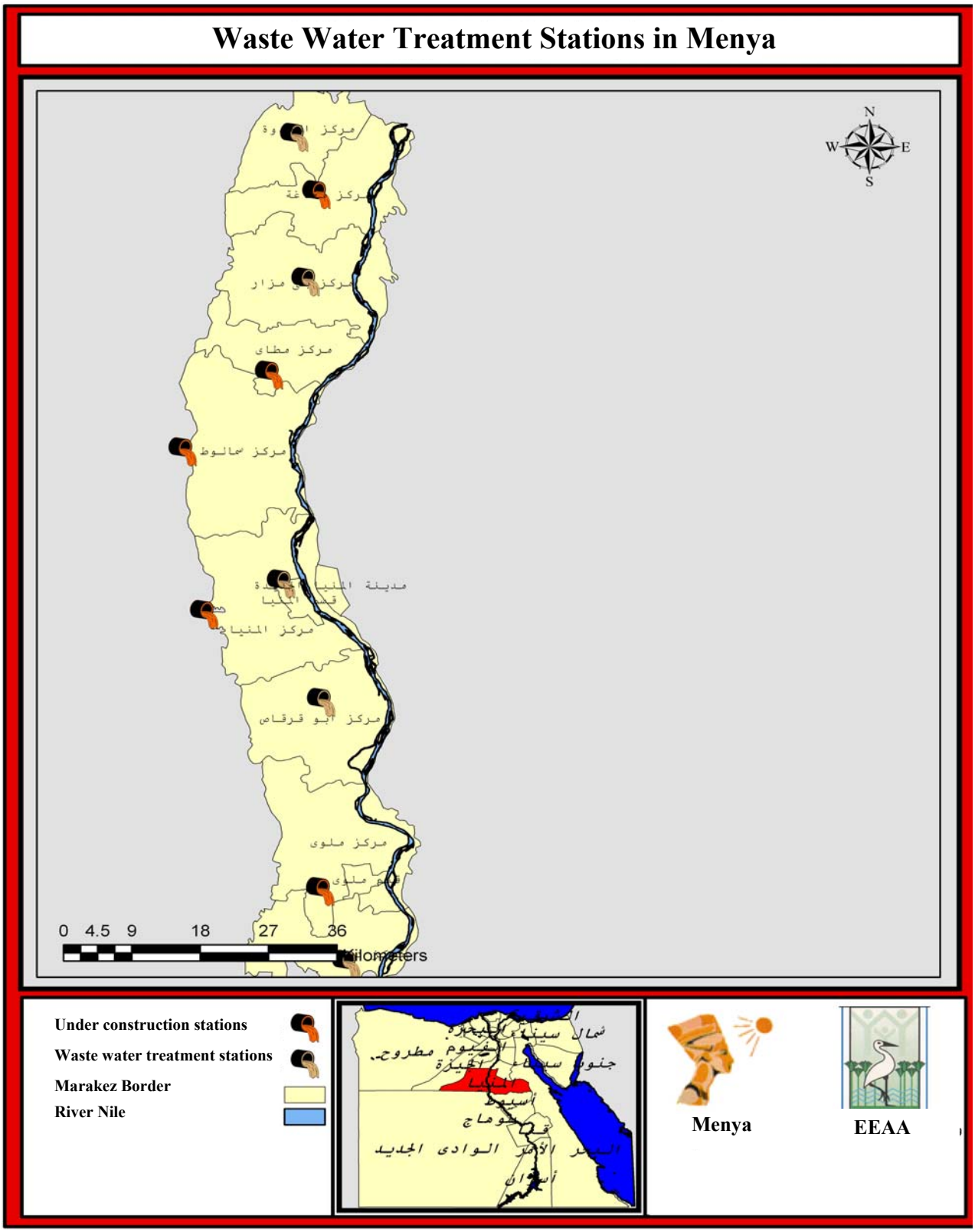
b- Transferring the treated water and using it in irrigating and cultivating the desert hinterland in the specified cities.

Table (46) illustrates the legal standards for reusing sewage.

Table (46) legal standards of reusing waste water

Requirements – Degree of treatment		Degree a	Degree b1	Degree b2	Degree c
The maximum limit of the physical and chemical standards from the final terminal of the treatment station	Absorbed active oxygen mlg/ litre	30	6ds0	60	250
	Suspended substances Mlgram / liter	30	50	50	250
The maximum limit of the biological standards from the final terminal of the treatment station	The possible number of the caloric group	1000	5000	Undeter-mined	Undeter-mined
	No. of cells contagious nematoda eggs (no./ liter)	/	/	Underter-mined	Undeter-mined

Source / potable and waster water company in Menya


Waste Water Treatment Stations in Menya
N
W
E
S
مركز مطاى
مركز مالوط
مركز المنيا
مركز ابو قرقاص
مركز ملوى
0 4.5 9 18 27 36
Kilometers
Under construction stations
Waste water treatment stations
Marakez Border
River Nile
Menya
EEAA

Map (7)

4-3 Running Solid wastes

4-3-1 Introduction

Solid wastes are one of the major problems Menya faces, as the rural feature is dominant there. Solid wastes are also the main source of environmental pollution in Menya. Environmental concepts of the society towards these solid wastes have recently changed. More care is being given to it. An economic overview is also being taken into consideration as it is considered raw materials that can be remanufactured and used once again.

Among the problems facing the solid wastes sector is the lack of institutional construction to run the solid wastes. Human and financial resources are also short, the thing that leads to an inefficiency in collecting wastes in addition to the absence of management for the processes of disposing the wastes and lacking health conditions. As a result, these wastes are accumulating in the public dumps. Cities do have official systems for running solid wastes, but they are generally not enough. On the other hand, no systems are available to run the solid wastes in the rural areas. As a result, the problem is represented in accumulation of animal and agricultural wastes in the streets.

Moreover, the current actions taken to get rid of wastes are producing dangers threatening public health. Home and commercial wastes are gathered and mixed with the animal ones, sometimes the dangerous medical wastes and they are transferred to the dump where they are left.

4-3-2 Sources of solid wastes

Solid wastes coming from the cities and villages of the governorate consist of home wastes, such as food leftovers, paper, glass and textiles commercial wastes results from stores, restaurants, schools, hospitals and official buildings. Most of it is usually paper, plastic, wood, and metals.

Industrial wastes like molasses industry and others results big amount of bag as. There is also streets & roads wastes such as sand, dust, tree leaves (in addition to the wastes of demolition and building and the seasonal (agricultural wastes) and finally, the dangerous wastes.

The rate or average of produced domestic wastes defers in city than in the village. The rate of producing wastes in the city is 0.7 kg/person/day where as it is kg/person/day in the village. According to the estimations reported from the local units, the total average of produce wastes reaches 860 ton/day approx. during 2004. Table (47) illustrates these wastes, its quantity and its location.

Table (47) locations and amounts of wastes and methods of collection governorate wide

S	Markaz	Amount (in ton / day)		Methods of collection
		City (in ton)	*Village* (in ton)	
1	Menya	120	50	Manual by the workers of the local units at the collecting points or big contains, and using the following equipments in the transportation process.
2	Odwa	15	9	
3	Maghagha	70	30	
4	Beni Mazar	60	32	
5	Mattay	40	20	
6	Samallout	70	40	
7	Abo korkas	55	53	
8	Mallawi	110	50	
9	Deir Mowas	35	24	
Total		575	290	

Source / local units

4-3-3 Size of the Wastes

As previously illustrated in table (47), the amount of solid wastes reaches 865 tons/day from all the cities and villages. Menya city alone produces 120 tons/day according to local data, followed by Mallawi with 110 tons/day, them Maghagha and Samallout with 70 tons each/day and rest of the cities with amounts ranging between and 60 tons/day for each of them.

Although these data are reported from the local units, the real thing is somehow different regarding the amount of wastes produced from the cities. Accordingly, studying these quantities in real life through specialists is something essential, in order to make decisions, especially in ways of collecting and transporting these wastes, as well as establishing projects to run these wastes or conducting public bids for public benefit.

However, there are different and contradicting estimations for the amount of wastes from another sources, according to what was reported in the inclusive layout of Menya, prepared by the Inhabitant planning unit in the governorate, in association with some consultation officer, and actual study was conducted to estimate the amount of solid wastes through comparative strategic studies, according to the following bases.

a- Estimating the amount of expected wastes until 2022 from the urban part of the governorate when completing the equipments and setting the technological programs from 1-2 kg/person/day, and the expected wastes from the rural part from 0.7-1.3 kg/person/day.

b- Estimating the amount of wastes according to the status quo and the amounts collected from the Marakez in 2005 and according to the shortage in the process of collection, estimated to be 0.3 to 0.8 kg/person/day.

c- The amounts wastes expected in 2022 were estimated on average base of 1 kg/person/day regarding urban and rural parts. It is shown according to the detailed study of each Markaz the following :

*** Odwa Markaz**

The average amount of solid wastes produced from one person is estimated by about 1 kg. Odwa's population is 193 thousand according to 2005 estimation. The amount of garbage produced from the Markaz daily this year is estimated by 193 ton/day. As a result, the amount of garbage produced from the Markaz in 2005 reached 70.5 ton/day. The population is expected to reach 281.3 thousand in Odwa by 2022, the amount of garbage produced in this some year is estimated by 102.7 thousand tons.

In 2005 the number of hospital in Odwa Markaz is 4 (one central, one specialized, one rural and on educational) the total number of beds in these hospital is 168 bed. Assuming that the wastes in these hospitals represent about 1% of the municipality garbage, the contagious factor in that part is about 20%. One bed produces about 1.6 kg/day regular wastes (food leftovers – empty bottles and paper) so the amount of the regular wastes of these hospitals s around 268.8 kg/day. On the other hand, one bed produces about 0.4 kg/day of hazardous wastes (surgical & theraputical wastes) which total amount of these hazardous wastes from the hospitals equals 67.2 kg/day. Such wastes are very dangerous, as a result, hospitals and health units should be equipped y up to date aiding methods to dispose it in a right way.

Maghagha Markaz

Maghagha’s population is 420.1 thousand according to 2005 estimation. The amount of garbage produced daily this year has been estimated by about (420tons/day). As a result, the amount of garbage

resulted from this markaz in 2005 reached about (153.3 thousand tons). Maghagha's population is expected to reach 601.7 thousand person by 2022. Accordingly, the estimated amount of garbage produced for that same year is (219.7 thousands tons). Maghagha Markaz has 4 hospitals in 2005 (one public and three rural) with a total number of beds equals 300 bed. Therefore, total amount of regular wastes produced from these hospitals is around 480 kg/day whereas the total amount of hazardous wastes produced is 120 kg/day.

Beni Mazar Markaz

Beni Mazar's population is 453 thousand according to 2005 estimation. The amount of garbage produced daily this year has been estimated by about (92tons/day). As a result, the amount of garbage resulted from this markaz in 2005 reached about (33.58 thousand tons). Beni Mazar's population is expected to reach 652.8 thousand person by 2022. Accordingly, the estimated amount of garbage produced for that same year is (48.39 thousands tons). Beni Mazar Markaz has 22 hospitals in 2005 (one central, three specified, four public and fourteen rural) with a total number of beds equals 224 bed. Therefore, total amount of regular wastes produced from these hospitals is around 358.4 kg/day whereas the total amount of hazardous wastes produced is 89.6 kg/day.

Mattay Markaz

Mattay's population is 238.1 thousand according to 2005 estimation. The amount of garbage produced daily this year has been estimated by about (238 tons/day). As a result, the amount of garbage resulted from this markaz in 2005 reached about (86.9 thousand tons). Mattay's population is expected to reach 340 thousand person by 2022. Accordingly, the estimated amount of garbage produced for that same year is (124.1

thousands tons). Mattay Markaz has 2 hospitals in 2005 (one central, and one rural) with a total number of beds equals 168 bed. Therefore, total amount of regular wastes produced from these hospitals is around 268.8 kg/day whereas the total amount of hazardous wastes produced is 67.2 kg/day

Samallout Markaz

Samallout's population is 562.1 thousand according to 2005 estimation. The amount of garbage produced daily this year has been estimated by about (562 tons/day). As a result, the amount of garbage resulted from this markaz in 2005 reached about (205.2 thousand tons). Samallout's population is expected to reach 807 thousand person by 2022. Accordingly, the estimated amount of garbage produced for that same year is (294.5 thousands tons). Mattay Markaz has 10 hospitals in 2005 (one central, four private, three rural, one university and one educational) with a total number of beds equals 320 bed. Therefore, total amount of regular wastes produced from these hospitals is around 512 kg/day whereas the total amount of hazardous wastes produced is 128 kg/day

Menya Markaz

Menya's population is 733.4 thousand according to 2005 estimation. The amount of garbage produced daily this year has been estimated by about (733 tons/day). As a result, the amount of garbage resulted from this markaz in 2005 reached about (267.7 thousand tons). Menya's population is expected to reach 1019 thousand person by 2022. Accordingly, the estimated amount of garbage produced for that same year is (371.9 thousands tons). Menya Markaz has 23 hospitals in 2005 (one central, five specialized, eight private, three rural, one university) with a total number of beds equals 990 bed. Therefore, total amount of regular wastes

produced from these hospitals is around 464 kg/day whereas the total amount of hazardous wastes produced is 116 kg/day

Abo Korkas

Abo Korkas population is 465.7 thousand according to 2005 estimation. The amount of garbage produced daily this year has been estimated by about (420 tons/day). As a result, the amount of garbage resulted from this markaz in 2005 reached about (170 thousand tons). Abo korkas population is expected to reach 672.7 thousand person by 2022. Accordingly, the estimated amount of garbage produced for that same year is (219.7 thousands tons). Abo korkas has 10 rural hospitals in 2005 with a total number of beds equals 208 bed. Therefore, total amount of regular wastes produced from these hospitals is around 332.8 kg/day whereas the total amount of hazardous wastes produced is 83.2 kg/day

Mallawi

Industrial wastes

It is the liquid wastes produced from workshops and factories (11 tile workshop and others). These wastes are usually more concentrated than the domestic (home) liquid wastes. It's degree of concentration depends on the type of industry. A preliminary treatment should be conducted on these liquid wastes inside the factory to read the allowed limited stated in the laws of draining liquid wastes in the main sewerage.

Solid Wastes

Mallawi's population is 688.6 thousand according to 2005 estimation. The amount of garbage produced daily this year has been estimated by about (688 tons/day). As a result, the amount of garbage resulted from this markaz in 2005 reached about (251 thousand tons). Mallawi's population is expected to reach 979.6 thousand person by 2022.

Accordingly, the estimated amount of garbage produced for that same year is (357.6 thousands tons). Mallawi has 7 hospitals in 2005 (three public and 4 rural) with a total number of beds equals 566 bed. Therefore, total amount of regular wastes produced from these hospitals is around 521.6 kg/day whereas the total amount of hazardous wastes produced is 130.4 kg/day

Deir Mowas

Deir Mowas population is 298.618 thousand according to 2005 estimation. The amount of garbage produced daily this year has been estimated by about (67 tons/day). As a result, the amount of garbage resulted from this markaz in 2005 reached about (24.455 thousand tons). Deir Mowas population is expected to reach 433.6 thousand person by 2022. Accordingly, the estimated amount of garbage produced for that same year is (158.3 thousands tons). Deir Mowas has 4 hospitals in 2005 (one central, one specialized and 2 rural) with a total number of beds equals 181 bed. Therefore, total amount of regular wastes produced from these hospitals is around 289.6 kg/day whereas the total amount of hazardous wastes produced is 72.4 kg/day

Note: Currently conducted is a study on solid wastes by the (Egyptian – Italian) project under the supervision of the responsible officials in the governorate.

4-3-4 Components of the solid wastes

Components of the domestic solid wastes differ according to the individual's income. There are some attempts to categorize domestic wastes in Menya governorate according to the income, as illustrated in table (48).

Table (48) categorizing the domestic wastes according to teh income

Category	High income (%)	Average income (%)	Low income (%)
Food wastes and other	69.6	79	78.1
Paper	19.5	14.8	10.5
	1.5	2	2.2
Plastic	0.5	0.3	0.5
Bones	0.9	1	2.4
Glass	2	0.4	0.8
Metals	2.3	0.4	0.7
Dust	3.7	2.1	4.8

Source / Local units and the inclusive layout

From the table, we can deduce that the percentage of the organic substances in the domestic wastes is higher than could be used as organic. On the other hand, the percentage of the flammable substances are low, the thing that denies of possibility of using it as a source of energy.

It is also illustrated from the table that the percentage of the components within the sum of the solid wastes is very close to that mentioned in the national strategy draft, and it is as follows:

* From 50% to 60% organic substances
* From 10% to 20% paper
* From 1% to 5% glass
* From 3% to 7% plastic
* From 2% to 7% metals and other substances.

It is important to understand the structure of these wastes in order to determine the most suitable system to run it and dispose it. Some solid wastes of some rural and semi urban areas contains high percentage of organic substances which allow it to be used in "Kamr" and transforming it into organic manure in opposite to what is found in the urban areas.

As for the medical hazardous wastes, there is about 17 crematory inside the public and the central hospitals around the governorate. They do burn these hospitals' wastes, but they are not operating with the same efficiency. Periodical inspection over down, others are not following the right environmental methods in burning and cremation. Most of the clinics get rid of its wastes with the usual garbage the thing that is considered a dangerous source of pollution.

4-3-5 System of running the solid wastes

The local units (cleanness Department) are in change of running the solid wastes. However, on the Marakez level it is run through a unified organizational structure. Every Markaz has a cleanness chief, supervisors, workers and drivers. This department follows the Engineering department.

Collecting and transferring solid wastes

For the time being, solid wastes are being collected from habitant areas (cities only) by cleanness workers, tractors and vehicles of the local units of Marakez. Solid wastes re transferred daily from the assigned locations of gathering inside the habitant areas by the trucks to the public garbage dump outside the parameter of the habitant areas.

This system, though exists, is practically inefficient containers are mostly unsuitable regarding the size and the type. Most of the time, there is even no containers available collecting is not done regularly the thing

that results in health dangers because of garbage accumulation. As for the rural areas, the official role of these local units decreases, or even disappears in most of the villages.

Medical and agricultural wastes

They were mentioned in details in the health and agriculture sectors as they are separated from the source from the other wastes and treated with a special way starting from the collection stage to the disposal are by recycling (for agricultural wastes) or burning (for the medical wastes) in special crematories specially for this purpose, as illustrated in the chapters of health and agriculture.

Final disposal of solid wastes

Wastes are being collected from the collection points inside the cities through cleanness department, then to public dumps. The phenomenon of random disposal of these wastes on the public roads and through disclosed burning or even by throwing it in the water paths and the agriculture roads in prevailing table (49) illustrates 12 public dump.

Table (49) No. of public dumps and its area in the govenorate

S	City	No. Of dumps	Area in m^2	Notes
1	Menya	1	210000 m^2	700 x 300 located east of the Nile behind the manure factory, 18 km away from the city.
2	Odwa	1	4200 m^2	In the western mountain
3	Maghagha	1	3000 m^2	South the city in front of sheikh zeyad village
4	Beni Mazer	1	8400 m^2	Mawadda, Abo Garagy village
5	Mattay	1	3500 m^2	Gizeera drain , Nazlet thabet zemam.
6	Samallout	1	21000 m^2	West of shousha
7	Abo Korkas	1	84000 m^2	West of the western desert road
8	Mallawi	1	12600 m^2	West of the desert road
		1	3 feddans and 17 Karat	Near Mallay market . it has been comclled
		1	17 feddans, 3Karats	Near Helaga market.
		1	2feddans, 12 Karat	Near the housing block (southern drainage). It not used
9	Deir maws	1	8400 m^2	Moharrum wrench, 5 km west of the city

Source / Local units in the governorate

Butcheries wastes

Wastes are collected from the public butcheries in the governorate and transferred to the public dump. Moreover, there are special crematories prepared to burn and execute the parts of the slaughtered animals that are not suitable for human use. As for the private butcheries, most of its waste is being sold for reuse either in the agricultural sector of somewhere else.

Factories of recycling solid wastes

First: Currently existing.

There are three factories for garbage recycling in Menya, Mallawi and Odwa as follows :

1- Recycling garbage factors in Menya: lies east of the Nile, and 7 km away from New Menya city. It's area is about 6 feddans with a producing capacity of about 10 tons/hr. It is operated by the local unit Menya Markaz and city. 30 to 40 tons arrives in the factory daily from the total garbage of Menya city that reaches 100 to 120 ton/day. This is because the shortage in the ways transporting.

2- Garbage recycling factors in Mallawi: lies north west of Tona El-Gabal village and about 35-40 km away from Mallawi city. It's area reaches about 6 feddans with production capacity of 10 tons/hr. it operates for one shift only, as the received garbage amount ranges from 25 to 30 tons/day. It was being operated by the private sector, them currently operated by the local unit.

3- Odwa factory: Lies west of Maseed village following Odwa Markaz, and about 13 km away from Odwa city. It's area reaches 5 feddans to serve both Maghagha and Odwa Markaz with a production capacity of 10 ton/hr. It's operated by the local unit.

Second: Under Construction garbage recycling factories.

1- Odwa factory: Lies west of Maseed village following Odwa Markaz, and about 13 km away from Odwa city. It's area reaches 5 feddans to serve both Maghagha and Odwa Markaz with a production capacity of 10 ton/hr. It's operated by the local unit.

2- Private recycling factories :

- Factory for recycling agricultural wastes to produce organic manure in the industrial area of production capacity of around 18000 tons/year. It receives an amount of agricultural wastes of about 54000 ton/year with a plan to reach its maximum production capacity that is producing 20000 ton/year and receiving more than 60000 tons/year of agricultural wastes. It is illustrated within the ongoing industries in the industrial area.
- Garbage recycling factory in Gaza'er village following Samallout Markaz. It is a small factory (on an area of 4200 m^2 with a production capacity of about 5 tons/months).

3- Current studies for constructing garbage recycling factories :

- A location west of shousha village, Samallout markaz, was inspected to be allocated to build a garbage recycling factory to serve Samallout markaz or both Samallout and mattay markaz. As for Beni Mazar and Abo korkas markaz, no current studies are being conducting to build solid wastes recycling factories there.

Table (50) amount of recycled garbage at the recycling factories (garbage and agricultural wastes)

S	Markaz	Prdduced amount (ton / day)		Amount of recycled garbage ton / day	Notes
		City Ton / day	*Villages Ton/ day*		
1	Menya	120	50	30 - 40	From the city only
2	Odwa	15	9	Under construction	-
3	Maghagha	70	30	-	-
4	Beni Mazar	60	32	-	-
5	Mattay	40	20	-	-
6	Samallout	70	40	-	-
7	Abo korkas	55	35	-	-
8	Mallawi	110	50	25 - 30	-
9	Deir Mawas	29	38	-	-
Total		**575**	**290**		-
Industrial zone		54000ton / annually agricultural wastes		54000 ton / annually agricultural wastes	Max. Capacity of the factory 6000ton / annually

Source/ Local units

Recycling solid wastes:

Recycling solid wastes is not available in all of the governorates cities except in Menya city and Mallawi where there exist garbage recycling factories. In addition, there is an under construction factory in Odwa, and a factory for recycling agricultural wastes in the industrial area, and a factory for garbage recycling in Gaza'er village (Samallout markaz – private sector).

Disposing solid wastes

These wastes are being collected from the gathering sites inside the cities by the cleanness department then transported to the public dumps. However, and due to absence of tight administration and supervision, random disposal occurs along the public roads, as well as opened burning in the streets, and disposing in the water paths and the agricultural roads. There are 12 public dumps within the governorate; however, no health conditions are applied.

Healthy burial grounds

No healthy burial grounds are available in Menya governorate at the mean time. However, six locations was chosen in (Menya – Mattay – Samallout – Abo korkas – Mallawi – Deir Mowas) by committees from the EEAA and environmental affairs in the governorate. Studies and approvals from the owning parties are not yet done, as these location lie in the eastern desert hinterland of Menya city, and the western one for the rest of the marakez. The governorate is desperately in need for constructing units of healthy burial allocated to the burial of the dangerous wastes (medical and other). Table (51) illustrates the location of the proposed healthy burial ground.

Tabl4e (51) Health burial grounds in the governorate

S	Markaz	Location	Owner	area
1	Menya	Outside new menya city , at kilo 20 Menya / Assuit / oad / sheikh yassin region	The national authority of construction and agricultural development	45 feddens
2	Mattay	Towards Abgag El – Hatub within the parameter of Holwa village	Amirya possessions Management in Menya	50 feddans
3	Samallout	South west new samallout city on the western desert road	Construction and habitant communities organization	50 feddans
4	Abo korkas	West of Belnasora village on the road to the western desert road	Amirya possessions	15 feddans
5	Mallay	West of Tuna El Gabal village	Desert construction authority	50 feddans
6	Deir Mowas	West of Delga village	Desert construction authority	50 feddans

Source / local units

4-3-6 Requirements of running solid wastes

An intact effective running of solid wastes requires five essential factors: equipments, workers, financing, on going financial resources, organized intact administration that includes (planning – executing – following up – evaluating and monitoring) a part from the governmental routine work to guarantee the continuous performance of the service. The absence of any of the previous elements negatively affects the service causing it to fail.

Equipments

It is noticeable that the currently available cleanness equipments starting from the worker's tools of grooms and collecting vehicles are in bad shape and insufficient. Gathering vehicles are so as well. Moreover, equipments used in the urban areas are not suitable with the type of wastes which leads to inefficiency in gathering. Some of the cars are not small enough to pass in the narrow streets. Workshops of maintenance and fixing are limited to some cities only; spare parts are not available all the time. Dump containers are insufficient and found only in the main streets in some cities, and not at all in others.

Manpower

Workers are the main engine of solid wastes running process. If workers are not available in the right quantity with the right quality, however the availability of equipments, the process will deteriorate. The number of workers working in wastes collection is very limited in most of the marakez. This type of work is undesirable and workers of such field are considered low class. Moreover, wages are generally low, and working conditions are bad. The presence of part time workers compensate the descend of the wages. However, the presence of

agricultural work makes the part time work a seasonal one. Accurate estimation of the number of workers is considered one of the priorities of improving the service, but there are other factors that affect the availability of the workers although their permanent existence may turn to be an easy job with the existence of an ongoing finance for the collecting systems.

Table (52) Equipments, labor force and available resources to run solid wastes

S	***Markaz***	***No. of equipments and its types***					***Labor force***		***Available resources***
		loader	***grader***	***Dump truck***	***Vehicle***	***Loader with trailer***	***Full time***	***Part time***	
1	Menya	7	1	12	0	13	986	0	Cleanness fees According to law No.38/1968 Amended by the Law no.10/2005.
2	Odwa	4	1	4	0	7	45	25	
3	Maghagha	7	1	4	4	0	194	0	
4	Beni mazar	7	0	13	0	12	84	100	
5	Mattay	7	1	15	0	8	149	104	
6	Samallout	8	9	14	38	68	209	229	
7	Abo korkas	9	1	17	1	0	248	171	
8	Malloy	4	4	12	15	15	238	44	
9	Deir mowas	6	1	16	0	14	146	72	
Total		**55**	**19**	**104**	**33**	**112**	**2726**	**811**	

Source / local units

Finance resources and finance

It is difficult to determine the current costs of the wastes sector. Local units are running this service according to the system of individual cost centers. Most of the current costs of the solid wastes department are regarding providing collection and street grooming as well as vehicles maintenance and permanent and seasonal works and fuel costs.

Wages of the seasonal workers are covered from the cleanness Fund in the governorate, where as the permanent workers wages are allocated from the, one of the states balance allocations for paying the wages of the workers municipalities. A complete vision of the total resulting income is not available. To guarantee the continuity of work in the solid wastes department, enough finance has to be provided in order to reconstruct this system or privatize it with providing an continuous resource where the citizens participate by paying the determined fees at the cities according to the cleanness law no. 38 of year 1967, amended with law no. 10 of year 2005. Without providing these resources and guarantee its continuity, solid wastes department will lose one of its most important basics. The country alone can't afford al the requirements of thus organization at the mean time. The level of financial resources is not enough to efficiently collect and dispose wastes and provide a continuous service for most of the citizens. The governorate needs extra financial resources to buy new & suitable equipments, increase wages and improve the fixed utilities.

4-3-7 Medical wastes

According to the available data reported from health and population management in Menya, there are about 101 hospital and health services units, in the governorate, containing 4837 bed. The following table illustrates the no. of beds and the amount of wastes/day. If the estimated producing rate, mentioned in the study in the inclusive layout, is applied (0.4 kg/bed/day), then the amount of hazardous medical wastes produced daily from all the hospitals all over the governorate will be around 2 tons/day (according to the estimations) such amount requires a specialized department.

Table (53) amounts of medical wastes daily produced in the hospitals

S	*Markaz*	*Total governmental medical plants*		*Total nongovernmental medical plants*	
		No. of beds	*Wastes amounts in kg*	*No. of beds*	*Wastes amounts in kg*
1	Menya	990	459	200	100
2	Samallout	505	245	110	65
3	Mattay	186	93	50	25
4	Beni mazar	224	90	140	70
5	Odwa	212	106	50	25
6	Abo korkas	350	175	70	35
7	Maghagha	476	238	130	65
8	Malloy	640	320	140	70
9	Deir mowas	304	152	60	30
Total		**3887**	**1878**	**950**	**480**

Source / Population and health bureau in Menya

Running the medical wastes

Reality is different from the estimations. Moreover these data are not accurate and needs precise study and data base about wastes within the governorate. Any way, the produced amounts whether from the cities or villages are considered dangerous and require specialized administration. Whatever it may cost, it is not as much as the costs of medical treatment of the resulted diseases, and prevention is better than treatment.

There is no integrated system in the governorate to run the hazardous medical wastes, moreover, there are not companies, authorities and institution specialized in dealing with such wastes.

Collecting medical wastes

Some hospitals, especially those having crematories, medical wastes are separated from the source. Other hospitals, partially separates the medical wastes, as a result, some medical wastes are seen mixed with normal wastes during inspection. In some cases, medical wastes are not at all separated from normal ones. It is possible to burn them both combined together. Around all the villages within the governorate medical wastes are collected within other wastes. Recently, healthy management is conducting awareness and training programs for hospitals workers (with their different levels and specializations) to safely and accurately deal with hazardous medical wastes.

Storage and transport

Storing hazardous medical wastes in most of the hospitals is very bad and does not provide the required precautions of safe storage especially those that don't have crematories. In some cases, storage rooms are not suitable for these wastes, in other cases, wastes remain too long in such rooms, third case bags are not tightly closed or even stored wrong.

Hospitals that have crematories get rid of their wastes by burning, if such crematories are not broken down or even unsuitable for the work as noticed when visiting such hospitals.

Hospitals that don't have crematories are instructed to transport their medical wastes to the nearest hospital that has a crematory. However, what really happens isn't so, either because of carelessness in the transportation process of these wastes by normal unequipped vehicles (special vehicles for such wastes are not available in the governorate), or

because of a break down in the crematories or their incapability of holding such huge amount of wastes … etc.

In any case transportation is done by regular garbage vehicles in the absence of the special conditions that should be provided in the vehicles transporting such wastes. In the villages, these wastes are collected with normal wastes then to the public dumps near the small units and marakez. Some of these wastes are even burnt at the same location near the hospital because of the absence of integrated system to run these wastes.

Disposing medical wastes

Some of these wastes are being disposed by burning in the crematories that exist in the hospitals of the governorate, some are burnt in the open at the public dumps and some can find its way to the scrap dealer such thing can be noticed in the factories breaking plastic and in cities. In villages, these wastes are either burnt in the open on at the public dumps in the desert hinterland of every village.

4-3-8 Butcheries wastes

Wastes are collected from the public butcheries and transported to the public dumps. Moreover, there are special crematories to burn and execute slaughtered animals that are not suitable for human use after being medically examined by vets.

In private butcheries, wastes are being sold for reuse in the agricultural sector. Some butchers do the slaughtering outside public butcheries and dump the wastes in the agricultural area or near canals. Sometimes they mix it with the dung and used as organic manure, shops of selling and slaughtering birds used to sell then wastes to the factories to be reused as fodders concentrative. Few of them were dumping their

wastes by delivering it to the garbage vehicles before suspending these shops because of the bird's flu.

Crematories inside the butcheries

There is about 14 crematory inside public butcheries in the following cities and villages : Maghagha, Tambedy Tambo, Al-Qeis, Samallout, Deir Belteir, Menya, Al Matahra, Abo korkas, Mallawi, Terwa, Tona Elgabal, Tanda, Deir Mowas. Meat is burnt in this crematories.

Problems hindering the work at the butcheries

1- Shortage of workers (cleanness workers).
2- Irregularity of sweeping vehicles.
3- The crawling of the population block over some butcheries (such as these in Abo Korkas and Tala and others).
4- The absence of butcheries in a big number of villages.
5- Lack of continuous maintenance for the equipments inside the butchery.
6- Shortage of fuel necessary to run the crematories.
7- Weakness of water pressure in some butcheries.

Suggestions to improve work at the butcheries

1- Transferring the butcheries to new locations applicable to the decree of the population Minister no. 87 that butcheries should be at least 200 m away from any population blocks and that it should lie south or south east population blocks.
2- Providing suitable worker for each butchery.
3- Sweeping the tanks daily after work.
4- Establishing new butcheries in the villages deprive from such service.

4-3-9 Authorities responsible for running the wastes

At the mean time, local units in marakez and cities are responsible for running solid wastes in the governorates. Up till now running solid wastes is not yet privatized, in addition to the limited responsibility of the hospitals in collecting and burning medical wastes.

4-3-10 Legislation related to running solid wastes

Running solid wastes and disposing it is submit to the law no. 38 of the year 1967 regarding public cleanness and amended by the law no. 10 of the year 2005 and the law no. 4 of the year 1994 regarding protecting the environment and the law no. 48 of the year 1982 regarding protecting the Nile and its branches and the law no. 89 of the year 1998 regarding bids and overbids.

4-3-11 Environmental impacts

Solid wastes negatively affects the surrounding environment in case of random disposing whether in opened dumps or by exposed burning, or self burning in case of deserted areas or spaces inside population blocks (this is the situation in most areas). These effects have its impact on air, or the soil (the place of dumping the garbage) or water.

Impacts on air

Emission of bad smell in the surrounding area at the places of gathering (for a long time) or dumping. Production and emission poisonous and suffocating gases when they self-burn in the public dumps, especially that most of these wastes are put in plastic bags that produce carcinogenic gases when burnt.

Impacts on the soil

Solid wastes damage the soil, on which the dump is found, and some of the surrounding area as well as a result of leakage of water

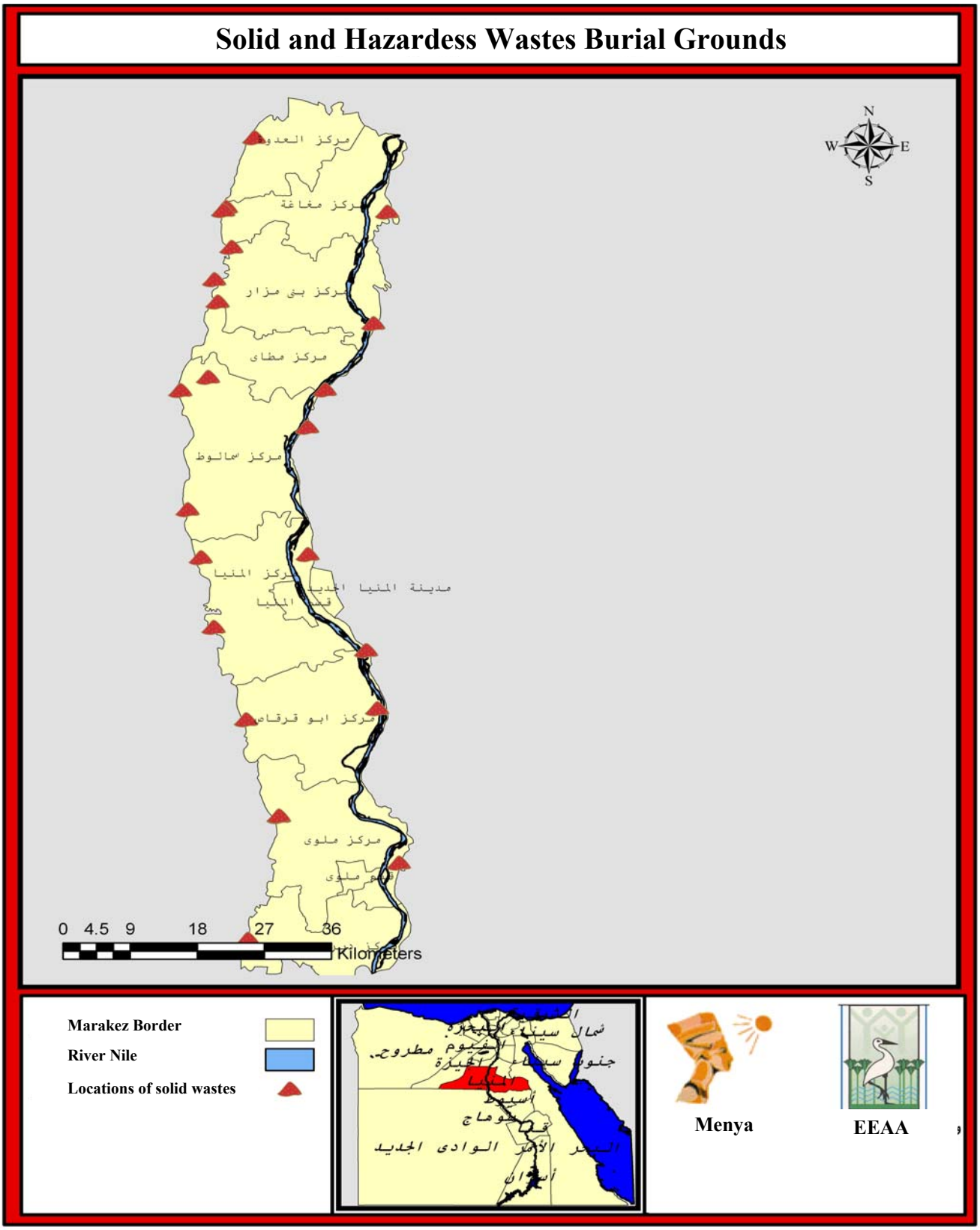
produced from the fermentation of the organic components in the wastes and the harmful substances found in the wastes leak to the surrounding area of the dump. Moreover, the characteristics of the soil change as a result of the self burn in the dump and the rise in temperature in the soils surface.

Impacts on water

Throwing solid wastes in the water paths or around leads to the leakage of some harmful chemical and organic substances to the water. As a result, the nature and characteristics of these waters change. Dissolved oxygen decreases and seaweeds as well as harmful organisms increase. The increase in the amount of (organic wastes) leads to an increase in the absorbed organic oxygen and the emission of bad smell in these areas. As a result, the percentage of heavy elements increases. It is worth mentioning that such pollutants transfer to the ground water reservoir through leakage.

Health impacts

There are direct and indirect impacts for these wastes through exposure to gaseous emission. Moreover, leaving these wastes exposed to air allows the growth of many harmful bacteria, germs, microbes and insect such as flies, cockroaches, rats that transfer many harmful and contagious diseases to man.


Solid and Hazardess Wastes Burial Grounds
N
W
E
S
مركز العدوة
مركز مغاغة
مركز بنى مزار
مركز مطاى
مركز سمالوط
مركز المنيا
مدينة المنيا الجديدة
قسم المنيا
مركز ابو قرقاص
مركز ملوى
قسم ملوى
0 4.5 9 18 27 36
Kilometers
Marakez Border
River Nile
Locations of solid wastes
Menya
EEAA

Map (8)

4-4 Energy

4-4-1 Uses of energy

Introduction

Air is polluted when coal and petroleum substances are burnt (oil – diesel – gas – fuel used at homes, factories, cars and other serving activities). Combustion produces big amount of carbon dioxide. During combustion carbon monoxide and sulphur dioxide as well as nitrogenous oxides are produced. All these pollutants dangerously affect public health.

Moreover, the quality of air is negatively affected by the emissions of some industries, such as:

- Sugar industry.
- Cement industry.
- Bricks and pottery industry.
- Plant coal industry.

Sources of energy

The most important sources of energy for most of the industrial activities inside governorate are:

1- Electricity.
2- Various petroleum substances (mazot, solar, kerosene, benzene, botagas).

Electricity:

Menya doesn't have station for generating electrical energy. It depends on the unified net to meet its demands of electrical energy. There is a main station (500/220/132/11 k.volt) at shousha village is Samallout (represents a key element regarding electrical supply in Menya

governorate) connected to the electricity generating station of the High Dam. It is supplied by 2 lines from Assuit transformers station 500 k volt. Menya governorate is also provided by electricity through a net of 220 volt supplied from the generating station of Koraymat and generating station of Haram hill 500 k volt which is connected to the unified net.

Middle Egypt Company for distributing the electricity is responsible for distributing and selling electrical energy to the subscribers over the average and the low voltage along the governorates of northern sa'eid. Menya governorate comes second place among the governorates regarding the annual amount of sold energy with a percentage of 27.5%, where as it comes fifth regarding the annual amount of energy consumed / individual.

As a result, no fears exist from any pollutants resulting from the use of electrical energy whether at industrial plants or in homes, this is because of the absence of electricity generating stations and the dependence only on transferred electricity.

Size and uses of electrical energy in the governorate (2006).

- Industrial and agricultural production (amount of consumed energy is 111154041 k.watt/hr.
- Public utilities (amount of consumed energy is 55.42 million k.watt/hs).
- Houses (amount of consumed energy 1081.22 million k.watt/hr).
- Commercial stores (amount of consumed energy is 23.1 watt/hr).
- Other uses (amount of energy consumed is 357.64 million).
- Average of the individual's annual share of electrical energy is 208.7 k.watt/hr.

- Average of the individual's monthly share of electrical energy is 174 k.wtt/hr.

Using petroleum substances

There are no accurate statistics about the consumption of petroleum substances in the industries inside the governorate, although some of which still depend on heavy petroleum substances as fuel (Abo korkas sugar factories – white cement factory at Beni Khaled at Samallout – Nile Company for in Menya city and some other small industries.

As previously illustrated, the combustion of these substances produces various gases, some of which are poisonous and heavy elements.

The average amount of the petroleum substances consumed annually reaches about 632088 tons from various petroleum substances. The net table illustrates the circulation the petroleum substances in Menya governorate during the period from 1-1-2005 till 31-8-2006.

Table

Note : requirements of public bakeries of solar = 9779 sac X 11 litres ÷ 1208 (liter/ton) = 89 ton/day approx. They governorate depends on companies working in the field of distributing petroleum substances to supply its needs. There are no industries of refining or producing petroleum substances there. Four main companies are working such field (Mobil oil – Esso – Misr petroleum – Co-op), in addition to caltex as a private sector company. The storage share of these companies reaches 1242235 liter/day of benzene, 6475138 liter/day of kerosene, 5653894 liter/day of solar, 1361598 liter/day of diesel and 1494 liter/day of mazot.

From these data, it is obvious how huge is the amount the resulting gases from burning this amount of petroleum substances whether in

production or service activities, especially if it is incomplete combustion with lack of supervision over transportation means and production equipment at the industrial plant.

Annual energy consumption and the resulting emissions some factories and workshops use electricity as a source of energy, as a result, no gaseous emissions, dust or smoke is produced. However, other factories, workshops in addition to the service activities such as bakeries restaurants and others, not to mention cars and industrial areas, and industries of cement, sugar, oils and others use the various types of petroleum substances besides electricity. As a result, large amounts of pollutants are produced. These pollutants are difficult to determine because of the inaccuracy of the reported amount of used petroleum substances. Table (54) illustrates in general the emissions resulted from the use of petroleum substances and then burning.

statement / ***Type***	***stock***			***coming***			***consumed***		
	Total stock	***Monthly average***	***Annual average***	***total***	***Monthly average***	***Annual average***	***total***	***Monthly consumed***	***Annual consumed***
Benzene	112940	5647	67764	195382	9769	117228	201626	10081	120972
Kerosene	11637	582	6984	48328	2416	28992	58393	2920	53040
Solar	96441	4822	57864	625359	31268	375216	637703	31885	382620
Diesel	26	0	0	0	0	0	0	0	0
Mazot	48753	2438	29256	141965	7098	85176	143203	7160	85920
Oils	10643	532	6384	12631	632	7584	12564	628	7536

Source / Supply bureau

Table (54) Emissions produced from combustion of petroleum substances

	The pollutant (emission)	*Source of pollution*
1	Suspended particles in the air	Cars that work on diesel – industrial zones – wastes burning In open places
2	Flying organic compounds	Furnaces – cars
3	Nitrogen oxides	Cars – industrial zones – service activities
4	Sulphur dioxide	industrial zones - Cars
5	Lead	Cars – foundries in industrial zones
6	Carbon monoxide	Cars – burning wastes

Source / Population and health bureau in Menya

5- Urban Environment

5-1 Introduction

Menya governorate lies within the province of northern Sa'ed which includes (Menya – Beni Sweif – Fayoum). Menya represents 46.2% of the total province population according to the 1996 census, followed by fayoum (27.8%), then Beni Sweif (26%). The population of this province represents 12.1% of the total country's population according to the same census. Menya governorate comes first among the governorates of the northern sales province in regards to the population number.

In addition, northern Sa'ed province is one of seven economic provinces with which the ministerial decree no. 495 economic provinces with which the ministerial decree no. 495 of the year 1977, amended by the decree no. 181 of the year 1986, was issued. Northern Sa'ed province represents a major importance for the rest of the planned provinces. It is the entrance of Sa'ed in which there are key cities, most important of

which is Menya, as it represents the key pole of development in the province and the center of civilization and cultural radiation. Agriculture is the main economic activity I the province along with industry and mining.

Menya lies within the green valley that reaches a width of about 18 to 20 km along the governorate from North till south.

The valley is adjoint from the east by the Nile with the presence of scattered area of reclaimed land along the eastern bank of the Nile in addition to some habitant clusters and various monumental sites and the regional Cairo. Aswan road to the east. The valley is adjoint from the west by Bahr Youssef in addition to reclamation lands west of Bahr Youssef. Reclaiming the land is done by mutual efforts between the government and the citizens. Main habitant clusters are found inside the green valley, the thing that necessitates going outside to habitat desert edges and margins towards east and west and establishing habitant clusters and various developmental projects with providing connection means between these projects and the existing civilization centers to accomplish the suggested regional developmental programs.

5-2 Suggestions for new cities

Habitant's clusters in Menya governorate vary between urban and rural. According to population estimation of the governorate 2005 till 2022, table (55) illustrates the size of urban clusters in the governorate (cities) and the size of rural local units (country side) and the population increase (urban and rural).

Table (55) Size of population clusters in the urban and rural parts of the governorate

S	*Markaz*	*Estimation of population no. in cities*		*Population increase 2005 - 2022*	*Estimation of population no. in marakez countreyside*		*Population increase 2005 - 2022*	*Estimation of Total marakez population*		*Population increase 2005 - 2022*
		2005	*2022*		*2005*	*2022*		*2005*	*2022*	
1	Menya	23,22	277,2	45,0	501,3	741,7	240,4	733,4	1019,0	285,6
2	Malloy	137,6	164,2	26,6	551,1	815,4	264,3	688,6	979,6	291,0
3	Samallout	87,1	104,0	16,9	475,2	703,1	227,9	562,1	807,0	244,9
4	Abo Korkas	57,6	69,0	11,4	408,0	603,9	195,9	465,7	672,7	207,0
5	Beni Mazar	60,7	72,5	11,8	392,2	580,3	188,1	453,0	652,8	199,8
6	Maghagha	69,6	83,1	13,5	350,5	518,5	168,0	420,1	601,7	181,6
7	Deir Mowas	38,3	45,7	7,4	262,1	387,8	125,7	300,4	433,6	133,2
8	Mattay	42,5	50,8	8,3	195,4	289,1	93,7	238,1	340,0	101,9
9	Odwa	15,6	18,6	3,0	177	262,7	85,2	193,1	281,3	88,2
Total		**741,2**	**885,0**	**143,8**	**3313,2**	**4902,6**	**1589,4**	**4054,4**	**5787,6**	**1733,2**

Source / inclusive layout of the governorate

As shown in table 55, no. of population of the governorate will reach 5.787.600 by 2022 with an increase of 1.733.200 in population. Mallawi comes first with an increase of 291.000, next is Menya city with an increase of 285.600. Last place is for Odwa with an increase of 88.200 person. Annual Growth rate reaches about 2.2%. Urban percentage increase annually with rate 1% to reach 2.4% by 2022. Therefore, the percentage of urban citizens reaches 23.4% against 76.6% representing the rural citizens.

As a result, there will be a suggestion of adding new urban clusters to the cities census, and from these clusters villages will be transferred to cities due to the increase in its population over 15 thousand person and because it lies in central areas regarding the services of other clusters.

Also a suggestion of establishing habitant communities reaching 15 thousand person in the desert hinterland on the eastern and western desert roads to reach about 14 new village. The base of such suggested clusters will be the already existing villages near the development areas. Thee clusters will hold about 210000 person until 2022. from these suggested and already existing new cities is new Menya city (existing), new Beni Mazar (suggested), New Mallawi (Suggested), new Samallout (suggested), new Zahraa' Mallawi (suggested). The population of the suggested cities will reach about 300000 person from the population increase until 2022, which is estimated to be about 1.733.200 person. The rest of this increase is found in the growth of the habitant clusters in the governorate whether cities or villages with the normal annual growth of 2.35%, in addition to the villages that are transferred to cities, except some clusters that are recommended to fix their size. These are the habitant clusters found in the 1st and 2nd degree agricultural lands, or the habitant clusters whose agricultural parameter or natural social factor don't allow population growth any further. Such growth is thus oriented

towards neighboring growing areas. Tables (56), (57) and (58) illustrate the location of the new cities and villages of the desert hinterland. These locations were chosen according to a paper presented from the public out of habitant planning which determined the criteria of choosing the suggested rural clusters, its function & size. These criteria are:

- Closeness from the road a well as the longitudinal and latitudinal axes.
- Distance from monumental sites.
- Distance from the present reclamation lands or the location of the new cities.
- Suitability of the soil.
- Depending on the available natural factors and economic activities as a base for the economic development.

Table (56) new villages of the desert hinterland

S	*Name of new village*	*Following markaz*	*Local unit in The village*	*Population Area/feddan*	*Housing Area/feddan*
1	New bahnasa	Beni mazar	Sadafa el far	2142	188
2	New azeema Mubarak	Samallout	Shousha	2081	200
3	New tona el gabal	Malloy	Tona el gabal	1795	185
4	New delga	Deir mowas	Delga	2100	----
5	New el ola	Abo korkas	Nazlet asmant	2100	----
6	New el ragaa'	Abo korkas	Saft el khemar	2100	----
7	New maghrabi	Odwa	Sheikh mas'oud	2000	----
8	New atef	Odwa	Atef heidar	200	----
9	New awlad el sheikh	Maghagha	May'net el waqef	1800	----
10	New sharouna	Maghagha	Sharouna	2000	----
11	New sheikh hasan	Mattay	Abo aziz	2100	----
12	New zawyet sultan	Manya	Nazlet Hussein	2000	----
13	New sheikh tammah	Abo koakas	Beni hasan El shourok	2100	----
14	New tal beni omran	Deir mowas	Tal beni omran	2000	----

Source / inclusive layout of the governorate

Table (57)villages of the first stage in the desert hinterland

S	*Suggested village*	*Village surface in feddan*	*Following reclaimed Areas / feddan*	*Location Inspection date*
1	New bahnasa	188	1954	27/7/2005
2	New azeeme Mubarak	200	1881	26/7/2005
3	New tona el gabal	185	1610	28/7/2005

Source / inclusive layout of the governorate

- Three villages and three cities are already being listed as a first stage in the national map of new habitant clusters, national wise, in 2002, they are :
- New Beni Mazar city.
- New Mallawi city.
- New Samallout city.
- New Bahnasa village in Beni Mazar.
- New Azina Muarak in Samallout.
- New ton Elgabal in Mallawi.

Table (57) illustrates the landscape of the first stage villages and the following reclamation area in the desert hinter land.

Table (57)

Table (58) also illustrates the suggested new cities in the desert hinterland, its area and estimated population no.

Table(58) new cities suggested in the desert hinterland

S01	*Suggested city*	*Area / feddan*	*Population in thousand*
1	New malloy	2700	56
2	New zahraa' malloy	1700	50
3	New beni mazar	95204	120
4	New samallout	3000	30

Source / inclusive layout of the governorate

Table (59) new suggested hinterland cities according to the location and the area

S	*New city*	*Markaz*	*Local unit*
1	New beni mazar	Beni mazar – east of the Nile	Beni samet village
2	New samallou	Samallout – west of the Nile	Shousha village
3	New malloy	Malloy – west of the Nile	Tona el gabal village
4	New zahraa' malloy	Malloy – east of the Nile	Deir el barsha village

Source / inclusive layout of the governorate

Preferred direction for habitant growth :

Habitant growth movement includes two main processes :

A- Growth and expansion process inside the spaces of the habitant clusters, as well as through expanding outside its boarders by crawling over the existing agricultural lands around these habitant clusters by building on it.

B- Determining the buildings inside habitant clusters, as the owners demolish their holds houses and rebuild it. As a result, the habitant pattern as well as the demands of these clusters of utilities change.

There determinants of habitant growth for the habitant clusters in Menya governorate, represented in:

a- Rive Nile.

b- Agricultural lands neighboring housing blocks.

c- Canals and drains passing through the cities and the villages.

d- Railway line that cuts the governorate from the north to the south.

As a result of the many determinants and obstacles against habitant growth all over the cities and villages of the governorate in all directions, there are some areas that are suitable for habitant growth on the space land found inside the parameter of the present habitant blocks away from the monumental areas. Vertical expansion is also possible by increasing the lights of the building in away that suits the width of the streets. Future population increase can be oriented towards the new cities such as new Menya city established in the desert east of the Nile to hold the population increase in the governorate.

Areas suitable for development in the governorate

Menya governorate is known for its vast area, however, the occupied part is only a limited area inside the Nile valley at the outpouring plain representing 7.5% of the total area beside some small habitant centers in the outpouring margins. The rest of its area is almost empty from population but not from other activities such as mining and pertification along with the movements on the desert roads and what is related from services and monumental centers. These areas can be summarized as follows:

A- Western margins

Found in the areas where the sand hills disappear, west of Menya governorate.

B- Eastern desert margin and the edge of the hill

Were there are many locations along this margin at meeting fronts between the outpouring plain and the rich agricultural soil and the desert with what is provides of grazing and establishing semi-independent habitant in addition to the abundance of natural resources such as the rocks necessary for building operations. There is also the lower part of sennor valley basin, where vast areas suitable for reclamation, in addition to the alabaster quarries inside the region.

C- Nile islands

There are 11 Nile islands within the governorate, with various areas reaching 2263.1 feddans, which are state property. Some of which are being traditionally cultivated by the holders. It is not being used to the best until now. Such part presents a wide range for sustained development.

5-3 Population areas and present cities and villages the current administrative division for the governorate.

Table (60) administrative division of Menya governorate

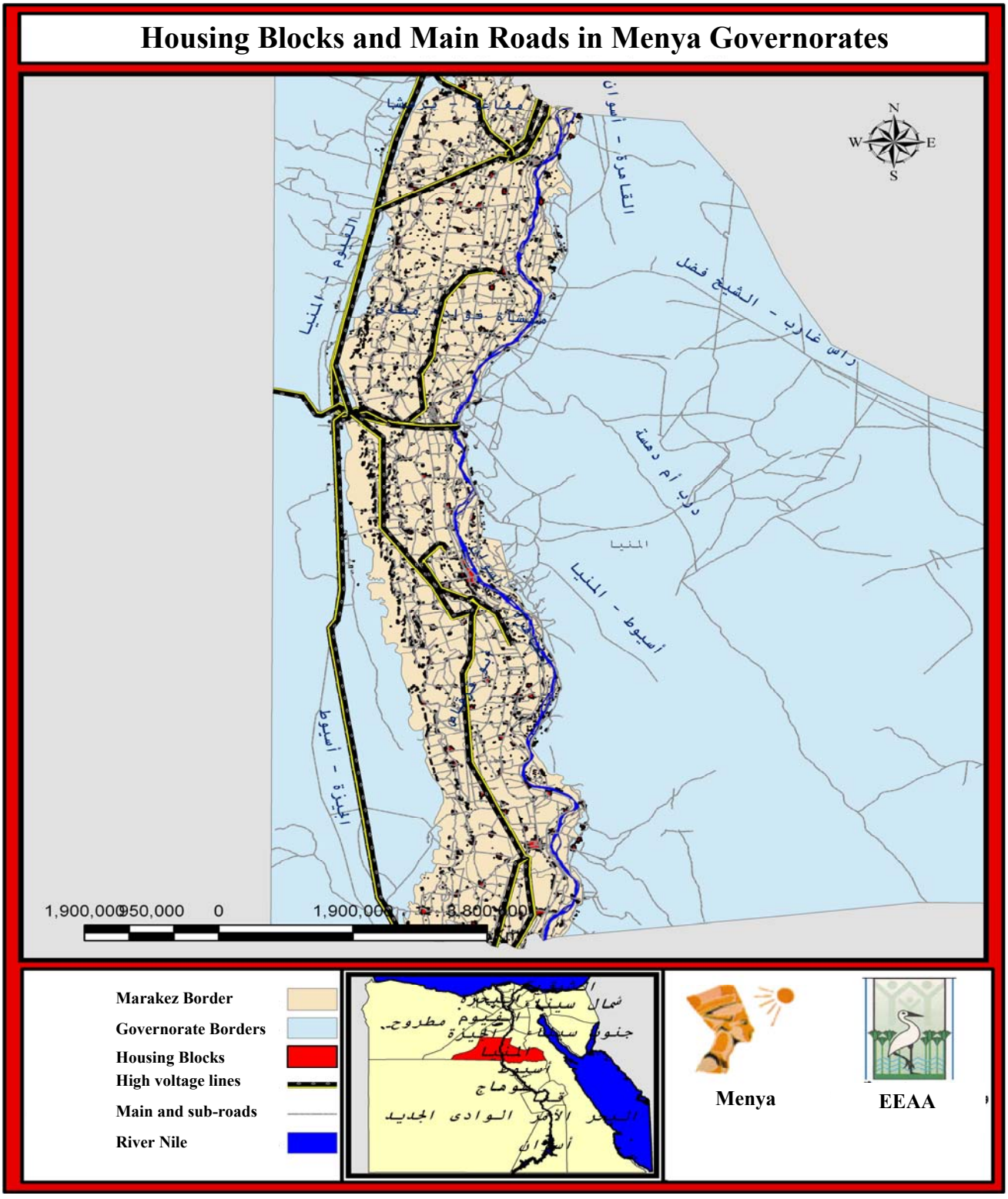
markaz	*Area in km*	*capital*	*Rural council*	*No. of villages*	*Population 2005in thousand*	*Population 2022 in thousand*
Odwa	3725	Odwa	4	26	193,1	281,3
Maghagha	7050	Maghagha	6	41	420,1	601,7
Beni mazar	7075	Beni mazar	7	44	453	652,8

Mattay	4300	Mattay	5	26	238,1	340
Samallout	9100	Samallout	9	54	562,1	807
Menya	6100	Menya	8	43	733,4	10190
Abo korakas	6900	Abo korakas	8	47	465,7	672,7
Malloy	8175	Malloy	9	49	688,6	979,6
Deir mowas	4162	Deir mowas	5	29	300,4	433,6
Total	56587		61	359	4054,4	5787,6

Source / Information Center in the governorate

As shown, areas of marakez vary among each other each provincial council serves 5 to 9 villages, moreover, area of the provincial councils are close, so is the population number knowing that each of Menya city and Mallawi city are independent regarding both area and population Menya city represents 9% of the governorates area, while Mallawi city represents 4%.

Map (9) illustrates the population areas and main roads in Menya governorate.


Housing Blocks and Main Roads in Menya Governorates
N
W
E
S
القاهرة - أسوان
الفيوم - المنيا
دراو - أم دمسة
المنيا
أسيوط - المنيا
الجيزة - أسيوط
1,900,000 950,000 0 1,900,000 3,800,000
Marakez Border
Governorate Borders
Housing Blocks
High voltage lines
Main and sub-roads
River Nile
Menya
EEAA

Map (9)

5-4 New habitant communities

New Menya city

Established new habitant communities in Menya governorate is represented in new Menya city. It lies east of the Nile facing the present Menya city. It has a strip feature above the eastern hill (altitude of 123-137 m. above sea level). The total areas of the city is 25000 feddans, whereas the habitant area there is 5000 feddans. A general layout for the city was prepared of area 3200 feddans from the habitant block, as illustrated in table (5-4-1) in the urban environment annex.

As shown from the table, 41% of the area was allocated to housing estimated by 1418 feddans, 12% for service areas, 30.2% for green areas, 4% of which in touristic areas, 1.6% crafts areas, 3.7% entertaining areas and 7.5% university areas. The city is to be established in four stages, the first stage is about 1113 feddans distributed according to table (5-4-2) in the urban environment annex.

Services in new Menya city

1- Educational services

- A primary, preparatory, secondary and technical secondary school is already established and operating, in addition to an industrial secondary school and an athletic military one.
- El-Amal school for mute and deaf, Mubarak-cole, a hotel school, an Azhar institution, and an educational compound as a branch for Menya university one all established, finished and being under operation. A primary school is now under construction in the second neighborhood of the first town and a secondary school in the markaz of the region in addition to a branch of Sadat Academy in Menya.

2- Health services:

- A medical center is now operating in the first town as well as a center for mental and motor rehab. Within the medical center and a family medicine unit in the Fourth town.
- An emergency hospital and a medical center have been established and are now under operation in the fourth town.
- A hospital of capacity 150 bed is now being under construction.

3- Security services

- A police station, fire-fighting building and civil defense are finished and operated.
- The building of the Traffic management has finished and is being under operation.

4- Religious Services

- 5 mosques are now working at the first and fourth town with capacity of 500 praying persons.
- 2 mosques of capacity 1000 praying persons are finished and operating in the first and fourth town.

5- Public services

- A telephone central of capacity 30000 line s finished and is operating (3000 in the first stage).
- Two postal building and one communication building are being operated in addition to the presence of five calling cabins in the city.
- Suzan Mubarak's center for exploratory sciences is operating.
- Center for social loaning unit and technical support is now operating (former Egyptian Italian center).
- Two nurseries at the first and the fourth town are operating.

- The social sport club is operating as well as the aviation club and a fun fair.
- A central enlistment area is operating serving Menya governorate and Beni Sweif.
- A mall is established in the first town, another one near the enlistment area and a third one near the traffic building.
- There are three balady bakeries and one fine.
- A bus station is established and operating (connecting the city with all the marakez of the governorate).
- A branch for housing and construction Bank is established and is under operation.
- A cultural center is finished and under operation.
- A public prison is under construction as well as an international youth camp and a mall in the fourth town.

5-5 Land uses

Menya governorate is considered the link between north and south with its developmental and economic capabilities in various fields (agricultural – reclamation – Tourism – industry – mining) and with what it represents of population weight that fill in the a real space within the governorate's boarders. Menya governorate represents 70% of the area of northern Sa'ed province since the total area of Menya is 32279 km^3 (source : Egyptian authority for survey in addition to the desert areas added by the presidential decree no. 188 of the year 1996 east and west. The populated area is 2411.65 representing 7.47% of the total area. The unpopulated area reaches 29867.35 km^3 representing 92.53% of the total area. Table (61) illustrates the lend uses in Menya governorate.

Table (61) land areas (km) and their uses in Menya governorate.

S	Location	Urban Rural	Total area (km2)	Populated Area (Km2)				
				Housing	Utilities and cemeteries	Lakes and waste lands	Agricultural and inside zemam	Agricultural lands outside zemam
1	Menya		312.3	14.457576	2.9710721	4.902948	290	16976 surface km, presidential decree 2020 of the year 1971 in the west Desert. 13206 surface km presidential decree 24 of the year 1994 in the East Desert.
2	Mallawi		293.28	13.368598	3.1803072	4.120558	270	
3	Maghagha		209.25	8.703601	1.6335297	2.256825	200	
4	Abo karkas		250.8	9.027583	1.9667732	4.108028	235	
5	Odwa		139	3.9877650	0.8224633	0.45428	128	
6	Bgeni mazar		254.28	8.601972	1.6342518	4.306802	243	
7	Deir mowas		153.07	5.678213	5.122751	2.434827	138	
8	Samallout		334	13.384052	2.7590576	6.143295	313	
9	Mattay		157.35	46.03704	0.3523747	1.385027	157	
Total			2103.33	81.80	16.83	29.7	1975	

Source / Agricultural management in Menya

The area of the habitant communities is 81.79 km^2 representing 25% of the total area penetrated by commercial areas, where there is no separated markets in the governorate. The same is applied on the infra structure (water stations – sewage – entertainment places – road networks and green landscapes are inside the housing block. Included in the area of the habitant communities as well is the technological infrastructure used in the governorate. The governorate is covered by an information network concerning most of the governmental services (especially personal affairs, social insurances, information centers in the governorate, communications, mobile networks, information technology centers). Using computers is widespread in almost all the governmental services. There is an approach to make Menya governorate an electronic governorate. Agricultural land inside and outside the Zemam reaches about 2131.88 km^3 representing 6.6% of the total area. In includes the irrigation network, agriculture drain within except some high lands east of the Nile and west of Bahr Youssef as well as the new reclaimed and under reclamation land. Such areas reed sources of irrigation whether from the ground water or the Nile. The area of the reclaimed land is about 86000 feddans distributed west of Odwa and samallout and west of Beni Mazar and east of Maghagha, Mattay and east of Deir Mowas. The areas reclaimed in these areas reach about 18000 to 22000 feddans the utilities and the cemeteries reach about 168.28 km^2 representing 0.52% of the total area.

The area of the wasteland and lakes reach about 0.3% of the total area. It includes the paved and unpaved roads network connecting the habitant communities which is about 17 km^2, as well as the railway (Cairo/Aswan) penetrating the governorate with about 135 km^2.

- Industrial are east of the Nile: this region lies about 20 km south the bridge lying on the Nile. It is found on an area of 1516 feddans in the eastern desert area. It will be illustrated in details when we refer to industries.

5-6 Available urban services

96.9% of the families living in the urban part of Menya have access to safe water against 62.7% in the rural area according to the Human Development report 2005 with an average of 80%. This means that there is about 20% of the families get their needs of potable water from unsafe sources without forgetting the difference between the urban and the rural. If the water is available for all the families in Menya city, it is not so in the rest of the governorate's cities this is illustrated from the data of potable water and sewage in this report.

Sewage

From what was previously illustrate in this report (sector of potable water and sewage), it is shown that there are no operating sewage networks except in Menya city, Abo korkas city, Odwa city, Deir Mows city and Bahnasa village. Such networks are not available in the rest of the village. However, sewage projects are now under execution in the rest of the cities. According to the Human Development Report 2005, the total number of families that gets safe sewage ranges between 97.6% in the cities and 87.4% in the countryside.

There is an important issue regarding defining safe sewage used above. Such term refers to the connection of the building or the house with mean for disposing solid and liquid human products, whether such connection is with networks ending by treatment stations, or with collecting or analyzing tanks that are periodically sweeped regardless the

draining of these wastes or even leaving it to dry at the bottom of the earth. On the other hand, citizen define "safe sewage" as the connection of their houses with networks ends to treatment stations and other than this is considered unsafe sewage. Taking this definition means that 75% of the families of the governorate are not connected with safe sewage, the thing that makes sewage service at the top list of public priorities all around the governorate.

Electricity service

The percentage of families subscribing in the electricity network in the governorate exceeds 94.2% from the total number of families. The actual number of subscribers is 745633. This percentage varies among the cities, reaching its maximum in Menya city and Abo korkas (100%) and its minimum in Deir Mowas city (88.6%). The same among marakez, where it reaches its maximum percentage in Beni Mazar city (100%) and its minimum in Deir Mowas. As for the villages, the maximum percentage was recorded in Nazlet Asmant village in Abo korkas (100%) whereas, the minimum percentage was recorded in Hasan village, Samallout markaz (77.4%). Electricity reached the least habitant communities and is available in mot of the streets. However, some streets in the cities, and most streets in the village are still not lightened due to the lack of periodical maintenance.

Collecting solid wastes

This service was previously illustrated in the sector of solid wastes. From which it was shown that this service was limited lonely to the cities and is not available in the villages. There are not integrated systems for running solid wastes. Still this service is achieved by cleanness workers in the local units who collect it from the points of collection in the streets

or ruined boxes. Worker are also grooming the streets but not in an efficient way.

Solid wastes is one of the major problems facing the cities. In the villages, the problem lies in the accumulation of animal and agricultural wastes in the streets.

Recently, some national societies are executing projects to recycle solid and agricultural wastes in the villages in support for the Canadian project that chose around 12 societies to execute these projects in the rural regions.

Gas

In the mean time, there is no natural gas network in the governorate. It depends on other fuel types (botagas – kerosene – solar – mazott), whether in industries or for domestic uses.

Telephones

According to the Human Development report 2005, the number of telephones for each 1000 individual is 61. Although such number is low compared to other governorates, public means of communications are available in better way. There are 75 centrals and about 1000 telephone cabin and 223 post offices.

Parks and Gardens

Such service is only available in the cities of the governorate. Menya, among other cities, is known for Kornich El Nil that stretches along the city north and south with length of 6 km of average width of 30 m. It is one of Menya city features apart from the other cities of the governorate. Green landscapes are available with average of 2-3 park/city. In the countryside, such service is not available.

Education

Menya University always had its leading role in encouraging and developing the awareness of the citizens towards having their kids join education with its various stages including boys and girls. Civil society organizations as well as the private sector contributed as well in providing educational services along with the public governmental sector and Azhar. Moreover, efforts of erasing literacy are noticeably active in the governorate. The percentage of adult literates above 15 year old (level of knowing reading and writing) varies within the governorate between the urban and the rural regions (46.7% in the rural areas – 80.3% in the urban areas). It also varies between the cities, as it ranges between 87.4% and 57.8%. It again varies between the villages from 12.3% to 80.8%. As shown, such difference is big and wide, but even gets wider between cities and villages. It is one of the dangerous features that has negatively affected the human and environmental development in the governorate, especially in the villages.

Table (5-6-1) in the annex illustrates the rate of reading and writing (15+) in Menya governorate 2003. It can be compared with the date of 2005 in the part 2-4-3 education paragraph the shows the descend of illiteracy percentage in 2005 as illustrated in table (5-6-1) in the urban environment annex.

The number of educational plants in the governorate reached 2028 school having 22765 classrooms, with about 933987 student, Table (5-6-2) in Urban environment annex the total number of schools, classrooms and students at different stages. From such table, we can notice the difference in number between student of the primary stage and those of the preparatory one which dropped from 575738 students in the primary

stage to 177068 students in the prep. Stage. The difference 398670 students represent the out flowers from the primary stage with a percentage of over 69%, the thing that reflects how dangerous it is on social conditions are the negative impact on development status. There are 295 azhar institution, 127 of which are primary, 102 prep and 58 secondary. There are also 6 readers where about 18430 students in various stages join. The number of erasing illiteracy classes reaches about 8851 class where about 7791 student join.

Health care

According to the Human Development Report 2005, the number of doctors joining Ministry of health allocated for every 10 thousand person in Menya governorate is about 5.2 doctor. This number exceeds what was recorded in 2003, where it was 4.6 for every 10 thousand. The number of nurses for every 10 thousand person is 9.4. The number of beds belonging to the Ministry of health allocated to every 10 thousand person reached 11.4 beds. The number of health units for every 100 thousand person is 2.6. This service was previously illustrated in the section of health.

5-7 Main economic sectors

Menya governorate is classified within the governorates of agricultural economic feature. It is now undergoing a phase of transformation towards multi economic activities (industrial – touristic). Table (62) illustrates the economic features of the governorate.

Table (62) economic features of the governorate

Activity	*No. of those working according to 2005 estimations*		
	males	***females***	***total***
Agriculture and fishing	76362	8674	85036
Mining and stone quarries	853	9	862
Transformation industries	13114	1281	14395
Electricity and power	1736	195	1931
Building and construction	8231	168	8399
Trading	10294	1391	11685
Hotels and restaurants	897	68	965
Transportation and communication	9096	350	9446
Stock exchange and house holding	4081	2305	6386
Public administration and defense	20836	4730	25566
Education	18774	11803	30577
Health	3011	2534	5545
Personal social services	2815	512	3327
Incomplete description activities	1010	222	1232
Total no. of working population	171110	34242	205352
% of working to the total population no.	24%	4%	28%

Source / inclusive layout of the governorate (department of habitant planning)

It is shown from table (62) that agricultural and fishing activities dominate the governorate. The percentage of those doing agriculture and fishing sector reached 57.83%, in other words, half of the man power works in the agricultural activity that is characterized, among its characteristics, by low production level.

Following is the education sector with 9.41% working in that field. This is related to the spread of education with its various stages specially with the presence of Menya University. Following is the Public Administration sector with 8.31% working in that field. This feature doesn't reflect civilization and economic growth, but the overcrowd of the governmental employers within the offices of local administration with its various levels. It is an indicator of masked unemployment.

The governorate is poor in the most important activity of improvement and development, that is, the activity of transformational industries. The percentage of those joining this sector reached 5.81%, a small share although there exist some industries based on raw agricultural materials such as food industries and spinning industries. The number of industrial plants with its various types reached 7.2 thousand plant with about 26.7 thousand workers. The activities are various, with furniture industry and food production in the first place, according to the number of plants, then comes the crafts activities with about 3.2 thousand plant in which 4.3 thousand workers are operating. The most important fields of which we shaping wood, metal products and spinning industries modern industrial projects include the industrial area east of the Nile. The number of executed and now producing projects is 71 project in which 5677 workers are working. It includes various groups of industries (will be illustrated in details in the industry sector).

Table (63) Plants distribution according to the no. of workers.

Plants	*Less than a workers*	*10-49 workers*	*50-199 workers*	*200- workers*
Food, beverage and tobacco	9	-	424	265
Ginning, spinning, clothes and leather	5	4	18	7
Wood and its products	-	38	233	512
Paper products, printing and publishing	-	87	15	-
Basic chemicals and products	-	85	74	159
Building materials, china and thermos	1	15	10	15
Basic metal industries	8	80	122	1
Metal products, machines and transport equipments	-	121	30	40
Other transformation industries	-	-	-	2071
Chemical and petroleum products and rubber	4	-	-	-
Non-metal mining materials	-	-	-	219
Basic metals	-	-	91	-
Personal services	-	-	-	-
Cultural crafts	-	-	-	-
Other crafts	-	-	-	-
Total	27	430	1017	3289

Source : Inclusive layout.

As for the commercial activities, about 53688 workers are in this business distributed among 15890 commercial plants and about 23 central market and about half this number, local markets in addition to about a thousands licensed street traders. Table (64) illustrates the most important commercial activities in the governorate.

Table (64) Important activities in the governorate.

Activities	*No. of units*	*%*	*No. of workers*	*%*
Private hospitals	22	0.14	478	0.89
Private clinics	574	3.61	2237	4.17
Pharmacies	556	3.49	1376	2.56
Labs.	46	0.29	243	0.45
Contractors	49	0.31	1085	2.02
Spices shops	273	1.72	619	1.15
Agricultural production requirements	116	0.73	300	0.56
Communication centers and private email	212	1.34	644	1.2
Brookers offices	87	0.55	189	0.35
Private high schools	6	0.04	1211	2.26
Private middle schools	28	0.18	3885	7.24
Private primary schools	51	0.32	1919	3.57
Photocopy shops	752	4.83	954	1.78
Butchery shops	708	4.46	1614	12.55
Shoe making and fixing work shops	354	2.17	958	1.78
Sugar cave juice shops	383	2.41	760	1.42
Ice cream shops	101	0.64	194	0.36
Grilled food restaurants	111	0.7	555	1.03
Coshary shops	96	0.6	457	0.85
Confectioners	75	0.47	323	0.61
Hairdressing shops	615	3.87	706	1.32
Cafes	478	3.01	1997	3.71

Activities	*No. of units*	*%*	*No. of workers*	*%*
Computer centers	33	0.21	153	0.28
Foul and Ta'meya restaurants	782	4.92	1432	2.67
Electricity activity	695	4.34	1639	3.05
Supermarkets and groceries	760	4.78	1208	2.25
Book shops	539	3.39	780	1.62
Jewelers shops	122	0.77	392	0.73
Fruits and vegetables shops	3448	21.69	4620	8.61
Gas stations	45	0.28	77	0.14
Game halls (pool – table tennis)	34	0.21	92	0.17
Gym halls	26	0.19	52	0.1
Currency exchange offices	2	0.01	20	0.04
Dairy shops	119	0.75	445	0.83
Tile workshops	85	0.53	442	0.82
Furniture workshops	557	3.51	1847	3.44
Car fixing workshops	77	0.48	201	0.37
Welding and smithery workshops	314	1.98	1139	2.12
Crops grinders	609	3.83	1059	1.97
Clothing and tailors shops	740	4.66	8348	15.55
Agricultural machines fixing workshops	97	0.62	210	0.39
Total	15890	100	53688	100

Source : Inclusive layout of the governorate.

It is shown that the commercial plant along with its workers out number the current and registered industrial plants. As also shown, the total number of industrial and commercial plants in the governorate is 80388 plants with a total number of workers of about 24 thousand.

Menya is full of touristic, historical, religious, treatment and entertainment sites. It has a hotel capacity of about 618 beds distributed between seven hotels of various stars, in which 500 workers are doing their job.

5-8 Environmental problems

Environmental problems are represented in the following:

a- Solid wastes resulted from the population activities. It increases with their increases and their needs to more services.

b- Industrial wastes resulted from industrial activities whether solid or liquid solid wastes represent a burden on the responsible authorities for such thing, whereas liquid wastes are a burden on sewage stations. These wastes could even be untreated which represent extra load on treating station and may lead to insufficient treatment which, in turn, contaminate water paths.

c- Noise resulting from the presence of workshops inside the housing blocks.

d- Air pollutants emitted from burning fuel in the factories especially with the absence of intact environmental administration inside these plants either because of economic conditions or because of the environmental in awareness of officials about operating and running these plants.

e- Habitant crawling towards monumental sites.

f- Elevation of ground water level and its threatening to the monumental sites and old buildings.

g- Intensification of the sewage problem due to the continuous habitant increase.

5-9 Monitoring programs and environmental observation

Some plants have self environmental observation such as the cement factory, the sugar company as well as some plants in the industrial region and the grinders. These plants set programs within itself to observe its pollutants, however, not in the required level. The EEAA in Cairo as well as Assuit ROB in association with Environmental affairs Administration in the governorate set inspection plans to visit the industrial plants in the governorate to stand up on the commitment of such plants to the legal standards.

Responsible authorities

In addition to the environment in-change person inside these plants, which are very few, the responsibility of monitor and observation lies on EEAA and its regional branch at Assuit as well as Environmental affairs administration in the governorate.

Measurements and observation

Emission of air pollutants, such as suspended dust, smoke, carbon oxides, sulphur, nitrogen and others, is detected and measured according to the measures reported in the regulation of law 4 years 1994. Water contamination can be measured through the percentage of turbidity, temperature and PH degree and all the data reported in the regulation of law 4 year 1994 regarding the specifications of the industrial drain water, and law 48 of year 1982 (that was explained in the chapter of water and sewage).

Standards and accepted limits (air - water).

The standards applied are those reported in law 4 year 1994, and its regulation no. 338, year 1995, amended by decree no. 1741 year 2005 regarding air pollutants inside and outside work environment, emissions and smoke. Annex 5, 6, 8 regarding air pollutants and annex no. 1 about standards and specifications of some materials when drained in the marine environment. Articles 65, 66 of law 48 year 1982 in case of draining in fresh waters or other and law no. 93 year 1962 in case of draining in the sewage in the cities and annex 7 from the regulation of law 4 year 1994 regarding standards of noise.

6- Economic Activities:

6-1 Agriculture and agricultural fields:

6-1-1 Introduction:

As previously illustrated, agriculture activity represents major importance for a large number of the governorates citizens. About 58% of the total working citizens work in that activity. The total zemam of the governorate reaches about 514656 feddans and 21 karats. The cultivated area inside the zemam is 437957 feddans representing 85% of the total area of zemam. This area is distributed among 261275 owners with an average ownership of 1.8 feddan/owner. Table (6-1-1-1) in the agriculture annex illustrates the distribution of agricultural ownership in Menya governorate.

From which 65% are owners of less than one feddan, 25% are owners of less than 3 feddans, 5.7% owns between 3 to less than 5 feddans. This means that the ownership from one feddan to less than 5 feddan represent 95.7%. There are about 3% owning from 5 feddans to

less than 10 feddans and 1.3 owning 10 feddans and more. According to the category of ownership, we can determine the social levels in Menya governorate. The low level are those who own less than 3 feddans and they represent about 90% of all owners. The average level are those who own 3-10 feddans and they represent about 8.7%. The high level are those who own more than 10 feddans and they represent only 1.3%. Agricultural lands were divided according to its production capabilities, as illustrated in table (65).

Table (65) Categorizing the production ability of the agricultural lands in Menya governorate.

Degree	***First***	***Second***	***Third***	***Fourth***	***Fifth***	***Sixth***	***Total area in feddans***
Menya governorate	86087	99794	89888	64524	49187	48477	437957
%	19.66	22.79	20.52	14.77	11.23	11.07	100

Source : Agriculture management – Information Center

From this table we deduce that the second and third degree are the dominating levels all over the governorate.

6-1-2 Main crops:

Table (66) illustrates the main crops cultivated in the governorate, dominating most of the cultivated areas.

Table (66) Crops cultivated in Menya (crop structure in 2003).

Crop	*Area / feddan*	*%*	*Production in ton*
Cotton	33612	2.7	2184680
Wheat	182959	14.9	3842139
Maize	260931	21.3	6087690
Rice	11	-	34
Oily crops	34767	2.8	382063
Sugary crops	36533	2.9	1762595
Fodders	123671	10	865697
Vegetables	41830	3.4	322292
Fruits except citrus	24888	0.2	147323
Orange and citrus	3994	0.3	22502
Medical and aromatic plants	19838	1.6	42250
Total	**1223631**	**1000%**	**25704677**

Source : Agricultural management – Information Center in Menya.

From Table (66), we find out that the current crop composition includes the following:

a) Summer Crops: including maize which is well planted in the region. The average production of this crop is high and it enters many industries. Sugar cane is one of the industrial crops. The production of the feddan is very high in this area, sugar industry as well as molasis and fodders depend on this crop.

   Summer vegetables crops and others.

b) Winter crops: Most important of which is wheat. The average production of the feddan reaches 20.4 Ardab in Menya, one of the highest averages all over the country.

Broad bean and fenugreek which is considered the highest productivity nation wide.

Sugar beet, clover, onions, garlic and perfume plants. According to the data reported from agricultural management, the most famous crop in the governorate that takes the first place over most of the other governorates is maize. The area cultivated in this crop in 2005 reached about 271181 feddans, 176382 feddans of wheat, 131684 feddans of clover, 38095 feddans of sugar cane, 33520 feddans of cotton, 25196 feddans of soya beans, 12594 feddans of garlic, 5966 feddans of medical plants (some are seasonal others are all through the year) and about 26375 feddans of gardens. Taking into consideration that these area vary annually, but still lie around it.

Menya governorate is one of the leading governorates, regarding agricultural production that represents about 11%, of the total agricultural production all over the country. Field crops represent about 7.6%, vegetables and fruits represent 3.6% of the country's production. Menya comes first place in producing bee honey and waxes.

The governorate produces more than ½ million ton of wheat, 1.7 million tons of sugar cane that is used in making sugar, molasses and juice and about 154 thousands ton of sugar beet that is used in producing sugar. The governorate also produces large amounts of vegetables and fruits that need more care especially in the field of producing these products and the possibility of exporting it. The governorate as well produces 27.1% of the medical and perfume plants all over the country.

On the other side, the area of land applicable to reclamation reached about 200 thousand feddans. That the area that is supposed to be reclaimed until 2022 according to the strategy of horizontal expansion (18 thousand feddans west of Beni Mazar, 6 thousand feddans west of Samallout, Maghagha and Odwa and 2550 feddans East of Abo Karkas). This area represents 0.8% of the total area that is supposed to be reclaimed by 2022 nation wide which is estimated by about 3.3 million feddans. The area of the land already reclaimed in the western desert and belongs to Upper Egypt agricultural company is about 3300 feddans to be irrigated by 3 elevation stations at Tarfa, Qamadeer and Saqola. However, the actual cultivated zemam is about 70 thousand feddans (3300 in addition to the excluded). Accordingly these is a problem of encroach upon the water share in the region.

Note: The cultivated areas of summer and winter crops vary through the years.

Table (67) Nile and regular summer crop composition

Lasting crops					Summer crops										
Crop	Area				Crop	Credit			Reform			Authorities	Total		
	Credit	Reform	Authorities	Total		Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Permanent	Temporary	Total
Garden	25449	863	63	26375	Cotton	27078	-	27078	6373	-	6373	69	33520	-	33520
Sugar cone	35451	2568	76	38095	Soy bean	19747	-	19747	5388	-	5388	61	25196	-	25196
Origanum	14	-	-	14	Maize	238929	-	238929	31874	-	31874	378	271181	-	271181
Jasmine	5	-	-	5	Pea-nuts	5166	-	5166	30	-	30	10	5206	-	5206
Marjoram	777	186	-	963	Sesame	5447	-	5447	314	-	314	2	5763	-	5763
Basil	-	-	-	-	Vegetables	10809	-	10809	13530	-	13530	120	24459	-	24459
Roses	-	-	-	-	Corn	1834	-	1834	1210	-	1210	-	3044	-	3044

Lasting crops					Summer crops										
Crop	Area				Crop	Credit			Reform			Authorities	Total		
	Credit	Reform	Authorities	Total		Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Permanent	Temporary	Total
Mint	-	-	-	-	Sun flower	-	-	-	402	-	402	-	402	-	402
Clover	141	-	-	141	Fermented cane wastes	137	-	137	-	-	-	-	137	-	137
Fodder	21	-	-	21	Exp.	-	-	-	-	-	-	10	10	-	10
Arboretum	5	-	5	10	-	-	-	-	-	-	-	-	-	-	-
Total	**61863**	**3617**	**144**	**65624**	**Total**	**309147**	**-**	**309147**	**59121**	**-**	**59121**	**650**	**368918**	**-**	**368918**

Nile crops										
Crop										
	Credit			Reform			Authorities	Total		
	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Permanent	Temporary	Total
Vegetables	3415	-	3415	-	-	-	-	3415	-	3415
Potatoes	-	4928	4928	-	-	-	-	-	4928	4928
Onion	-	409	409	-	-	-	-	-	409	409
Total	3415	5337	8752	-	-	-	-	3415	5337	8752

Table (68-a) lasting summer and winter harvest composition for 2005

Lasting crops					Summer crops										
Crop	Area				Crop	Credit			Reform			Authorities	Total		
	Credit	Reform	Authorities	Total		Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Permanent	Temporary	Total
Gardens	26581	873	69	27523	Cotton	27023	-	27033	6273	-	6273	75	33381	-	33381
Sugar cane	36306	2588	111	39005	Potato	933	-	933	2205	-	2205	10	3148	-	3148
Origanum	5	-	-	5	Fermented cane wastes	1124	-	1124	-	-	-	-	1124	-	1124
Jasmine	5	-	-	5	-	-	-	-	-	-	-	-	-	-	-
Marjoram	700	305	-	1005	-	-	-	-	-	-	-	-	-	-	-
Basil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lasting crops					Summer crops											
Crop	Area				Crop											
						Credit			Reform			Authorities	Total			
	Credit	Reform	Authorities	Total		Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Permanent	Temporary	Total
Mint	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clover	142	-	-	142	-	-	-	-	-	-	-	-	-	-	-
Fodder	21	-	-	21	-	-	-	-	-	-	-	-	-	-	-
Arboretum	5	-	12	17	-	-	-	-	-	-	-	-	-	-	-
Total	**63765**	**3766**	**192**	**67723**	**Total**	**29090**	**-**	**29090**	**8478**	**-**	**8478**	**85**	**37653**	**-**	**37653**

Source : Agriculture management – Information Center in Menya.

Table (68-b) lasting summer and winter harvest composition for 2005

Summer crops										
Crop	Credit			Reform			Authorities	Total		
	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Permanent	Temporary	Total
	163527	-	163527	12654	-	12654	201	176382	-	176382
Road beans	7869	-	7869	311	-	311	43	8223	-	8223
Clover	8291	14873	97364	29094	5027	34121	199	111784	19900	131684
Malt	207	-	207	186	-	186	-	393	-	393
Fenugreek	-	-	-	171	-	171	-	171	-	171
Onion	2403	2302	4705	265	554	819	7	2675	2856	5531
Garlic	9880	1612	11492	410	692	1102	-	10290	2304	12594
Vegetables	10547	-	10547	676	-	676	46	11269	-	11269
Lentils	-	-	-	-	-	-	-	-	-	-
Medical plant	1392	-	1392	4572	-	4572	2	5966	-	5966

Summer crops										
Crop										
	Credit			Reform			Authorities	Total		
	Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Permanent	Temporary	Total
Beet	3254	-	3254	1925	-	1925	19	5198	-	5198
Lupine	-	-	-	-	-	-	-	-	-	-
Chick-pea	-	-	-	230	-	230	-	230	-	230
Experiments	-	-	-	-	-	-	-	-	-	-
Total	281570	18787	300357	50494	6273	56767	517	332581	25060	357641

6-1-3 Main fruits:

The main fruits in the governorate are represented in grapes citrus, mango, bananas, fig, Guava, pomegranate apricot, pear, apple, peach and olive. The area cultivated in fruits except the citrus (as illustrated in the table) reaches about 24888 feddans. The area cultivated in citrus and oranges reaches about 3994 feddan. The governorate produces about 175 thousand tons of grapes, 25 thousand tons citrus, 20 thousand tons bananas, 9 thousand tons apples, 1899 tons mango, 2305 tons fig, 1737 tons guava, 80 tons pomegranate, 24 tons apricot, 26 tons pears, 14 tons peaches and 56 tons olive.

As illustrated, the most famous kind of food in the governorate is grapes which is considered one of the most important export crops, taking into consideration that the areas vary from one year to another, still the production rate of the feddan remain almost steady. This is shown from determining the areas from the year 2002 - 2003 till 2005-2006.

Tables (6-1-3-1) and (6-1-3-2) in the agriculture annex illustrate the variance in these areas.

6-1-4 Main vegetables:

The area of land cultivated in vegetables during the summer and the winter seasons (as illustrated in the previous table) reaches about 41830 feddans around the year. They produce about 378 thousand tons of various vegetables taking into consideration that the cultivated areas vary every year, still the productivity of the feddan remains around its rate as illustrated in tables (69) and (70).

Table (69) Important vegetables in Menya 2002/2003

S	***Sorp***	***Cultivated area in feddan***	***Productivity in ton***
1	Tomato	20398	301074
2	Cabbage	1316	10661
3	Squash	595	5548
4	Cauliflower	180	1564
5	Eggplant	1190	11055
6	Carrots	587	4802
7	Peas	406	2265
8	Molokia	1694	23442
9	Fasolis	329	1873
10	Turnip	10	60
11	Pepper	1866	13162
12	Okra	377	2379

Source : Investment guide in Menya – agriculture bureau

Table (70) Total area cultivated in vegetables inside and outside the parameter of reclaimed lands during 2005/2006.

S	*Vegetable*	*Cultivated area inside Zemam in feddans*	*Cultivated area outside zeman in feddans*	*Total area in feddans*
1	Tomato	5181	10563	15744
2	Cabbage	677	17	694
3	Peas	319	256	575
4	Carrots	662	-	662
5	Cauliflower	80	-	80
6	Egg plant	144	294	438
7	Spanish	13	-	13
8	Squash	13	-	13
9	Rockets	16	-	16
10	Lettuce	1	-	1
11	Korat	15	-	15
12	Pepper	20	200	220
13	Turnip	17	-	17
14	Fasolis	143	116	259
15	Colcasia	450	-	450
16	Lupine	54	-	54
17	Molokia	1271	-	1271

Source : Agriculture management in Menya.

From the previous tables, it is shown that tomato comes in the first places among vegetables production in the governorate where it reaches about 301074 tons annually followed by molokia with 23.5 thousand tons, pepper 13.2 thousand tons, egg plant 11055 tons, cabbage 10661 tons, squash 5548 tons, carrot 4802 tons, Okra 2379 tons, peas 2265 tons, fasolis 1873 tons, cauliflower 1564 tons and turnip 60 tons. The tables as well reflect how for these vegetables can be used in establishing industrial projects.

Medical an aromatic plants in Menya governorate.

The cultivated area of medical and aromatic plants in the govenorate reaches about 20 thousand feddans around the year. It produces about 14.5 thousand tons of plants and aromatic seeds annually. Adiantum comes in the first place with 10303 ton cultivated annually, then cumin with 1409 ton, marjoram with about 1195 tons and chamomile with around 2 tons annually as illustrated from table (6-1-3-3) in the agriculture annex.

Tables (6-1-3-3) and (6-1-3-4) in the agriculture annex illustrate the importance of these products and the possibility of establishing products that depend on these products whether in producing oils or perfumes. This production represents about 27.1% of the total production of medical and aromatic plants country wide, taking into consideration the variance in these areas from one year to another without changing the production rate of the feddan.

6-1-5 Agricultural chemicals:

Due to the absence of agricultural awareness among formers, there is still dependence on agricultural fertilizers and chemicals in a large scale. The farmers think that the more the added chemicals and fertilizers to the soil, the more the production. In addition, there is still a random over use

in agricultural pesticides to face agricultural insects and lesions, the thing that lead to the death of the natural enemies of these lesions. Among the most important agricultural chemicals used are: chemical fertilizers with its kinds, organic fertilizers and agricultural pesticides with its various types. The next table illustrates the amount of agricultural chemicals used annually or seasonally.

Table (71) Amount of agricultural chemicals used.

S	Type	Amount used	Notes
1	Chemical fertilizers	6922250	Annually
2	Organic fertilizers	4-5 million m^3	Annual or seasonal
3	Pesticides	As illustrated in table 74	Various types and weights

Source : Agricultural management

However, farmers have recently returned to the use of organic fertilizers resulted from animals manure. They add such organic fertilizers to their fields during preparing the agricultural land. The average amount of added organic fertilizers for one feddan/season ranges from 10-15 m^3. In some cases, the amounts are added annually. Wastes of poultry granges are also used especially in the fruit gardens, fruit trees and important crops, due to the expensive price of this kind of fertilizers (poultry wastes). The governorate has 2 factories for recycling garbage and producing organic manure in Menya city and Mallawi. A third one is under construction in Odwa city though the demand on such kind of manure is weak. There is also a factory for producing organic manure out of agricultural wastes at the industrial area in Menya. It's annual production reaches about 18 thousand tons of organic manure. However, most of its production is exported. There are also some projects for

producing organic manure as in samallout markaz (a small factory following a national society). The agricultural guide in the governorate establishes piles of organic manure out of agricultural wastes in the fields as an example of guiding projects.

Among the advantages of using organic manure is the improvement of soil quality as well as its ability to keep water, which is very important, especially in a climate like this of the governorate.

Moreover, main elements are added to the soil along with minor nutrients to help achieve the balance between carbon and nitrogen. As for the disadvantages, it is represented in the spread of weeds, grass seeds and microbes as well as the transfer of some diseases through the bacteria. The overuse of organic manure can lead to temporary depletion of nitrogen. Such thing can be overcome by burying the wastes long enough before adding it to the soil. It should also be added in suitable amounts.

Nitrogen (in the form of Azott), phophorus (in the form of phosphate) and potassium (in the form of potassium fertilizer) are considered the most important and main nutrients for the plant, that is used as fertilizers Nitrogen is the key element that should be added to the soil as chemical manure. Menya governorate uses about 489 thousand metric ton of azottic manure (15.5%) annually. Fertilizers can be used in different forms (urea-ammonium nitrate - calcium nitrate - sulphur - ammonium). About 126181 metric tons of phosphate fertilizers are used annually, 15% of which in the form of Super tri-phosphate added during the preparation for cultivation during the year. About 76963 metric tons of potassium fertilizers are used 48% of which in the form of potassium sulphate, which are added to vegetables and trees around the year. This is illustrated in table (72).

Table (72) Chemical fertilizers demand for Nile and summer crops in 2005.

Crop	*Area*	*Determined in kilo*			*Requirements in ton*		
		Azotic 15.5%	*Phosphatic 15%*	*Potassic 48%*	*Azotic 15.5%*	*Phosphatic 15%*	*Potassic 48%*
Gardens	26375	600	200	50	15825	5275	1319
Sugar cone	38095	1500	300	100	57142	11428	3809
Origanum	14	1200	300	50	17	4	1
Jasmine	5	1200	300	50	6	2	1
Marjoram	963	800	300	50	770	289	48
Clover	141	100	100	50	14	14	7
Fodder	21	1200	250	50	25	5	1
Arboretum	10	400	200	50	4	2	1
Cotton	33520	450	150	50	15084	5028	1676
Soy bean	25196	350	150	50	8819	3779	1260
Maize	271181	650	100	150	176267	27118	40677
Peanuts	5206	200	100	50	1041	521	260
Sesame	5763	250	150	50	1441	864	288
Vegetables	24459	250	150	50	6115	3669	1223
Corn	1210	500	50	50	605	60	60
Sunflower	2236	200	100	50	447	224	112
Sugarcane wastes	137	350	150	50	48	21	7
Exp.	10	-	-	-	-	-	-
Nile vegetables	3415	250	150	50	854	512	171
Nile potato	4928	800	300	100	3942	1478	493
Onion	409	400	50	50	164	20	20
-	-	-	-	-	288630	60313	51434

Source : Agriculture management in Menya.

It is shown the impact of using such large quantities, the thing that leads to the increase of poisonous mineral concentration, which produces a defect in the chemical balance of the soil. The remaining undissolved amount of these amounts leak to the agricultural drain water, that runs in turn to the fresh waters and the ground water causing environmental imbalance in the quality of water.

Table (73) Organic fertilizers added annually or seasonally to the land.

S	*Season*	*Cultivated area*	*Rate of adding the organic fertilizer*	*Notes*
1	Winter	45-46 thousand feddans	10-15 m^3/feddan	Adding the fertilizer is repeated annually or seasonally according to the needs.
2	Summer	45 thousand feddans	10-15 m^3/feddan	
3	Nile	45-46 thousand feddans	10-15 m^3/feddan	

Source : Agriculture management in Menya.

The use of agricultural pesticides is still taking place in the governorate whether it is insecticides or herbicides, in addition to the biological resistance to terminate most of the lesions. Due to the decrease in areas cultivated in cotton, which requires regular pesticides spraying, the rate of using such pesticides decrease and became limited to the brands mentioned in the following table.

The table illustrates that the amounts used of pesticides are still big the thing that reflects how dangerous these substances are especially that it is being used randomly and without taking the necessary precautions. As a results, the negatively affect public health when such pesticides

spread in the air or the soil or the water. It is critical then to expand the use of biological resistance. As for herbicides the week along canals are being resisted manually without using herbicides.

Table (74) amounts of insecticides used in the governorate in 2005

S	***Type***	***amount***	***Way of use***
1	Apployed	104,150 liter	spray
2	Hostatheon	790 liters	Poisonous bait
3	Atapron	4,853 tons	spray
4	Topron	60 liters	spray
5	Sopfertan	4,136 tons	spray
6	Concentrated detergent	6 tons	spray
7	Consult	45,400 liter	spray
8	Agerin	2,709 tons	spray
9	Confidor	174,800 liter	spray
10	Liquid sulphur	503 liter	spray
11	Vaicoveek	45,200 liter	spray
12	Rhizolex	558 kg	Seeds treatment
13	Cascade	1,440 tons	Spray
14	Bestban	30,512 liter	spray
15	Telton	21,045 liter	spray
16	Challenger	500 liter	spray

Source/ Agriculture management

6-1-6 integrated management to fight lesions:

Integrated management for terminating lesions in Menya governorate includes all the practices that limits the insect pollutants. Such approach includes using cultivation techniques, mechanical methods as well as using strong and variant ways of biological control. It also

include agriculture techniques & cultivation pattern as well as deep cultivation for the soil, controlling irrigation and draining as well as using mechanical ways to remove sick plants.

Also, the use of biological resistance as an alternative for pesticides to save the natural enemies to regain balance in the agricultural environment. Moreover, choosing the crops that resist diseases & insects such as wheat, maize, sugar cane, ... etc and following the agricultural cycle.

6-1-7 Agricultural crops wastes:

The amount of agricultural wastes about 1321785 ton of agricultural wastes results from cultivating various crops around the year, as shown in the next table. IT is also shown that the largest amount of wastes result from maize that reaches about 523400 tons of wastes, followed by wheat with 364135 ton, sugar can with 238660 tons, and Soya bean with 32105, and so on. The amount of wastes resulted varies from one markaz to another due to the difference in the cultivated area.

Table (75) agricultural wastes of different crops (in ton) according to the cultivated areas.

1- summer season										
Cotton	***Maize***	***Corn***	***Soy bean***	***Peanuts***	***Sesame***	***Sun flower***		***Potato***	***Sugar cane***	***Total***
Ton	***Ton***	***Ton***	***Ton***	***Ton***	***Ton***	***Ton***	***Ton***	***Ton***	***Ton***	***Ton***
50030	523400	15765	32105	18865	11355	4200	15500	4675	238660	914555

Source : Agriculture management.

Food Industry wastes Factories based on agricultural products produce wastes. Most famous of which is Sugar industry that depends on sugar cane and sugar beet. It produces about 183 thousand tons of wastes annually. Around 551382 tons of sugar cane & sugar beet are consumed annually. However, a part of it is used as fuel in the same factory (bagas), another part goes to the fodder industry in the same factory as well. There is also the industry of molasses. Menya governorate has around 116 squeezers (71 in Mallawi markaz and 45 in Deir Mowas markaz). Bogas resulting from cane sugar is reused as fuel at the same squeezer.

There are other factories that produce wastes such as factories of drying onions and garlic, factories of drying medical plants (in odwa and Maghagha) and factories of Halwa Tehenia (7 in the governorate). There are no available data for the wastes of these factories, but it seems small amounts.

6-1-8 Management of agricultural wastes:

As previously mentioned, the governorate produces about 1321785 tons of agricultural wastes annually. Large amounts of which are used as animal fodders or making manure piles. Also, some are being minced or treated with urea and used also in organic fertilizers. In addition, some are used as fuel in cooking and baking in the country side, other are used in factories to use organic manure, there is a factory for recycling agricultural wastes in the industrial area in Menya that uses these wastes to produce organic manure. It's production capacity reaches about 20 thousand tons of organic manure, some is used locally, and other is exported. The factory holds about 60 thousand tons of these wastes annually, as they are collected from the fields.

There are also 2 factories for recycling garbage and producing organic manure (in Mallawi and Menya), as well as some factories that produce animal fodders that uses the wastes of the industries based on agricultural wastes. They are currently 3 factories. As for the daily amounts, farmers burn them, the thing that pollutes the air, or even store it which makes it a shelter of harmful rodents.

Recycling these agricultural wastes can be improved by doing the following:

- Paper and card board industry.
- Pressurized wood industry.
- Light furniture and decorations industry.

6-1-9 Fish wealth and fish farms:

Introduction:

This activity is of relatively small importance in Menya due to the limitation of water surfaces that are represented only in the Nile and its branches (Serry canal-Bahr youssef - Ibrahemya canal- other small canals). The areas committed to the main canals include 36 area, all of which are in Bahr youssef, Sery canal and Ibrahemya canal of total area of about 6465 feddans.

As for fish farms, they don't exceed 84 farms. The number of fishing boats are about 1314 boat, the number of licensed fishermen is about 1383 in 2005 according to the data of the authority of fish wealth in Menya.

Size of Fishing.

The total amount of fish reaches about 3837 tons with an increase of about 400 ton to 2003.

The number of licenses increased to 1383 fishermen during 2005. The following table illustrates the amount of fish and its kinds.

Table (76) Fish amounts and types in 2004.

Type	*Bolti*	*Cat fish*	*Bayad*	*Keshr bayad*	*Shal*	*Besarya*	*Labeis*	*Other kinds*	*Total*
Amount	1312	220	180	149	150	345	305	1176	3837

Source : Agriculture management.

As shown in the table, Bolti fish is the dominant kind in the governorate, followed by besarya then Labis. The data of fish production indicates that the governorate contributes with a very little share (0.5%) of the total country's production of fish. Such thing is worth attention and working on increasing the production through preventing the contamination of water paths, improving the shipping boats and establishing fish farms in cages along the river banks, as well as using the islands in the Nile to establish fish farms in cages and tanks. It is worth mentioning that at the mean time, the industrial artificial fish incubators, east of the Nile, is being expanded to produce bolti fish as well as El-Mabrouk fish to deliver it to the Ministry of irrigation to fight weeds in canals and drains.

6-1-10 Environmental problems related to agricultural activity:

Problems related to agricultural wastes.

- Air pollution as a result of burning agricultural wastes in the fields.
- Throwing some of these wastes in the water paths blocking them & preventing the water to reach to the plants. Moreover, the wastes rotten which leads to water contamination.

- Some farmers store some of these wastes, especially cotton and maize wastes, which provides a rich environment for same harmful insects to complete its life cycle in.
- Transferring some of these wastes over the roofs of the houses, causing several environmental dangers whether when burning these wastes and use it as fuel or as being a reason for the spread of harmful rodents.

Problems related to pesticides.

- Using pesticides that are not recommended by the Ministry of agriculture, and in an unsafe way.
- The residual effect of these pesticides remains in the soil for decades; moreover, it gets mixed with the ground water and the irrigating water causing harmful effects on man and animal.
- Using the empty containers in other purposes and not getting rid of it safely.
- Not following the necessary precautions during spraying the excess use of pesticides increases the immunity of the lesions against the pesticides as well as the increase of toxicity level, the thing the negatively affects the plant, which in turn affects man increasing certain disease such as liver and kidneys diseases in addition to cancer.

Problems related to chemical fertilizers:

- Because of the absence of irrigation right after fertilization, some of it evaporates causing the production of harmful gases, such as ammonia and urea gases.
- The excess amount of fertilizations leads to the leakage of some of it to the ground water.

- The overuse of fertilization causes a disturbance in the natural balance of the soil as well as its fertility (environmental deterioration).

6-1-11 Environmental monitoring and observation programs:

Responsible authorities:

Environmental monitoring takes place through observation programs at the agricultural management are set by responsible officials there. There is a department for environmental management in the agricultural management. There is also a lab for analyzing water and soil as well as observing soil pollutants and fertility, water pollutants. Moreover, there is a weather observation station to determine the time of cultivating the various crops.

Measurements and observations:

- The following as been observed and measured.
- Soil pollutants from pesticides and various soil and plants diseases.
- Water pollutants and its ability to be reused.
- Agricultural weather forecast.
- Usage of different agricultural pesticides.
- Getting rid of cheated pesticides as well as the expired ones.

Legal limits and standards:

This is done according to the standards of laws and regulations organizing the use of pesticides or the reuse of treated sewage, as mentioned in decree no. 44 of the year 2000 regarding the amendment of the regulation of the law no. 93 of the year 1962 regarding draining of liquid wastes, and article 15 of the regulation that determines the standards and specifications required in the treated sewage reused for agricultural uses.

6-2 Mines and Mining

6-2-1 Introduction

The mining wealth in the governorate is represented in stone quarries ores such as the line stone, loam, alabaster, marble, basalt while sand, yellow sand, gypsum and stones. The number of working stone quarries within Menya governorate ranges between 334 in 2003 to 289 in 2005. The number of stone quarries varies from one year to another according to the economic condition. Around 4 thousand workers are working in this field.

Table (77) no. of stone quarries and its types in Menya.

Type of ore	*No. of stone quarries 2003*	*%*	*No. of stone quarries 2005*
Lime stone	288	86.22	250
Marble	9	2.69	10
Loam	2	0.60	2
Sand	17	5.09	16
Basalt	2	0.60	2
Stony soil	2	0.60	8
Gypsum	14	4.19	1
Total	334	---	289

Source : Department of mines and stone quarries in Menya.

As illustrated in, the line stone quarries represent a majority among other types of quarries (about 86%) followed by sand with its various types (5.09%).

6-2-2 Mineral wealth in the governorate

First: Marble

It is formed from solid crystallized lime stone. Its color & solidity degree vary according to its location, some of it is solid, and some is average solid. Amongst its colors is the white, pale yellow, grey and pink red. Marble is characterized by the presence of nemolite excavations that mostly different in color from the rock material of the marble itself. Moreover they are arranged in specific directions and various degrees of accumulation. After polishing the marble it gives it an obvious beautiful shape.

Menya governorate has many marble locations, some of which contain solid crystallized lime stone of different colors (especially those located east of the Nile). This type of marble contains nemolite excavations other locations west of the Nile contains marble of the solid nemolite lime stone characterized by its white and pale yellow colors. This type contains nemolite excavations with obvious accumulation.

Uses of marble

Marble is used after being cut into sheets of specific thickness and different lengths. It is then polished and used in high quality building and decoration processes like buildings' fronts, floor tiles and stairs table (78) illustrates the location, size and annual product of this raw.

Table (78) Type, location and amount of ores. The total area above and under the ground. The annual production, no. of stone quarries and stock in the governorate.

Type of ore	*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Total size of ore in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
Pale and Dark yellow marble	Village 8 west of Menya	113158	1350000	1463158	270000	3000	2400	340
	Village 7 west of Menya	82547	1050000	1132547	210000			
	Balnasora west of Abo korkas	49749	1350000	1399749	270000			
	Sakal 2 west of Odwa	120203	900000	1020203	180000			
	Sakal 1 west of Odwa	20000	100000	1200000	20000			
	Village 4 west of samallout	8507	122500	121007	22500			
	Dour El-Abyad west of Odwa	---	125000	12500	25000			
	Total of yellow marble	---	112500	112500	22500			
Total of yellow marble.		---	---	5494164	1020000	3000	2400	340
Grey marble	Village 8 west of Menya	10000	10000	20000	2500	3000	2400	1
	Total gray marble	10000	10000	20000	2500	3000	2400	1
White marble	Village 8 west of Menya	37719	450000	487719	90000	3000	2400	156
	Village 7 west of Menya	41273	525000	487719	90000			

Type of ore	*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Total size of ore in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
	Balnasora west of Abo korkas	16583	450000	466583	90000			
	Samah 1 west of Odwa	10000	357500	367500	52500			
	Samah 2 west of Odwa	40086	300000	340086	60000			
	Sakal 3 west of Odwa	34030	350000	384030	70000			
	Total white marble	---	---	2622191	467500	3000	2400	156
Red marble	Deyaba east of Abo korkas	19080	225000	244080	45000	3000	2400	98
	Qour El-ghada west of Beni Mazar	750000	--	750000	250000			
Total red marble		--	--	994080	295000	3000	2400	98

Source : Department of mines and stone quarries in Menya.

The strategic stock pile of marble

Table (78) illustrates the various types of marble found in Menya governorate and its locations as well as the approximate amount found. it also illustrates the strategic stockpile of the raw material and the number of stone quarries enough for such stockpile to operate it in the future in a way that guarantees for the investor the continuity of the project established on using this ore.

Second: Lime Stone

Lime stone is a precipitation rock composed mainly from Calcite metal (calcium Carbonate). When the percentage of these carbonates reaches more than 95% of its composition, this rock becomes pure and white in color. In case of the presence of other additional metals in its rock composition, its color changes to grey or yellow.

Lime stone rocks represent the basic structure of the eastern and western hill along the sides of the Nile valley in the governorate. In the western hill, the lime stone appears in many spots above the surface, however, most of it is covered by sand precipitation, stones and sand hills. In the eastern hill, there are exposed parts of lime stone covering vast areas and at large amounts. It includes several geological formations precipitated above each other belonging to the Eocene era. These formations are Menya's formations, above which Samallout's formation, and covered from the top at some spots the formation layers of Maghagha. These formations are different from each other in color, solidity, chemical composition as well as its excavation component. The lime stone of Samallout's formation represent the part of the major economic importance as it is present in large surface areas with big thickness, in addition to its rock composition that contains very high percentage high quality calcium carbonate. It is formed of semi-homogenous chalk layers of minute grains of colors between snow white

and pale pink white. The thickness of these layers various forma region to another according to the topographic phenomena (5-50 m). This typical kind of lime stone is found in several areas in the eastern hill, east of the Nile. As for the lime stone of Menya and Maghagha formation, it is either dolomite, marlior charity. It contains low percentage of calcium carbonate, which makes it of low economic importance.

Uses of pure lime stone

Pure chalk lime stone is used in various industries either as a basic element, or as a secondary one, such as iron industries, chemical industries, paints, cement industry, glass industry. Sugar industry, paper industry poultry fodder industry and lime industry. It is also used as one of the building materials elements as well as in preparing and paving roads.

Table (79) Type, location and amount of ore total area, annual production and no. of lime stone quarries.

Type of ore	*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Total size of ore in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
Pure Samallouty Lime stone	Northern region sheikh Fadl-sararya	225 m	375 m	600 m	90 m	3500	7040	126571
	Middle region wasta- Beni Khaled Tahna	500 m	1500 m	2	200 m			
	Sourthern region zawyet soltan – Beni Hasan.	382.5 m	1147.5 m	1530 m	1530 m			
	Total pure time stone.	--	--	4130 m	4130 m	3500	7040	126571

Source : Department of mines and stone quarries in Menya.

Strategic stockpile of lime stone

Table (79) illustrates the locations of chalk lime stone in Menya governorate, the approximate amounts found. it also illustrates the strategic stockpile of the raw material and the number of stone quarries enough for such stockpile to operate it in the future in a way that guarantees for the investor the continuity of the project established on using this ore.

Third: Loam (tafla)

Loam is one of the crumbling precipitation rocks of minute grains of diameter less than 1/16 mm. As a result of pressure, these rocks separate into parallel, according to their color, into two groups, the first has a color ranging from grey to black. It represents a precipitation environment stored away from air and contains more than 1% carbonic substances. The second group has colors that range between brown, red and yellow that indicates the presence of red and yellow iron oxides (hematite and limonite) as viscous particles inside loam precipitations.

There are several locations in Menya governorate that contain mud and loam precipitations spread east and west of the Nile. At some of these locations, loam is found above the surface of the earth in the form of conical and semi conical hills of different heights. In other locations, loam is found under the surface which depth extend that varies from one area to another. It is covered from the top by recent precipitations of sand and stones of simple thickness.

Uses of loam

Loam is considered of the pure type if it is from sand, gypsum and other minerals. However, its use still is related to several factors, most important of which:

1- Metal composition and its percentage.

2- Natural characteristics such as degree of elasticity. Mechanical endurance and the melting point.

In general, loam is used in the industry of Portland cement, colored porcelain ceramic tiles industry, pipes industry, loam bricks industry and pentonite material industry that is used in digging ground water and oil wells.

Table (80) Type, location and amount of ores. The total area above and under the ground. The annual production, no. of stone quarries and stock in the governorate.

Type of ore	*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Total size of ore in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
Loam	Gosa Abo Khesheer	583587	---	583587	2821639	250000	50000	11
	Red clif	466667	---	466667				
	Mohasham mountain	11510044	---	11510044				
	Under Mareer mountain	1500000	---	1500000				
	Under Qarara mountain	5000000	5000000	10000000				
	Gihad village	2500000	2500000	5000000				
	Around bahnasa bazelt	4000000	4000000	8000000				
	Boweib-baroud	400000	400000	800000				
Total loam		25960298	11900000	38760298	2821639	250000	50000	11

Source : Department of mines and stone quarries in Menya.

Strategic stockpile of loam

Table (80) illustrates the locations of loam in Menya governorate, the approximate amounts found. it also illustrates the strategic stockpile of the raw material and the number of stone quarries enough for such stockpile to operate it in the future in a way that guarantees for the investor the continuity of the project established on using this ore.

Fourth: White Sand

White sand is crumbs precipitations whose molecules are formed as a result of the detritions of igneous or transformed rocks as a result of the various corrosion factors. Igneous and acidic transformed rocks of high component of Silica (more than 66%) are the main source of the formation of white sand grains. Its detrition produces quartz, whereas other metals such as feldspar are decomposed into pure hydrous alumina silica (kaolin) of white color. Sand stone, in general, is formed from sand grains ticked to each other by an adhesive material that may be lime or iron, or ordinary clay. The white sand stone found in Menya governorate is formed from quartz grains sticked to each other by white kaolin substance.

There are several locations of white sand in the eastern region of Menya governorate on the western side of Qena valley. White sand is found on surface and subsurface extensions in the valleys branched from Qena valley. It is a depth extension of more than five meters. These sands have milky white color; it is rich in quartz grains. It contains as well multisized grains of kaolin.

Uses of white sand

White sand with what it contains of kaolin grains are considered highly economic value raw materials. Ti represents a key element in several important industries, such as white cement industry, ceramic industry and glass industry.

Table (81) Type, location and amount of ore. Total area, annual production and no. of white sand quarries in Menya.

Type of ore		*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Total size of ore in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
White Sand	Loc. 1	At the boarders of Red sea governo-rate	1308333	2400000	3708333	436248	150000	30000	24
	Loc. 2		11304000	2000000	13304000	1330400			
	Loc. 3		276385	500000	776385	132915			
	Loc. 4		3956608	525000	4481608	343462			
	Loc. 5		28619792	300000	28919792	1326562			
	Loc. 6		1839843	--	1839843	110390			
Total white sand					**53029961**	**3679977**	**150000**	**30000**	**24**

Source : Department of mines and stone quarries in Menya.

Strategic stockpile of white sand

Table (81) illustrates the locations of white sand in Menya governorate, the approximate amounts found. it also illustrates the strategic stockpile of the raw material and the number of stone quarries enough for such stockpile to operate it in the future in a way that guarantees for the investor the continuity of the project established on using this ore.

Fifth: Basalt

Basalt is an igneous rock of black or dark brown color, surface or intertwined. It is characterized by being solid and coherent. It contains fixed dividings that facilitate its petrifaction. Basalt is formed from basic metals: Plagioclase feldspar, olivine and augite.

Basalt is found in Menya governorate in the form of high hills known as "the black continent". These hills may be separated to connected in the form of a chain of heights of separate peaks. These locations spread east and west of the Nile.

Uses of Basalt:

Processing basalt results in regular shaped masses, multi sized pebble and powder, each of which is used different degree is used in the asphalt mix used in paving roads. Small pebbles are used in the mosaic tiles industry basalt powder is used in the industry of grey cement and bricks. Manufactured basalt blocks are used in lining some roads and tunnels. More over, when it is melted, it is used in the industry of basalt wool which isolates temperature.

Table (82) Type, location and amount of ore. Total area, annual production and no. of basalt ore stone quarries.

Type of ore	*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
Basalt	Bahnasa west of Beni Mazar	1950000	--	1950000	2500	25000	1375
	Delga west of Deir Mowas	593650	--	59365			
	Abo Had eastern boarders	1780950	--	178095			
	Qoleib – west of Beni Mazar	6600000	--	80000			
	Fondas neck west of samallout	1600000	--	200000			
	Ezyyar west of Maghagha	4000000	--	250000			
Total Basalt				3438460	2500	25000	1375

Source : Department of mines and stone quarries in Menya.

Strategic stockpile of basalt

Table (82) illustrates the locations of basalt in Menya governorate, the approximate amounts found. it also illustrates the strategic stockpile of the raw material and the number of stone quarries enough for such stockpile to operate it in the future in a way that guarantees for the investor the continuity of the project established on using this ore.

Sixth: Yellow sand and stones

Yellow sand and stones are crumbling precipitations formed from rock grains because of corrosion and erosion factors of previous rocks.

Sand is rock grains of size varying between 1/16 mm to 2 m. It precipitates in the river environment in the medium height parts of the old river sides. Stone is rough grains of size ranging from 2 m to 64 mm. It precipitates in the upper parts of slopes that adjoin the valleys.

Most of the yellow sand and stone is found in the western region of Menya governorate. Sand is concentrated in the northern parts in addition to some stone clusters. In the southern parts, stone is found inside silty soil of brown and red color.

Uses of sand and stone

They are mainly used in various building process and all the ordinary and ferroconcrete. They are also used in the industry of hollow and solid cement bricks.

Table (83) Type, location and amount of ore. Total area, annual production and no. of stone are quarries.

Type of ore	*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Total size of ore in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
Stones	Northern region Bahnasa Atel Heidar	--	5200000	5200000	1950000	50000	30000	108
	Middle region shousha saft Gharbiya	--	1785000	1785000	1105000			
	Southern region Balnasora Delga	--	12950000	12950000	2350000			
Total stone		**--**	**19935000**	**19935000**	**5405000**	**50000**	**30000**	**108**

Source : Department of mines and stone quarries in Menya.

Strategic stockpile of stone

Table (83) illustrates the locations stone in Menya governorate, the approximate amounts found. it also illustrates the strategic stockpile of the raw material and the number of stone quarries enough for such stockpile to operate it in the future in a way that guarantees for the investor the continuity of the project established on using this ore.

Table (84) Type, location and amount of ore. Total area, annual production and no. of stone quarries.

Type of ore	*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
Bazelt	Northern region Bahnasa Atel Heidar	--	60750000	10250000	20000	90000	622
	Middle region shousha saft Gharbiya	--	9950000	2050000			
	Southern region Balnasora Delga	--	600000	150000			
Total yellow sand		**--**	**71300000**	**12450000**	**20000**	**90000**	**622**

Source : Department of mines and stone quarries in Menya.

Strategic stockpile of yellow sand

Table (84) illustrates the locations of yellow sand in Menya governorate, the approximate amounts found. it also illustrates the strategic stockpile of the raw material and the number of stone quarries enough for such stockpile to operate it in the future in a way that guarantees for the investor the continuity of the project established on using this ore.

Seventh: Alabaster

Alabaster rocks in general represents one of the massive or pressured gypsum formed from calcium sulphates. Egyptian alabaster, however, is formed mainly from calcite metal (calcium carbonate) found in the shape of veins inside the levels of cracks, caves and splits spreading inside the lime stone. These veins are most of the time disconnected with no unified thickness. Therefore, they appear in the form of small and large grains. The depth of their extend depends as well on the nature of the place it is found in. as a result, this depth varies from one place to another. Alabaster veins are found in Menya governorate east and west of the Nile inside some valleys, such as Shorafa valley, Ebada valley, Omrany valley and Bershawi valley; as well as the eastern part of Asas valley. Some of these veins were previously discovered by the ancient Egyptians.

Uses of alabaster

Due to the special nature of alabaster regarding its various colors as well as it hardness, it is mainly used in the industry of decorative stones, statues and monumental antiques. Fractions of these rocks are used in high quality mosaic tiles.

Note: it is difficult to determine the areas and amounts of alabaster, because it is found in nature in the form of veins that vary in thickness length. Moreover some of it appears on the surface, other is buried under the earths surface.

8- Gypsum

Gypsum is one of the evaporated precipitations. Its formation is mainly attributed to the evaporation of water concentrated in calcium sulphates. It represents one of the weakly rigid minerals with glassy to

pearly luster. Its color may be white or pale grey of transparent pale yellow. Gypsum is found most of the time in the form of vertical cracked masses, or grains in the loam precipitations or with the lime stone.

Some gypsum locations are found in Menya governorate, especially east of the Nile facing the village of Nazlet El-Gadamy east of Maghagha.

Uses of gypsum

Gypsum precipitations are used as late substances in cement industry, and as an assisting substance in glass and china industry. It is also used in fertilizers industry as well as building works.

Table (85) Type, location and amount of ore. Total area, annual production and no. of gypsum stone quarries.

Type of ore	*Location*	*Approx. size of ore revealed above the ground in m^3*	*Approx. size of ore expected under the ground in m^3*	*Approx. total area of the ore in m^2*	*Min. on area per quarry in m^2*	*Expected annual production per quarry in m^3*	*No. of quarries enough for the ore to operate (stock)*
Gypsum	Zawyet godamaeast of maghagha	1500000	--	1000000	40000	60000	25
Total gypsum		1500000	--	1000000	40000	60000	25

Source : Department of mines and stone quarries in Menya.

Strategic stockpile of gypsum

Table (85) illustrates the locations of gypsum in Menya governorate, the approximate amounts found. it also illustrates the strategic stockpile of the raw material and the number of stone quarries enough for such stockpile to operate it in the future in a way that

guarantees for the investor the continuity of the project established on using this ore.

6-2-3 Environmental problems related to the mining sector air

- Because of the opened work in these stone quarries and the use of traditional tools, light dust spreads in the air polluting the area especially that most of it is near to the Nile valley and the outpouring plain crowded by population.
- Workers of this sector don't take the necessary precautions during their mining work. As a result they become exposed to lung petrification and other chest diseases, the thing that maker them unable to continue working in this job and become burden over therapy organizations in the country.
- Some workers are exposed to dangerous accidents due to the nature of the unsafe used tools (some owners use gunpowder in explosion).
- The Earth

The region gets polluted by stone quarries wastes due to the unplanned extraction for these area. As a result natural raw materials are wasted. Moreover, inability to use the raw materials under the surface as most of it is covered by operating stone quarries wastes due to the inability of the equipments to extract it in addition to the shortage in capacities.

Water

The influence of these stone quarries on the water, weather surface or inner, is limited because most of it are from lime stone and marble. However the amount of dust coming from the stone quarries may fall into the Nile increasing the turbidity & may block the sunlight affecting the fish. However, such thing is limited.

6-2-4 Observation and monitoring programs

Measurements and observation

Programs of observation and environmental monitor are almost absence inside these stone quarries except for some of the stone quarries following the Iron & Steel Company – Beni Khaled sector. Samallout east of the Nile, as well as the stone quarries following the white cement factory east of the Nile, Beni Khaled – Samallout – Menya. Percentage of suspended and inhaled substances is measured as well as the noise. How far are the workers committed to the necessary precautions during operation is also being observed.

Standardized limits according to the law

Measuring the suspended and inhaled substances as well as noise (in the mentioned stone quarries) are done according to the allowed limits according to law no. 4 of the year 1994, and its regulation no. 338 of the year 1995, amended by the decree no. 1741 of the year 2005 and the articles 22, 35, 36, 39, 42, 44 and annex 6, 7, 8 illustrating the standards and limits of emissions from dust and others as well as the standards of noise produced from the used equipments and methods of protecting the workers from especial cloths & others and how far they are committed to these standards.

Responsible authorities

Procedures of follow up and measurements are done by EEAA (Assuit RBO) and the Environmental affairs Department at the governorate in association with other monitoring authorities such as professional safety & health department, environment and surfaces police force, department of mines and stone quarries at the governorate.

6-2-5 Environmental management policies of the stone quarries

- Sudden periodical inspection on the stone quarries to make sure that they are committed to the environmental standards and using protection methods for the workers.
- Using up to date equipments and providing safety methods in these equipments.
- Organized and safe disposal of stone quarries wastes.
- Paving the unpaved paths and spraying it with water to limit the dust during the pass of the cars.

6-3 Industry

6-3-1 Introduction

Agricultural activity represents the base of the economic foundation in Menya governorate. In addition, industry represents an important activity in the structure of economic activity. It is the dynamic component in the governorate's development and an essential factor towards achieving bigger scope of variety.

Industrial sector in the governorate is divided into two main parts:

- Extract industry which was previously illustrated in the mining sector.
- Transformational industrial activity, some of which follow the public sector, others follow the private sector and the public business sector. Transformational industries represent an important activity in the economic structure. Until recently, the industrial sector in the governorate depended on workshops and traditional small industrial plants. However, during the last years, modern industries were introduced to the governorate after establishing the industrial area east of the Nile, as it encouraged private sector investors to establish a

number of such industries representing a new and true start of economical variance, not to mention the vacancies it offer.

As for simple industries and craft workshops, they spread all over the governorate. Total number of industrial plants of various types reached 7230, the biggest share of which goes to the plants of transformational industries (furniture industry food industry – Beverages – Tobacco) followed by crafts activities, taking part. However, the total number of workers reaches about 27 thousand worker. As for modern industrial projects, they involve projects in the industrial area cost of the Nile. The number of executed projects that are already producing, until the time of preparing this report, is 71 project in which 5677 workers are involved. It covers various types of industries.

6-3-2 Industrial Zone

Menya governorate established an industrial zone east of the Nile near Matahra 12 km south east the bridge on the Nile. Its area is 1516 feddans and lies 6 km away from New Menya city, adjoined from the west by the agricultural road parallel to the Nile, from the east there is a hill. The structural layout of the region was designed to accomplish the most effective use of the land. It was divided according to the expected degree of pollution, in the form of industrial cells, each cell specialized in a specific industry, and each cell is independent. In addition, there is a central services center and a compound for small industries on an area of 43 feddans contains about 390 unit, the area of each unit is 190 m^3 (142 m^2 of which is covered and 48 m^2 is opened).

The cells were also divided in pieces suitable for tye type of industry and the expected size of demand, provided that the region can take 600 projects with 55 thousand workers. The cells were divided

according to the degree of pollution produced, taking into consideration the prevailing wind in the region. Their division from north to south is as follows:

1- Food industries.

2- Furniture industries.

3- Textile and clothes industry.

4- Paper and printing industry.

5- Medical products industry.

6- Engineering industry.

7- Building materials industry.

8- Metal industry.

In addition to the cell of artesian wells and the central service center and three sub centers and small industries compound.

Land distribution in the region

The environmental dimension was taken into consideration when distributing the lands in the region to accomplish the most effective use of the land and preventing the industries from affecting one another. The following table illustrates the land distribution in the region showing that the industrial uses reached about 63.14% of the total area without forgetting the green areas there which represent about 2.77% of the total area. Roads covered about 22.68% of the total area with lengths reached 14 km inside the region. Some of these roads are currently being cultivated with trees.

Table (86) Land use distribution in the Industrial zone in Menya.

S	Percentage	Usage
1	63.14%	Industrial use
2	11.41%	Central service center and sub centers
3	2.77%	Green area
4	22.68%	Roads

Source : Industrial zone development Institution in Menya.

The financial approval for establishing the utilities and basic structures was 103.63 million pounds that was completely spent. The required amount to complete the basic structure is estimated by 92.37 million pounds. Table (6-3-2-1) in the industry annex illustrates the estimated costs to establish the basic structure, what has been an executed in million pound until 30-6-2005. It is shown that the highest costs were spent in potable water as it costed 35.165 million pounds followed by sewage, then electricity. More than 75% of the water network is done and about 50% of the sewage and about 45% of the electricity network and about 50% of road pavement, and 50% of the administration buildings. The main potable water network was established completely, as well as the main pumping station and the sub network for the first sector. An upper reservoir of capacity 800 m3 was established, another one of capacity 4000 m^3 is under construction. Water sub lines for the second, their and fourth sectors is being under construction.

As for electricity, a transforming station of 500 mega volt Ampere is established costing 22 million pounds. The electric current is now connected to 99 projects. Roads of 94 km length and 7.2 m width are paved, 6 km of which are planted with trees. As for the sewage,

establishing the main network is now completed as well as the sub lifting station. The main fitting station is now under construction along with ejection lines and oxidizing lakes. As for the completed admin. buildings; the admin building of the region's affairs, civil defense unit, fire fighting, ambulance Regarding telephones, a central of capacity 900 line is established with an expansion capacity to hold another 3000 line. Equipments and cables are now in place and 33 and line are now operating until the time of preparing this profile.

Industrial projects in the industrial zone

The total number of projects that already reached production stage in the industrial zone reached about 71 projects the costed 278.339 million pounds offering 5677 job opportunity. There are about 57 projects under construction costing 130.777 workers. Moreover, there are about 34 projects in the stage of preparation that will cost about 410.367 million pounds and can take about 3999 worker, as illustrated in table (87).

Table (87) Projects, investment costs and labor until the date of preparing this profile.

S	***Type of projects***	***No. of projects***	***Investment costs in million pounds***	***Size of labor***
1	Projects in the stage of production	71	278.339	5677
2	Projects under construction	57	130.777	3175
3	Projects in the stage of preparing the documents	34	410.367	3999
	Total	**162**	**819.483**	**12851**

Source : Industrial zone in the region.

Table (88) Projects in the stage of production in the industrial zone.

S	Activity	No. of projects
1	Chemical	14
2	Food	22
3	Medical	-
4	Building materials	14
5	Metallic	7
6	Plastic	-
7	Clothes	7
8	Engineer	3
9	Furniture	3
10	Paper	2

Source : Industrial zone in Menya.

Table (88) illustrates that food industries comes on the top list of the projects in the zone, so is the working labor in that regard.

6-3-3 Main industrial plants

As previously illustrated, the number of industrial plants important of which are the transformational industries that represent about 28.6%, followed by wood industry and its products, as it represents about 10.3%, then food, beverages and tobacco industry that represent about 9.4%. As illustrated in table (89), all these plants hold about 27 thousand workers.

Table (89) no. of plants, existing industries and no. of workers.

Type	Plants		Labor	
	No.	%	No.	%
Food industries, beverage and tobacco	682	9.4	1738	6.5
Ginning, spinning, clothes and leather	31	0.4	1188	4.5
Furniture	745	10.3	1782	6.7
Paper products, printing and publishing	102	1.4	284	1.6
Basic chemicals and products	159	2.2	392	1.5
Building materials, china & thermos	34	0.5	474	1.8
Metallic and basic industries	203	2.8	881	3.3
Metallic products, machines	191	2.6	552	2.6
Other transformation industries	2071	28.6	13853	51.9
Other	3012	42	5539	20.8
Total	**7230**	**100**	**26683**	**100**

Source : Safety & professional health dept. & Habitant planning dept.

Table (6-3-3-1) in the industry annex illustrates as well registered at professional health and safety department (Labor force).

6-3-4 Medium and small industrial projects

There are several registered craft workshops in Menya governorate, represent about 6.41% of the total productive workshops in the country. They vary in the type of their activities.

Metal products, machines, wooden products represent a good feature of small industries in Menya. The workshops that work in the field of machines and supplies can actually serve several other related industries.

Workshops in the field of wooden industries represent the biggest percentage of the total workshops in the governorate, in addition to the workshops in the field of non metal mining materials (stone quarries) as previously illustrated in the mining sector.

The total number of workshops in Menya is 3224 in which 4265 workers are involved, as illustrated in table (90).

Table (90) Registered crafts plants and its labor in Menya.

Type	Plants		Labor	
	No.	**%**	**No.**	**%**
Chemical	78	2.4	141	3.3
Non-metallic mining ores	219	6.8	345	8.80
Basic metals	91	2.8	105	2.5
Metallic products and equipments	974	30.2	1381	32.4
Wood and crock	1142	35.4	1433	33.6
Ginning, spinning and its products	345	10.7	386	9.5
Paper, printing and publishing	71	2.2	108	2.5
Food, beverages and tobacco	281	8.7	341	7.9
Other crafts	23	0.71	25	0.58
Total	**3224**	**100%**	**4265**	**100%**

Source : Safety & professional health dept. & the Industrial zone in Menya.

Medium and small industries Menya governorate:

Table (91) average and small industries in the governorate, illustrating the type of product, no. of workers, wastes and method of disposal

S	*Name of plant*	*Raw materials used*	*Type of product*	*No. of workers*	*Wastes*	*Method of disposal*	*Legal body*	*notes*
1	Metal formation factory In Menya	Iron ore	Iron products	9 workers	Iron pieces	Sold as junk	Private Sector	No industrial Drainage
2	35 black honey factories In the villages of Malloy	Sugar cane Crop	Cane honey	255 workers 5-9 workers for Each factory	Molasses and Cane wastes	Cane wastes is Used as fuel to Produce honey, The molasses is Sold	Private Sector	Industrial Drain takes Place in Reservoirs that Are sweeped.
3	Reedy factory for fodders In New Menya	Maize, minerals, vitamins, soy beans, cotton seed, yellow maize.	Chicken fodders Grainy and soft Animal fodders, Cotton seed oil, Soy oil.	8 workers	Liquid, solid	The liquid is Drained Industrially in a Reservoire and The solid has no Treatment	Private Sector	Industrial Drain takes Place in Reservoirs that Are sweeped. Solid wastes are Reused in Making fodders

4	Macca factory for isbidag oxides in the industrial zone in Menya	Stone pieces	Isbidag	8 workers	Flying dust	------	Private Sector	No industrial Draining
5	El-Kamal batteries factory in the industrial zone in Menya	Sulphur Hydroxide, Lead plates, Copper plates	Car batteries	7 workers	Lead Remainings	Sold and Reused	Private Sector	No industrial Draining
6	Ebeid macaroni factory At Beni Mazar	Flower, salt Water	Various forms Of macaroni	7 workers	Suspended Dust, Macaroni Fractions	Sold as fodder	Private sector	Industrial Drain, cooling (closed circuit)
7	Fawzeya rice processing At Beni Mazar	The rice crop	Pure rice	7 workers	Rice crust	Some of the Crust is sold, Some is being Burned and Smoke results	Private sector	Industrial Drain, cooling (closed circuit)
8	Farouk macaroni factory At Samallout	Flower, salt Water	Various forms Of macaroni	7 workers	Product's Remainings	Remade, and the Broken is sold As fodder	Private sector	Industrial Drain, cooling (closed circuit)

9	Ahmady macaroni factory At Samallout	Flower, salt Water	Various forms Of macaroni	7 workers	Product's Remainings	Remade, and the Broken is sold As fodder	Private sector	Industrial Drain, cooling (closed circuit)
10	Ra'ei factory for Halawa In Samallout	Sesame, sugar, cane honey, additives.	Halawa tehenia And tehhina	7 workers	Liquid	Dumped in Special sewage	Private sector	There is a Consistent Indust. Drain
11	High trade factory for Fiber glass in the Industrial zone	Fiber glass, Chemical subs. Artificial colors Adhesives	Sinks and Hygiene products	5 workers	There is Industrial Wastes	Dumped Haphazardly	Private sector	No industrial Drainage
12	Asdekaa' factory for Cutting marble	Marble plates	Marble tiles, Marble plates	5 workers	Marble Fractions And powder	Sold to tiles Workshops	Private sector	No industrial Drainage
13	Fara'na rice processor In Beni Mazar	Rice crop	Pure rice	5 workers	Rice straw	The straw is Burned	Private Sector	No industrial Drainage
14	Shere'ei macaroni factory At Samallout	Flower, salt Water	Various forms Of macaroni	6 workers	Product's Remainings	Remade, and the Broken is sold As fodder	Private sector	Industrial Drain, cooling (closed circuit)

15	Halawa tehinia factory In Samallout	Sesame, sugar, cane honey, additives.	Halawa tehenia And tehhina	5 workers	Sesame crust Water mixed With other Substances	The crust is sold As fodder, the Water is Drained	Private sector	No treatment Units for the Industrial drain
16	Asdekaa' macaroni Factory in Malloy	Flower, salt Water	Various forms Of macaroni	5 workers	Suspended Dust, Macaroni Fractions	The dust is Absorbed by Absorbers, the Fraction is sold As fodder	Private sector	Industrial Drain, cooling (closed circuit)
17	Arab company for dairy Products in New Menya	Dairies	Dairies products Cheese, yoghurt	5 workers	Cheese water	Drained in the Waste water network	Private Sector	No treatment Units for the Industrial Drain
18	Oxygen packing factory In the industrial zone	Oxygen gas	Filling Cylinders with Oxygen	6 workers	Broken Cylinders	Are stored	Private Sector	No industrial Drainage
19	Tawheed factory for Fodders in the Industrial zone	Agricultural Wastes	Animal fodders	6 workers	None	None	Private Sector	No industrial Drainage
20	Assalam macaroni factory At Samallout	Flower, salt Water	Various forms Of macaroni	4 workers	Product's Remainings	Remade, and the Broken is sold As fodder	Private sector	Industrial Drain, cooling (closed circuit)

21	Nasr factory for halawa tehinia in Samallout	Sesame, sugar, cane honey, additives.	Halawa tehenia And tehhina	4 workers	Sesame crust Water mixed With other Substances	The crust is sold As fodder, the Water is stored in reservoir	Private sector	No industrial Drainage
22	Fahd factory for wood Processing in new Menya	Wood	Furniture, doors Windows	4 workers	Wood sawdust	Sold for poultry Farms	Private Sector	No industrial Drainage
23	Rashed factory for Braking crops	Crops	Broken crops	3 workers	None	------	Private Sector	No industrial Drainage
24	Gawhara rice factory	Rice crop	Pure rice	3 workers	Rice straw	Burned	Private Sector	No industrial Drainage
25	Factory for fodder grinding and packing in Mattay	Maize an other raw materials	Different Fodders	3 workers	Empty packs And solid Wastes	Sold	Private Sector	No industrial Drainage
26	Fiber glass factory for Hygiene products in Deir mowas	Fiber glass, Chemical subs. Artificial colors Adhesives	Hygiene products	3 workers	Stored empty packs and Hygiene Products Wastes	Are stored	Private sector	No industrial Drainage

27	fayed macaroni factory in Samallout	Flower, salt Water	Various forms Of macaroni	2 workers	Product's Remainings	Remade, and the Broken is sold As fodder	Private sector	Industrial Drain, cooling (closed circuit)
28	Mohandes factory for halawa tehinia in Samallout	Sesame, sugar, cane honey, additives.	Halawa tehenia And tehhina	3 workers	Sesame crust Water mixed With other Substances	The crust is sold As fodder, the Water is drained	Private sector	There is Industrial drain On teba drain.
29	24 factory for producing Cane honey in deir mowas	Sugar cane	Cane honey	216 workers, 7-9 workers/ Factory	Molasses and Cane Remainings	The remainings Are used as feul, The molasses is Dumped in the Drains	Private sector	No industrial Drainage
30	Factory for mixing Fodders in Mattay	Maize, raw Materials	Different Fodders	2 workers	Empty packs Solid wastes	Stored	Private sector	No industrial Drainage

Source / industrial security in Menya

Very small industries in Menya governorate they are many and various. The following table illustrates this activity within the governorate.

Table (92) Small and very small industries and crafts workshops within the governorate as well as its no. and the no. of workers involved.

S	*Markaz*	*Metal formation*		*Smithery*		*Wood processing*		*Tiles*		*Marble*		*Foundries*		*Bricks factories*		*Car repair work shops*		*Gas stations and side walk pumps*		*Petroleum substances warehouses*	
		No.	*No. of workers*	*No.*	*No. of workers*	*No.*	*No. of workers*	*No.*	*No. of workers*	*No.*	*No. of workers*	*No.*	*No. of workers*	*No.*	*No. of workers*	*No.*	*No. of workers*	*No.*	*No. of workers*	*No.*	*No. of workers*
1	Menya	67	97	86	111	143	180	51	94	4	9	-	-	-	-	107	148	10	25	6	120
2	New Menya	8	13	16	21	10	13	3	13	1	2	-	-	-	-	9	12	3	8	-	-
3	Odwa	30	42	56	106	26	38	11	35	-	-	-	-	-	-	-	-	12	38	4	10
4	Maghagha	39	59	61	79	101	187	11	38	2	2	-	-	-	-	76	143	15	44	12	35

5	Beni Mazar	24	31	134	147	171	221	15	33	-	-	-	-	1	68	68	74	14	51	2	7
6	Mattay	46	90	44	72	61	120	4	17	-	-	-	-	-	-	37	51	4	9	-	-
7	Smallout	36	42	158	188	116	130	24	41	3	8	2	7	-	-	127	150	6	17	7	20
8	Abo korkas	13	28	94	147	98	154	26	51	-	-	4	9	1	7	58	69	8	27	3	9
9	Mallawi	72	109	51	100	175	200	36	87	-	-	4	12	1	4	56	78	11	44	6	19
10	Deir Mowas	9	13	-	-	25	31	17	36	1	3	-	-	-	-	-	-	5	12	-	16
Total		344	526	700	971	926	1274	224	445	11	24	10	28	3	79	538	745	88	275	46	236

Source : Safety and professional health department in Menya.

6-3-5 Industrial pollution

Industrial pollution in the governorate is limited to certain spots involving the major industries including sugar factories, cement, Nile Company for cotton ginning and some grinders. As for the industrial emissions resulting from medium and small industries, it is not as dangerous as those of the big industries although its impact is some how tangible.

Air pollution:

Gaseous emissions, dust and smoke are restricted to sugar factories in Abo korkas, cement factory in Beni Khaled, Samallout, some flour grinders and the industries of molasses, where bagas and mazot are still used as fuel in the industrial operations. This is the main source of pollution.

As for grinders, dust percentage increases when using a high percentage of local heat due to the presence of impurities in the local wheat due to the presence of impurities in the local wheat. In case of using a small of local wheat, pollutants can then be controlled.

Notice:

Workshops scattering inside housing blocks and habitant communities are considered the main source of noise, most of which are workshops of smithery and car fixing as well as cutting and welding metals. As for big factories, it is only restricted on the workers there.

Water pollution

The sugar factory in Abo korkas is considered the biggest source of water pollution, as it dumps heavy weights of pollutants in Moheet drain which, in turn, drains in the Nile. The amount of drain coming from this

factory only is estimated to be 1.43 m/sec. during the operation season that lasts about 8 months/year. It is true that the administration of the factory has exerted efforts to cut down liquid or gaseous pollutants, however, such efforts are still not enough. Worth mentioning is that there is an approach to relocate the sugar factory to the desert areas after the crawling of the housing block to it.

Solid and hazardous wastes

Solid wastes produced from industrial plants, whether big or small, are being disposed by the plant itself, either through recycling, such as the sugar factory where some of its wastes join the production of fodders inside the factory. Other plants sell their wastes as junk, such as carpentry workshops, or dump it in regular dumps. However, some plants dispose their waters randomly the thing that negatively affects the surrounding environment.

As for the hazardous wastes produced from big plants such as the sugar factory or the cement factory of the oil factory, such plants are contracted with special companies that receive these wastes to recycle it or dump it safely. Such actions are recorded in the environmental records of these plants, and it is being followed through an inspection team either in the department or the EEAA (in Cairo or the ROB in Assuit).

6-3-6 Policies of cutting down industrial pollution

Action plan

The action plan includes inspection and follow up plans in association with EEAA and its ROB in Assuit, and the environmental affairs department in the governorate to inspect the existing projects in addition to forcing all the plants to readjust its status. In case of disobedience, legal procedures are taken along with directing these

projects to the different institutions to get loan or grants for establishing treatment stations for its wastes.

As for the under construction plants, they are not allowed the licenses or the operation unless they get the environmental approval and show commitment towards environmental conditions along with the continuous follow up after operation. Moreover, there is an approach towards transferring all the polluting industries outside the habitant area to industrial zones, especially in case of the high population cities.

A crafts zone (for craft industries) was allocated insider the industrial zone. Crafts industries, especially the polluting ones, are currently being transferred from inside the cities to this zone.

Responsible authorities:

- EEAA and its RBO "Inspection and follow up authority".
- Environmental Health and Safety Department "Inspection and follow up authority".
- Professional Health and Safety Department. "Inspection and follow up authority"
- Environmental departments inside the big plants such as sugar factory, cement factory and the Nile Company for cotton ginning and grinders.

6-3-7 Observation and monitoring program

- Measurements and observation.
- Periodical measurements for these plants take place while inspecting it.
- Forcing these plants to establish environmental records for the periodical measurements.

- Observing and measuring the pollutants of these plants whether it is gaseous emissions, suspended dust, smoke, noise or liquid wastes. Checking the safe disposal of solid and hazardous wastes if any.

- **Allowed limits :**

They are the limits mentioned in law 4 of the year 1994, and its regulation no. 338 of the year 1995, amended by the decree 1741 of the year 2005 articles (22, 33, 35, 37, 40, 43, 44, and 69) and the annexes no. 6.87 in the regulation of law.

As well as the criteria mentioned in law 48 of the year 1982 regarding protecting the Nile and its branches, articles 2, 65, 66 in case of draining in water surfaces and the law no. 93 of the year 1962 article 14 case of draining in sewage.

6-3-8 Environmental department in industrial zones

There is no environmental department in the industrial zone. Such department follows the governorate. The environment department at the general divan of the governorate follows up and finishes its procedures environmentally. The environmental department in the industrial zone can be summarized as follows:

- No lands are allocated until after getting an environmental approval and considering such approval one of the main documents required to allocate the land needed for the project.
- Project owners are forced to establish treating units for the emissions whether it is gaseous or liquid.
- Allocating specific locations for disposing solid wastes. However, some projects are not committed to such action.

- The zone was divided into cells according to the degree of pollution resulting from the industry taking into consideration wind direction. Polluting industries are located at the far south of the zone whereas food industries are located at the top north.
- It was taken into consideration establish a complete sewage net work in all the sectors of the zone as well as establishing a treatment station for these wastes.
- It was taken into consideration using treated drain water in planting a forest with an area of about 660 feddans in the zone to get use of the treated drain water as well as using it in planting the islands between the interior roads in the zone that reach about 14 km^2.

6-4 Tourism

6-4-1 Introduction

Menya governorate enjoys the basic factors that help putting her on the map of touristic investment, the thing that increases the importance of developing the touristic sector and the role the private sector can play in developing the basic structure and the utilities in the touristic and monumental sites in the governorate.

Menya governorate is characterized by the presence of important monumental sites covering the pharonic, greek, roman, Coptic and Islamic eras in addition to the Coptic and Islamic visitations that were previously illustrated in the chapter of civilization and cultural heritage.

6-4-2 Touristic activities

Entertainment tourism

Menya governorate enjoys the beautiful Nile that penetrates it from the south to the north. It is surrounded by beautiful green sites along its

banks in a large sector of the governorate, in addition to the eastern hill with its edge components that adjoin the river from the eastern side. The governorate, as well, enjoys a moderate dry climate most of the year, the thing that makes the Nile tourism one of the tourism's features to enjoy sites of water, green areas and the mountain at the same time.

Safari: tourism

This kind of tourism attracts those who love adventures. The west and the east sides of the governorate include vest desert areas with various topographic reliefs and different geographic features that allows the visitors to enjoy wonderful sites of wild plants and animals hunting (mountain rabbits – dears – some birds).

Recently such touristic pattern has gained increasing interest. As a result, it is required to establish several services centers near the desert that provide fast and easy services to the tourists.

Visiting temples and monuments

Among the important monumental sites in Menya are :

1- Tel El-amarna region (Akhet – Aton city) – in Deir Mowas, 67 km south east Menya city. It was built by Akanaton who called for the worship of one God. He also established the first realistic and school known internationally as the school of Amarna for realistic art. Moreover, it was Egypt Capital in the pharonic modern state era.

2- Beni Hasan El-Shorouk region, Abo korkas, 25 km south east Menya city. It is considered the only integrated region for the monuments of the middle pharonic state. It is characterized by being the cradle of the sports held 2000 B.C. such as wrestling, Judo, track and field … etc.

3- Tona El-Gabal, Malloy, 55 km south west Menya city. It is characterized by the intermingling of the ancient pharonic art with both greek and roman arts.

4- Sheikh Ebada region, Malloy, 5 km east of Malloy city. It holds pharonic, greek, roman, Coptic and Islamic monuments.

5- Tombs of the pharonic old state, 5 km north of Menya city. It holds Fraiser tombs.

6- Zaweyet Soltan region, Menya Markaz, 10 km south east Menya city. It holds monuments from the old, middle and modern pharonic states.

7- Tahna El-Gabal reion, 7 km north east Menya city. It holds greek and roman monuments.

8- There are four spots where the holly family passed by during their journey to the south of Egypt in escape from the roman tyranny. They are :

   a- Deir Garnous, Maghagha markaz.

   b- Bahnasa, Beni Mazar markaz, 55 km North West Menya city. This region holds as well important Islamic monuments, as there are graves of some companions and followers who died in Bahnasa battle during the Islamic conquest of Egypt.

   c- Ashmounein region, Malloy markaz, 50 km south west Menya a city. It holds important monuments from the pharonic, greek and roman ages.

   d- Gabal El –Tair conent region, Samallout markaz, 25 km north east Menya city. It holds a monumental church from the 4th century.

Conferences Tourism

Menya University holds several scientific conferences that are attended by Scientists from the various scientific and literature fields, whether these conferences are regional or international. In addition Menya governorate hosts some of these conferences at the general divan of the governorate. Such conferences tackles issues of local benefit based on study or scientific research.

Recovery Tourism

Represented in enjoying the sun and the climate of Menya through enjoying sun baths whether at Menya's hotels or floats resting along the Nile banks, or through a Nile cruise that penetrate the governorate on board touristic ships.

6-4-3 Touristic sites and its locations

They are previously illustrated in details in section 6-4-2 in this profile.

Table (93) categorizing the tourist sites

S	*Markaz*	*Location*	*Existing monuments*	*Type of tourism*
1	Odwa	Odwa	Religious site	Religious tourism
2	Maghagha	Sharouna	Pharonic monuments	Monumental tourism
3	Beni mazar	Bahnasa	Islamic site	Religious tourism
4	Samallout	Sararya	Pharonic monuments	Monumental tourism
		Gabal El- Deir	Pharonic monuments	Monumental tourism
		Gabal El- Deir convent	Religious site	Religious tourism
5	Menya	Tahna El-Gabal	Pharonic monuments	Monumental tourism
		Zawyet Soltan	Pharonic monuments	Monumental tourism
		Menya city	Religious and entertaining sites	Religious and entertaining tourism
6	Abo korkas	Beni Hasan	Pharonic monuments	Monumental tourism
7	Malloy	Ashmouniein	Pharonic monuments	Monumental tourism
		Tone El Gabal	Pharonic monuments	Monumental tourism
		Barsha convent	Pharonic monuments	Monumental tourism
		Abo hans convent	Religious site	Religious tourism
		Sheikh Ebada	Islamic and pharonic monuments	Religious and monumental tourism
8	Deir Mowas	Tel El Amarna	Pharonic monuments	Monumental tourism

Source / Tourism department and the inclusive layout if the governorate

6-4-4 The strategic plan to develop tourism.

1- Executing the civil airport or allowing civil planes to use the military airport in Menya until executing the civil one. A land is already been a signed for this purpose (10 km x 10 km) east of the Nile. Mr. Minister of aviation was addressed in that regard.

2- Considering dividing the governorate administratively in width such that it gains a front of the Red Sea from the east and a front on the Wahat from the west. Such thing will serve agriculture, industrial, touristic and commercial investment and contribute in increasing export and job offers.

3- Enforcing and duplicating Menya-Hurghada road, which is the only road that connects Menya governorate with the Red Sea governorate, to suit the Magnitude and mobility of cars and tour buses. Moreover, establishing the Nile bridge of Beni Mazar city towards this road and extending it until Boweity region in Wahat Baharya then to Siwa, Borg El Arab Aswan, then to Libia west. This project has been approved.

4- Considering establishing a road between Menya governorate and Wahat Baharyya with length 180 km (From Beni Mazar Markaz till Boweity city). This road will cut down the distance between the two cities by about 1000 km. The project was included within the plan of the central Institution of construction in Population Ministry (a 5 years plan 2002/2007) with an estimated cost of 90 million pounds. The project is to be executed once the required financial is provided. As a result, both ministries of planning and finance were addressed to supply the required money to start the project. It is worth mentioning that this project will provide job

offers and increase the touristic movement of the governorate in addition to opening new constructional horizons.

5- Encouraging river transportation and river tourism through cleaning the navigational course, securing and re operating it.

6- Connecting the eastern desert hinterland of the governorate with the western one to increase the rates of development and investment in all fields especially the agricultural, inhabitant, touristic and monumental ones through the bridges the cross the Nile east and west (Menya bridge, Beni Mazar bridge, Malloy bridge). Worth-mentioning that these projects have been approved and are being under constructions.

7- Paving and maintaining the coast road east of the Nile to connect the monumental locations in Tal El-Amarna, El-Barsha convent, Sheikh Sa'ed, Beni Hasan El-Shorouk, Tahna El-Gabal, The Virgin convent, and El Kom El Ahmur in Maghagha and connecting it through bridges, river transportation and river tourism with the monumental locations west of the Nile such as Tona El-Gabal and Bahnasa.

8- Shedding light upon the monumental locations in the governorate as well as concentrating on the services centers suitable for each location.

9- Completing the ring roads and the alternative roads for the regional traffic from and to the governorate, especially at the entrances of the main cities, following the urban planning and the habitant coordination as well as the recommendations of the approved public layouts of the governorates cities.

10- Emphasizing the service and crafts zones of every city and the national and regional paths of the connection axis between the east and the west desert roads.

11- Emphasizing the governorate's role in executing the projects, especially the suggested villages of the desert projects, especially the suggested villages of the desert hinterland, industrial zones, new cities (Beni Mazar –Samallout – Malloy), regions of agricultural reclamation, entertaining centers and services centers and others in order to push the wheel development as well as attracting investors.

12- Emphasizing on the role of the private sector in developing habitant, touristic, agricultural and industrial projects and setting facilities to achieve such thing.

6-4-5 Environmental Administration of the tourism sector

The Environmental administration in that regard is specialized in following up the solution of the environmental problems related to protecting the Nile, tourist and monumental sites as well as carrying out inspections drives in association with the environment and water surface police forces to hold violations.

6-4-6 Main Environmental problems

It is represented in the following:

1- Using the land in a way that negatively affects the monumental locations.

2- The rising of the ground water which affects on the stony material of the monument.

3- Air pollution in a percentage that is more than the allowed one, which results in acidic rains that has a severe effect in the erosion of the monument or the monumental buildings.

4- The Nile's pollution because of what is thrown in it from sewage or industrial wastes or whatever.

5- Accumulation of garbage and solid wastes in the entrances and exits of the touristic locations with what results in visual pollution and emission of bad smell and reproduction of insects affecting the surrounding environment in a very negative way.

6- Sewerage: There are no sewerage networks in the areas near the touristic areas, which leads to the increase in the level of ground water, as a result, water leaks to the monuments.

7- Climate changes: climate changes of high temperature or humidity increases the deterioration of the monuments.

8- The presence of some cultivations around some touristic floats the thing that blocks the movement there.

6-4-7 Policies of protecting touristic environment

- Preventing or cutting down pollutants as much as possible especially those disposed from the factories and sewage stations which are considered the largest pollutants going into the Nile. Such action is taken in association with the specialized authorities.
- Working on solving the garbage piles problem at the entrances and exits of the cities, villages and touristic sites in association with the specialized authorities.
- Following up the problem of sewerage in accordance with the specialized authorities.

- Preventing the establishment of any projects near the touristic or monumental areas except after the approval of the EEAA and executing all the environmental stipulations.
- Working on preparing the touristic and monumental locations through improving the efficiency of the utilities, paving the roads and providing essential services to the visitors.
- Working on improving the services of transportation between the monumental sites.
- Cleaning the navigational course of the Nile, within a huge national project to clean, secure and determine the navigational course from Cairo to Aswan.
- Elevating the level of administrative procedures along all the monumental sites to avoid other sites' mistakes.
- Confronting any new violations and stopping and eliminating in from the very beginning.
- Analyzing the reasons behind such violations, as well as points of weakness and shortage in following up and monitoring.

Responsible authorities

1- Police forces of tourism, monuments, environment and water surfaces.

2- Localities : represented in tourism department and its divisions in all the marakez of the governorate. They organize tourism and hotel occupations with all the involved authorities.

3- Monuments region in Menya represented in the monuments' inspector in the region.

4- Survey department in the region: in association with the monuments inspector, they check the possessions of the High Council of monuments. 142 demolition decree were executed whether being cultivations, building or a disfigure in the monumental sites in the governorate.

5- Environmental Affairs Department in association with all the involved authorities, it works on protecting monuments and touristic sites from pollution through taking the necessary legal actions. Constructing any project what so ever in the monumental or touristic sites is not allowed until carrying out the Environmental Impact Evaluation Study and making sure that no environmental harms, whether direct or indirect, will take place in the surrounding area.

6-4-8 National policies to support touristic activities

The national policy to develop tourism in the region includes establishing national projects in this region or the promising touristic centers that have distinguished attraction elements but are not being used, or being used in a limited scope that doesn't reflect its actual constituents. This is because it lakes the basic structure necessary for tourism, especially the capacity of rooming. The aimed rooming capacity of these centers ranges from 1000 to 2000 room according to the relative importance of the touristic demand and the developmental capabilities of each of them.

The strategy is also based on religious and historic tourism in Nile valley starting from Menya until Abo Sembel. Attention is drawn upon foreign tourism a side with Arab tourism and internal tourism (Entertainment tourism – shore tourism).

Among the huge national touristic projects that can be done through the private sector are:

- The project of Tona El Gabal caravans following the regional authority of tourism activation in the governorate.
- Sound and light project in one of the touristic spots (Tona El-Gabal, Beni Hasan, Tal El Amarna) for what is contain of important and various monuments represernt all the stoges of the Egyptian history (pharaonic, greek, roman, Coptic, Islamic and modern).
- The project of cable car in each of Beni Hasan, Virgin Mary convent and Tal El Amarna as such locations are high and have beautiful natural sites combining the Nile, the green areas and the mountain in one region loved and wanted by the tourists. Moreover, such project will facilitate visiting the high monumental tombs.
- Establishing touristic and hotel projects (hotels – bazaars – 5 star bakery and confectioner – a group of large supermarkets).
- Modern projects of river and land transportation in the touristic locations for each of Beni Hasan, Tal El Amarna, Tona El Gabal and Virgin Mary convent.

There are also projects that need the contribution of the country, such as:

- Improving Virgin Mary convent at Gabal El Teir east of the Nile.
- Establishing a civil airport in the governorate.
- Fortifying and duplicating the road of Menya – Ra's Ghareb as it is the only road that connects the governorate to Sheikh Fadl region in the Red Sea governorate.
- Establishing a road that connects the governorate with Wahat Bahareyya.
- Establishing a large touristic anchorage that has a marina which facilitates supplying the ships with its needs from fuel, food and

maintenance. Such anchorage has to be supplied with electricity, water, sewerage, information offices, touristic services, W.C.S and a touristic bazar.

- Using the Nile islands to establish interior touristic projects suitable with the nature of these islands.
- Connecting the touristic and monumental sites with a special draining network that facilitate touristic activation in addition to the touristic boats specialized for that purpose.
- Preparing an accurate map of the monumental sites in the governorate, along with inclusive guide of these sites.

6-4-9 Tourists number

Table (94) illustrates the development of the tourists' number through the past five years.

Table (94) Development of hotel capacity and tourist nights during the last five years.

Year	*Total no. of tourist nights*	*Total no. of tourists and Egyptian*	*Total no. or rooms*	*Total no. of beds*
2000	81603	45986	409	818
2001	81760	47296	434	894
2002	7143/foreigners	3768/foreigners	471	964
	91988/Egyptians	55904/Egyptians		
2003	9405/foreigners	7417/foreigners	545	1112
	82973	55050/Egyptians		
2004	16727/foreigners and Arabs	10004/foreigners and Arabs	735	1597
Total	141947	82208	2594	5385

Source : Tourism department in Menya.

Table (94) illustrates the increase in the number of touristic nights from 81603 nights in 2000 to 141947 night in 2004. The number of touristic night for the foreigners increased from 7143 nigh in 2002 to reach 16727 nights of both foreigners and Arabs in 2004.

- The number of touristic nights for the Egyptians increased from 91988 nights in 2002 to 125220 night in 2004.
- Number of foreigners was 3768 person in 2003, while the number of foreigners and Arabs reached 10004 person in 2004.

Table (95) illustrates tourism traffic for 2005.

Table (95) Tourism traffic.

Months	*South west Europe*	*North and middle Europe*	*South east Asia*	*U.S.A.*	*Arabs*	*Different nationa-lities*	*Total*		*Tourist nights*		*Average occupation*
							No.	*%*	*No.*	*%*	
January	116	314	64	66	27	72	659	7.6%	1280	7%	7.6%
February	200	414	540	113	12	90	883	10.2%	1569	8.6%	11%
March	330	531	77	69	71	146	1224	14.1%	3116	17.1%	15.1%
April	234	389	6	33	70	32	864	8.8%	1984	10.9%	9.6%
May	34	856	30	42	22	13	997	11.5%	1523	8.4%	8.9%
June	18	258	13	23	76	64	452	5.2%	1009	5.5%	6.2%
July	56	498	36	73	60	34	757	8.7%	1311	7.2%	6.9%
August	88	248	20	35	28	6	425	4.9%	1081	6%	4.9%
September	95	181	34	37	31	57	435	5.1%	803	4.4%	5%
October	151	269	9	51	12	93	585	67.8%	1218	6.7%	7.2%
November	253	406	85	76	28	137	985	11.4%	2045	11.2%	11.9%
December	165	173	15	26	37	77	493	5.7%	1279	7%	5.9%
Total	1740	4537	443	644	474	821	8659	100%	18218		-
Percentage	20.1%	52.4%	5.1%	4.7%	5.5%	9.5%	100%	-	-		
Nights	3713	5288	2510	1398	1568	3741	-				
Percentage	20.3%	29.1%	13.8%	7.7%	8.6%	20.5%					

Source : Tourism department in Menya.

From table (95), it is shown that foreigners from north and middle Europe visit the governorate more than others from other nationalities, least of which are the Americans and some other nationalities. The percentage of tourists coming from north and middle Europe was 52.4% from the total number of tourists that reached 8659 person from different nationalities. The percentage of their touristic nights, as well, in the governorate reached 29.1% from the total touristic nights in the governorate, which reflects the interest of these nationalities on tourism in the governorate.

Analyzing tourism traffic during 2005 we deduce the following:

1- Number of tourists was 8659 person.

2- Number of touristic night was 18218 night.

3- The average occupation was 8.3%.

4- March was the highest among the other months regarding the number of tourists (1224) as well as the number of touristic nights (3116).

5- Countries of north and middle Europe recorded the highest percentage among nationalities (52.4%) represented in Germany, Netherlands, Austria, Poland, Scandinavian countries, followed by countries of west and south Europe (France, Spain, Italy, England) with a percentage of 20.1% of the total nationalities.

6- Countries of north and middle Europe recorded the highest percentage of touristic nights (29.1%) followed by the countries of west and south Europe (20.3) from the total number of touristic nights.

7- Mercure hotel recorded the largest number of tourists (3102) followed by Aton Hotel (1845).

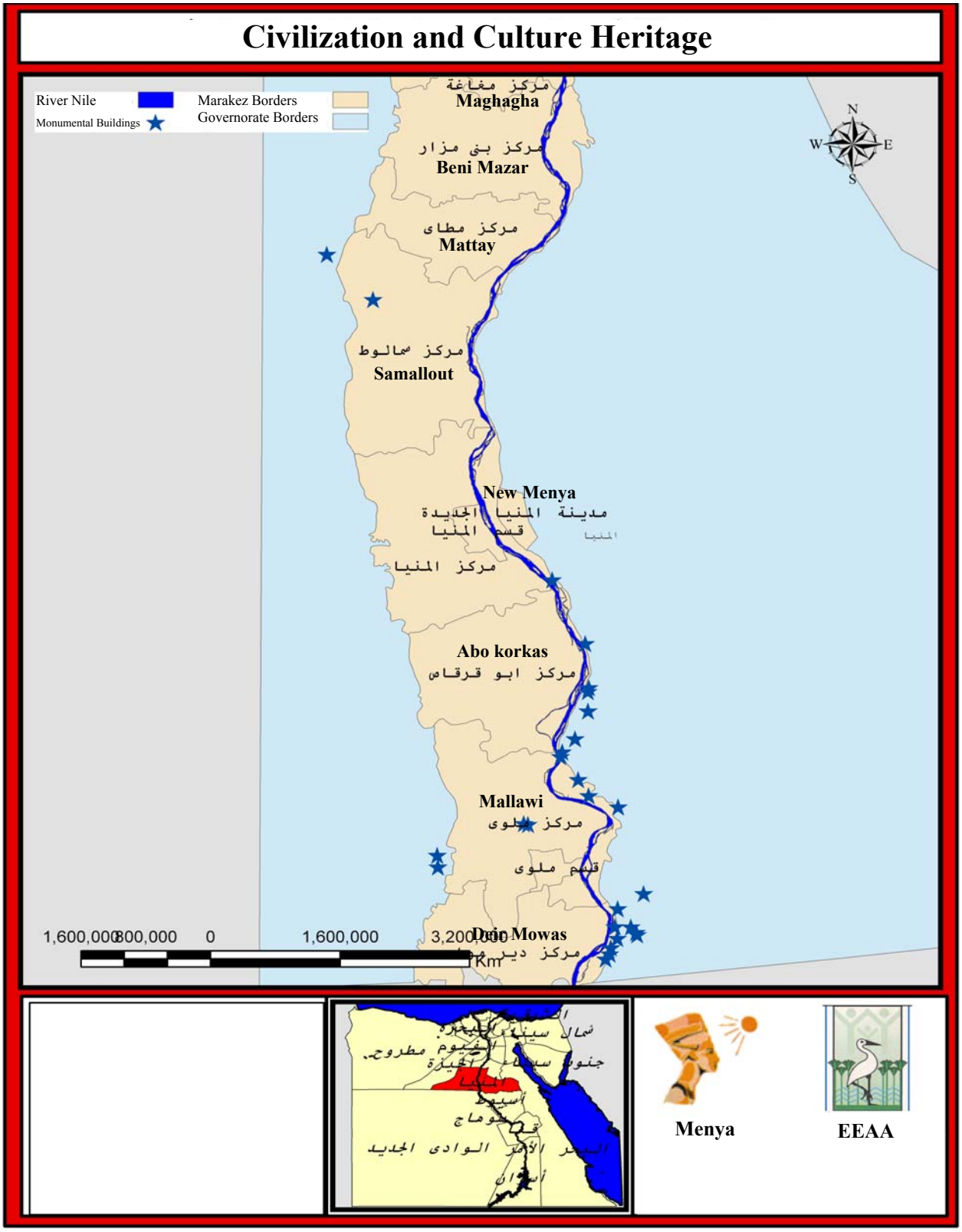
8- Mercure hotel has also recorded the largest number of touristic nights (5288 night) followed by Aton hotel (3713 night).

Table (96) Hotel capacity, no. of guests and touristic nights in 2005.

Hotel	*Location*	*Stars*	*Hotel capacity*			*No. of guests*			*No. of tourist nights*		
			No. or rooms	*No. of beds*	*Occup-ation %*	*Foreigners*	*Arabs*	*Egyptians*	*Foreigners*	*Arabs*	*Egyptians*
Mercure Nefertiti	Menya, Korneish St.	****	54	108	75%	2573	0	5740	4372	0	10279
Aton	Menya, Korneish St.	***	42	76	76%	1810	212	4264	3623	484	7515
Cleopatra	Menya Taha Hussein St.	***	67	134	68%	1039	113	14862	1356	364	14862
Lotus	Menya Port said st.	**	45	90	64%	909	109	5826	1298	244	8948
The beach	Menya, Gomhoria st.	**	32	64	29%	81	82	2364	81	88	3191
Ebn Khaseeb	Menya, Ragheb st.	*	20	40	18%	51	7	1068	69	10	1170
Armed forces	Menya, east of Nile	Unlisted	74	148	49%	24	0	6500	24	0	13000
Akanaton	Menya, korneish st.	Public	47	100	79%	364	52	8998	818	299	12368

Hotel	*Location*	*Stars*	*Hotel capacity*			*No. of guests*			*No. of tourist nights*		
			No. or rooms	*No. of beds*	*Occup-ation %*	*Foreigners*	*Arabs*	*Egyptians*	*Foreigners*	*Arabs*	*Egyptians*
Omar Khayyam	Menya, Demranst.	Public	20	44	82%	0	0	2311	0	0	5950
The Nile	Menya, Taha Hussein st.	Public	15	31	46%	1	1	884	9	1	2464
Savoy	Mahatta square	Public	37	81	12%	0	0	6440	0	0	16360
Palace	Palace square	Public	28	56	51%	1	0	5152	1	0	5152
Zahraà	Menya, Port said st.	Public	20	40	62%	0	0	1954	0	0	4514
Amon	Menya, Gomhoria st.	Public	7	15	37%	0	0	781	0	0	931
Majestic	Menya, Gomhoria st.	Public	20	48	88%	27	11	4020	44	23	6400
Saled community	Abo korkas	Public	38	130	86%	95	0	4766	111	0	11730
Menya university	University		169	392	38%	500	0	17000	705	0	23000
Rests	--	--	--	--	--	454	--	--	3741	--	--
Total			**735**	**1597**	**60%**	**7929**	**587**	**92930**	**16252**	**1513**	**147834**
						101446			**165599**		

Source : Tourism department in Menya.


Civilization and Culture Heritage
River Nile
Monumental Buildings
Marakez Borders
Governorate Borders
مركز مغاغة
Maghagha
مركز بنى مزار
Beni Mazar
مركز مطاى
Mattay
مركز سمالوط
Samallout
New Menya
مدينة المنيا الجديدة
قسم المنيا
مركز المنيا
Abo korkas
مركز ابو قرقاص
Mallawi
مركز ملوى
قسم ملوى
Deir Mowas
مركز دير مو
1,600,000 800,000 0 1,600,000 3,200,000
Km
N
W
E
S
Menya
EEAA

Map (10)

7- Environment quality and the environmental deterioration

7-1 Introduction

The strategically target of the environmental policy in Egypt aims at introducing and clarifying the environmental dimensions related to protecting man and running the natural resources in all the policies, plans, program and national projects. Within the average term, this target is represented in preserving the natural resources as well as the biological variance and the national heritage within the sustainable development. Along the short term, the target is decreasing the levels of current pollution and health dangers to the least levels possible to improve the quality of life in Egypt.

Features of increasing imbalance in the ecological organization in a number of geographical spots, indicates the Egypt currently face environmental pressures that could hinder the efforts of social and economic development. Moreover, these pressures may demolish the quality of life of the citizens and weaken their ability to contribute effectively in accomplishing development national wide. Estimations of the International Bank on 2002 indicates the cost of deterioration in the natural resources only reached 5.5 billion pound, such high cost. Evidence also indicates duplication in the environmental hazards to which citizens are exposed in their daily lives with rates in which no therapeutic procedures could be of much help.

Although there is a national net work for environmental observation in Egypt, and it does give a good picture about the national status quo, yet Menya governorate is almost empty of observation stations following the EEAA except for a small manual station for taking (air) samples at distant intervals. As for the stations following the

ministry of health, they are irregular and provide only humble data about the state of air in the governorate. Observing the quality of water is also restricted to what the management of health and population (environment health)do, as well as the water company in Menya, of observing the quality of potable water and sewage governorate wide. The information available about the soil is restricted on the data of the agriculture productivity.

7-2 Water Quality

Surface water

Surface water resources in Menya are represented in the Nile, canals and drains. River Nile, Ibrahemya canal, and Bahr Youssef are the most important sources of potable water for the cities and villages of the governorate.

Ministry of public works and water resources evaluate the quality of surface and ground water, through programs of national observation and monitoring, in 320 location of surface water along the canals networks the Nile and Nasr Lake, in addition to 250 locations on the tanks networks.

It observes the general indicators of water quality from chemical, biological and natural elements (salts, bacteriological and organic components, oxygen percentage and heavy elements …… etc.)

Nile water quality is also being observed periodically by the ministry of Health in ten governorates, including Menya. Observation results indicates a slight increase over the usual limits, in some locations, regarding the organic substances represented in the BOD, COD and the suspended substances especially at the meeting points between the river and the drains.

Health management in Menya (environment health and water lab.) takes samples from the raw water periodically.

Results show the same results in addition to an increase in the ammonia percentage and nitrates concentration at some spots as a result of factory wastes draining, sewerage and tanks wastes on the drains networks then the Nile.

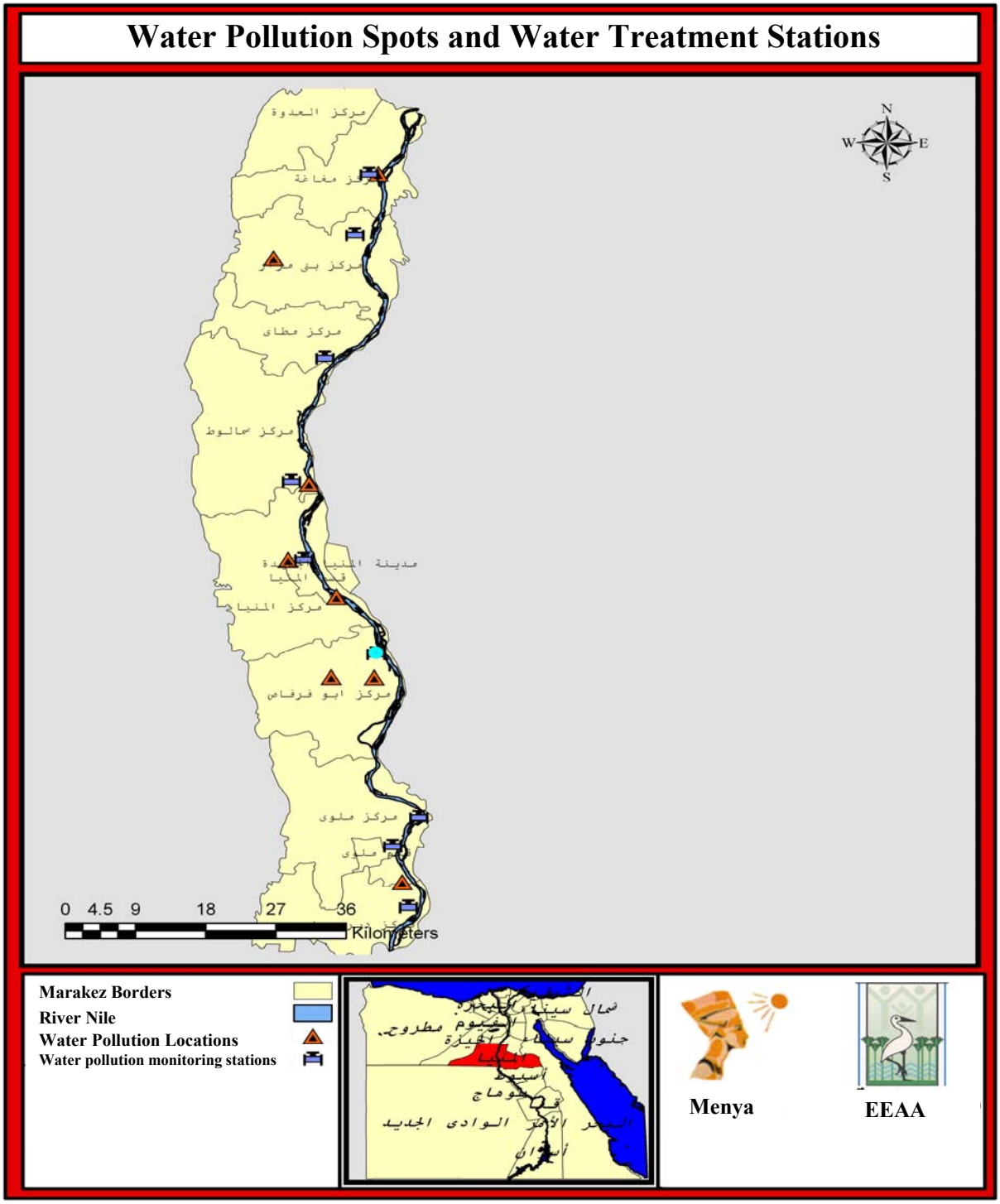
Results of observation have already been illustrated in the potable water sector.

Ground water

As previously illustrated in potable water sector, most villages of the governorate, as well as some cities, depend totally on ground water for potable. The water reaches the consumers directly from the well, through the water networks, untreated except of a very small percentage. Water treatment units are expensive, as a result health and population management take samples periodically from the output of the ground water stations from all wells around the governorate. The central lab of the company of potable water does the same thing. Samples results were previously illustrated in the potable water sector. Observing the quality of water indicates an increase in the percentage of nitrates in some, and the percentage of ammonia in others, as well as colonic bacteria the thing that negatively affects public health.

- In general, there is a deterioration in both of the surface and the ground water during the last intervals, because the following :
  1- Throwing dirt and wastes directly in water.
  2- Pollutants leakage (chemical, viral and bacterial) to the sewerage network along with human wastes and then to water paths.
  3- Disposing untreated industrial drain and hospital drain in water resources whether directly or indirectly.
  4- Disposing untreated agricultural drain in water paths. It also leaks to the ground water.

Map (11) illustrates water pollution spots in Menya governorate.



Map (11)

7-3 Soil quality

Soil categorization

Soil is usually divided according to its productive capability. Menya's soil is divided into six degrees, 70% of which lie in the second and third degree rank.

In general, Menya is characterized by three types of soils that cover the governorate. These types are:

1- Brown alluvial soil that covers the plain area of the Nile valley.

2- Yellow sand alluvial soil and stone grains that covers the old river terraces found west of the Nile and some regions east of the Nile.

3- Stony soil which are the exposures of the multi-type lime stone. It covers vast areas of the governorate.

Soil productivity

As previously illustrated, most fo the lands lie thin the second and third degree, characterized by the following :

- Second degree lands: It is characterized by an above average productivity. Such type of lands has minor problems related with salinity and degree of alkaline. Such problems appear on individual bases most of the time.
- Third degree lands. It is characterized by a average productivity, with low drain, where the level of water reaches a level of less than 150cm. The salinity and alkalinity of these lands are very common problems. The soil is sandy and calcified by nature. The rest of the lands in the governorate come under the rest of the degrees as illustrated in table (97).

Table (97) Land classification in the governorate.

First	Second	Third	Fourth	Fifth	Sixth	Total
543014	52672	38012	28237	93941	279109	51043

Source : Agricultural management in Menya.

As for the rest of the lands degrees, it is characterized by the following:

- First degree soil: such kind of soil is characterized by high productivity rate. It also contains loam and sand loam with an "average to fast" rate of permeability. This type of soil is usually found either near the Nile or the Nile islands.
- Fourth degree soil: light productivity, and found near the mountains.
- Fifth degree soil: This kind is represented in the desert unproductive lands.
- Sixth degree soil: This kind points out the lands which are prepared for housing, roads and other utilities.

There are efforts exerted from the ministry of agriculture as well as research institutions to increase the productivity of these lands and improve its quality either by introducing the covered draining, or by expanding and completing opened canals and drains, or by flattening the soil using laser beams and adding improvers to treat and fight soil salinity, or by following the integrated resistance style, or using up to date methods to fight lesions and weeds in order to cut down the over use of pesticides that polluted the soil and the water canals. EEAA is also exerting efforts to cut down Nile polluting sources, increase the rate of lands reclamation, establishing wind shields around desert lands as well as protecting the roads and basic utilities passing through. It also works

on increasing courses for newly graduates, investors and agricultures on modern scientific bases to fix and operate the resources in the reclaimed desert areas, or though the EEAA efforts in integrated operation of solid wastes and establishing a garbage recycling factory for producing organic (which was previously mentioned in details in the agriculture sector).

7-4 Air Quality

Egypt has witnessed several changes, during the last few decades which lead to a deterioration in the air quality in various regions, urban and rural. The number of population doubled since 1960 till now. As a result, huge increase in consuming natural resources and producing wastes in various types that is being disposed of through open burning most of the time. Moreover, demand on building housing units has increase to answer the population requirements, as a result, expansion in constructional and building materials industries such as cement and bricks factories and other industries and crafts. Vehicles have also increased. Expansion in the industrial sector and the random spread of the industrial activities inside housing blocks has lead to the emission of pollutants and chemical compounds and its spread in the surrounding air negatively affecting human health and all the ecological systems. About 5% of the world diseases is attributed to air pollution inside the house and outside it.

Source of air pollution in Menya:

1- Factories.

2- Car exhaustions.

3- Solid wastes burning in open dumps.

4- Streets dust and locations of building and construction.

5- Bricks furnaces.

6- Crushers and saws of lime stone.

7- Limekiln and potteries.

8- Service activities (restaurants – bakeries and others).

9- Storms and wind.

10- Smitheries and cars painting workshops.

Allowed limits and norms of air pollutants:

Law no. 4 of the year 1994 has determined the norms required inside and outside the plant, as well as the emissions of these plants (go to the regulation of law no. 4 of the year 1994; annex 5, 6, and 8). It has also determined the norms of pollutant resulting from cars exhaustion, and has committed the car owners to such norms during car inspection and license. Traffic department takes over executing these norms.

Programs of observation and monitoring:

Although the EEAA has stations in most of the governorates, Menya is empty of such stations, except one station for measuring some gases such as No_2 – So_2 and at distant intervals of time (biannually). It is located in Menya city. However there are stations that follow health and population management (Center of environmental observation). There are five fixed stations at five spots, each of which has a high capacity device (HV) to measure the total suspended dust in the air (Menya city – Malloy – Abo korkas – Beni Mazar – Maghagha). There is also one device in Menya for measuring the inhaled dust (less than 10 micron).

In addition, there are five semi-automatic devices to measure smoke, sulphur dioxide in the air, distributed in the up mentioned locations. Samples are collected, and data analyzed and sent to the

Environmental Observation Center in Imbaba, Cairo, a it analyzes the quality of dust collected from the other governorates. Results are then set to the responsible officials to take the suitable decision. Table (98) illustrates air pollutants percentage in the observation areas in Menya.

Table (98)

As illustrated from table 98, measurements are irregular, devices break down for months in some markez (Maghagha – Beni Mazar) in other parts it breaks down permanently as in Abo korkas. It is also shown the increase in the percentage of suspended dust in general in the air above the allowed limits, reaching its max. in Beni Mazar according to the nature of the region with the surrounding mountains and elevated desert areas, in addition to the traffic James on the high way (Cairo – Aswan) in front of the cities of the marakez. Illustrated, as well, is the percentage of inhaled dust (less than 10 microns) in the air of Menya city. This is one of the most dangerous air pollutants. Menya city is the only city in the governorate that has this device. The reason behind the presence of inhaled dust in probably related to the traffic Jam, works of construction and demolition and the concentration of workshops in the city in addition to the relative low location of the city relative to the high hills surrounding it from the cast side. Map (12) illustrates the centers of air pollution in Menya governorate.

Environmental effects of air pollutants

No doubt that air pollutants have its harmful effects on the environment, such as sulphur and nitrogenous gases which are the main cause of acidic rains and affecting the Ozone layer. Rain is considered acidic if the hydrogen ion concentration is more than the oxygen ion concentration in water. Scientists use what is known by the (PH) number

to express the acidity or alkalinity of solutions. Balanced water has a PH = 7, if this number increased, it becomes alkaline, if it decreased, it becomes acidic. It is now undoubtly clear that the main reason behind acidic rain is power stations and large industrial centers spread in many countries, burning large amounts of fuel and push it right into air in large amounts of acidic gases such as (sulphur dioxide – hydrogen sulfide – nitrogen oxides). Wind carry these gases from one place to another, as a result, its effect expands to distant areas than the source it came from. Sulphur dioxide reacts with oxygen in the air in the presence of ultra violet rays. It turns into sulphur trioxide which combines with water vapor in the atmosphere producing sulphuric acid that keeps suspended in the air in the form of fire spray carried by the wind from one place to another. When the acid rain falls, it negatively affects the soil as it reacts with some of the alkaline components of the soil and equalize it. It also helps breaking down lots of rocks and melt lime soil, especially calcium element found in the soil, carrying it to the river waters causing several damages, such as:

- Soil erosion.
- A vast increase in calcium concentration in rain water damage of plants' roots.
- The effect of the acidic rain on open water paths and lakes, therefore the living organisms in these environments. It's effect also on potable water, agricultural crops, forests, building, monuments and others.

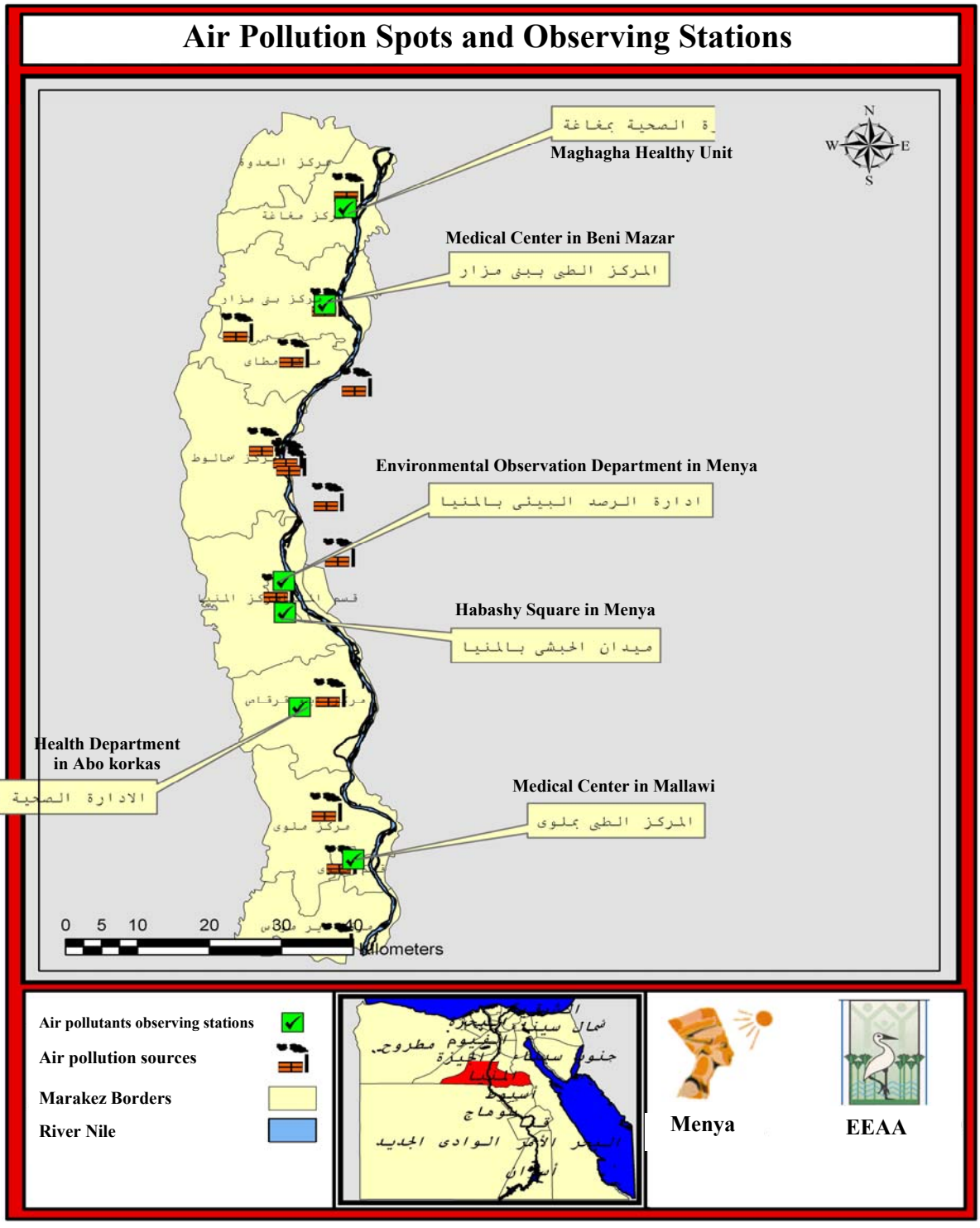
Health effects

Air contamination with dust, lead and gases (carbon dioxide – carbon monoxide – sulphur dioxide – sulphur trioxide – nitrogen oxides) are common reasons behind severe and chronic diseases of the respiratory

system, eye diseases that could turn to even more dangerous diseases if the exposure to such contamination continuous for a long time or in case of weakness in the immunity system of the patient. Poor people and others who have limited capabilities in getting services from health plants are the most subject to such acute and chronic respiratory system diseases, as well as chronic lung diseases are considered a health problem that especially affects women and children.

Some of the reasons behind this for example are:

- Poor ventilation in cooking places and children's sleeping in cooking places.
- Using animal and agricultural wastes fuel in domestic ovens.
- Combustion exhaust and emissions from some plants have its various dangers on public health, especially those working there. Among the most dangerous pollutants are :
- Tiny particles that are less than 10 micron: that could pass through air sacs in the lungs, probably absorbed in the blood path. These particles may contain poisonous and carcinogenic substances leading to dangerous lung diseases.
- Carbon monoxide: one of the dangerous substances, as it gets to the blood circulation taking the place of oxygen carried by hemoglobin. Such thing leads to poisoning and may lead to death.
- Lead: It has a destructive effect on children. Exposure to lead during in fancy might destroy brain cells which can not be restored or cured.


Air Pollution Spots and Observing Stations
Maghagha Healthy Unit
Medical Center in Beni Mazar
المركز الطبى ببنى مزار
Environmental Observation Department in Menya
ادارة الرصد البيئى بالمنيا
Habashy Square in Menya
ميدان الحبشى بالمنيا
Health Department
in Abo korkas
الادارة الصحية بابو
Medical Center in Mallawi
المركز الطبى بملوى
N
W
E
S
0 5 10 20 30 40
Kilometers
Air pollutants observing stations
Air pollution sources
Marakez Borders
River Nile
Menya
EEAA

Map (12)

Action plans to control emissions

- Meanwhile, low no. 4 of the year 1994; regarding banning the use of Mazot as a fuel inside housing blocks, is being activated. It is used outside the housing blocks and under determined conditions.
- Periodical and sudden inspection on some industrial and service plants takes place to check the consistency of its emissions with the legal standards. Legal procedures are taken in case of violation.
- A memo has been sent of the minister of petrol to supply the governorate with natural gas to allow major projects such as cement, sugar and the industries established in the industrial zone to replace the currently used fuel, which is mazot, by natural gas.
- Under execution now is applying the standards of cars emissions before license and organizing drives by the traffic department to seize the violating cars.
- No polluting projects are given license inside the housing blocks. They are not give license outside the housing blocks either, until it is made sure through the Environmental Impact Assessment study that it is consistent with the legal standards.

7-5 Audio pollution (noise)

Sources of audio pollution

It is funny that noise was one of the torture methods in the third century. History mentions a Chinese police force leader who used continuous high noise produced from large bells to execute his opponents. Nowadays, it became an ongoing element of environmental pollution. It is not found every where, but concentrated in industrial zones, population blocks where building are crowded. Sources of noise are various in big cities, and have many reasons some which are:

1- Cars and other means of transportation day and night.
2- Sound of drilling machines and other machines used in construction works.

3- Noise resulting from the various small industries, such as carpentry workshops, car repair workshops and others.

4- The mixture of high voices coming from radios, TVs and sound systems all day long in shops, cafes and house. Moreover, the misuse of sound amplifiers during the day, or late at night.

Allowed legal limits:

Represented in the limits and legal standards mentioned in law no. 4 of the year 1994 and its regulation no. 338 of the year 1995, amended by the decree no. 1741 of the year 2005 (tables 1, 2, 3, 4 in annex (7) in the regulation).

- Policies for controlling audio pollution.
- Highlighting the dangers of noise on public health, therefore, national income.
- Activating law enforcement and taking immediate actions to seize the devices.

Observation and monitoring programs

- There are no determined programs for observing and monitoring noise except environmental inspection visits either by the environmental affairs in the governorate, or inspection patrols by water surface and environment police force and the patrols done by the inspectors of industrial security or the professional health and safety inspectors.

Health impacts of the noise:

- Noise causes mental stress causing inability to concentrate, comprehend and learn. It affects the degree of mental performance.
- Exposure to noise for one second decreases concentration for least three seconds.
- Noise causes anxiety and restlessness to the person during his sleep which affects productivity. Noise causes hypertension and affects small blood vessels in the heart causing headache.

- Noise resulting from explosions cause complete deafness, as in case of stone quarries workers.

Policies to control noise pollution

In addition to the inspection visits done by the parties authorized to enforce law no. 4 of the year 1994 and laws of industrial security and professional and health safety. No license is given to any plant until after carrying out the EIA study and getting the environmental approval that the projects are consistent with the environmental standards, among which is noise, along with periodical and sudden follow up to these plants.

Table (99) sources of environmental deterioration for soil, water and air

S	***Element***	***Deterioration source***
1	The soil	Habitant expansion and tress passing by building Shoveling the soil Salination due to the use of waste water in irrigation, and due to bad Draining Alkalinity increase Sand hills crawling
2	The water	Waste waster Agriculture waste water with what it contains from fertilizers and Pesticides remains Industrial waste water Hazardous wastes being dumped in water paths
3	The air	Car exhaust Open burning of solid wastes Industrial emissions Road dust Stone quarries Using traditional fuel inside the houses (agricultural wastes – animal Manure – coal – wood and others

Source / Environmental Deterioration Study of Qena city

7-6 Environmental diseases:

Environmental diseases vary according to the reason, whether it is water pollution, or air pollution or soil pollution. For example, environmental diseases include the following:

- Viral diseases such as hepatitis.
- Germ diseases such as typhoid and cholera.
- Parasitic diseases such as belharzia.
- Teeth decay because the lack of fluoride or its excessiveness in the potable water.
- Chemical poisoning and carcinogenic diseases due to the presence of some chemical substances, especially heavy metals, in high concentrations.
- Children's diarrhea.
- Acute and.
- Respiratory system.
- Heart and arteries diseases.
- Lung cancer.
- Lung petrification.
- Chronic lung block.

Environmental Reasons

Through the past few decades, Egypt witnessed economic and social changes, unorganized consumption of natural resources, wastes production of various types with unsafe disposal, industrial expansion in various fields. Such things had their negative impact on the environmental status in Egypt.

One of the important issues that are still absent in Egypt is the integration of the environmental policies in the economic policies under the umbrella of a national policy of sustainable development, that takes into consideration environmental aspects when launching the planning process. Since law and decrees can't protect the environment by itself, it is vital to set a creative package of policies, economic tools and procedures based on the market, and lead to encourage changes in the consumption and social behavior, therefore, supporting the sustainable development (Human Development Report 2005).

As a result, the main environmental reasons behind disease spreading are the following:

- Environmental imbalance whether because of the climate change or the use of insecticides to eliminate save harmful insects which also lead to the elimination of the useful insects and affected the fertility of the soil. Or because the population increase that lead to the existence of random blocks and the shortage of basic utilities to meet with the hum flow to the habitant communities, the thing that lead to an increase of the ground water level.
- Increase in the human consumption of environment givens especially after the industrial and cultural revolutions.
- The random consumption of environmental resources the thing that Jeopardizes these treasures. Moreover, the use of technology has lead to the presence of new environmental pollutants.
- Water pollution: due to throwing wastes directly in water, or draining human, industrial and agricultural wastes in water paths.
- Air pollution: reasons of air pollution are represented in cars and trains exhaustion, smoke resulted from garbage and wastes burning whether

in dumps, streets, factories and crafts workshops. Large amounts of gases result, such as sulphur dioxide, carbon monoxide and carbon dioxide. The most dangerous of them are sulphur dioxide and carbon monoxide that accumulate in the blood and obstacles the oxygen cycle in addition to the suspended particles coming out from some plants.

- Agricultural soil pollution : Man plays a big role in changing the biological features of the agricultural soil through using some insecticides and chemical and nitrogenous fertilizers, which increase the percentage of mercury compound leaking to the ground water that is later used either for potable or irrigating without being treated. This would cause dangerous epidemic diseases.

Noise pollution: noise resulting from works of building and construction, trains and cars are of the most common noise, in addition to car horns, sound amplifiers and others. High percentages of noise cause human anxiety, sleeping disorder, hypertension, increase in heart beats, partial and total deafness especially with long hours of exposure.

- Radiation pollution (electromagnetic): It results from the effect of electrical and magnetic fields on living organisms, as a result of electrical generation and energy transfer through aerial lines to be distributed among consumers. It also results from electronic devices and transmission devices, where surface charge precipitate on the living organism's body which generates electric currents and fields inside the body. These currents, however small, affects the skin surface leading to skin and blood cancer, troubles in the nervous system and other diseases.
- The absence of an integrated management in addition to unsafe disposal of solid and hazardous wastes and its mixture, in most of the time, with each other, expose those dealing with these wastes to diseases and dangers.

8- Organizational framework and environmental policies

8-1 Authorities responsible for protecting the environment

According to law no. 4 of the year 1994 (fifth article), the EEAA has a public legal personality following the minister of environmental affairs. It has an independent balance, transformed from the general balance of the state, and is located in Cairo. Upon a decree from the minister of environmental affairs, regional branch offices were established in the governorates. According to what is stated in the above mentioned law, the EEAA carries out the following:

- Drawing the public policy and preparing the plans necessary for reserving and developing the environment. It also follows up the execution of these plans in association with the specialized administrative authorities. It's worth mentioning that the EEAA can carry out some experimental projects.
- Representing the national authority responsible for supporting environmental relationships between the state and the regional and international organizations. The EEAA recommends taking necessary legal procedures to join regional and international agreements related to the environment. It prepares draft laws and the necessary decrees to execute these agreements.
- Preparing draft laws and decrees related to achieving the goals of the EEAA and providing opinion in the related presented legislations.
- Supervising the studies about the environmental issues, framing national plans for preserving the environment, preparing its estimated balance sheet as well as the environmental maps of the habitant areas and the areas planned to be developed. Setting the standards to be

committed to when planning and developing the new areas, as well as the standard expected to the old areas.

- Setting conditions and stipulations, for investors to commit to before construction and during operation.
- Supervising field follow up to execute the standards and conditions to which plants and projects are committed to, as well as taking the necessary legal procedures against those who violate these standards and conditions.
- Setting rates and percentages necessary to guarantee not to cross the allowed limits of pollutants, and make sure that these rates and percentages are being committed to.
- Handling all the national and international information related to the environmental status as well as the changes that periodically occurs, in association with information centers in the other parties as use it in the Administration and the environmental planning.
- Setting a plan for the environmental emergencies as shown in article (25) from this law and handling the organization between the responsible authorities.
- Setting the environmental training plan and supervising its execution.
- Taking part in preparing and executing the national program for environmental observation and making use from its data.
- Releasing periodical reports about the main indicators of the environmental status and publishing it periodically.
- Setting programs of environmental education for the citizens and take part in executing them.

- Organizing and securing the circulation of the dangerous materials in association with the responsible authorities.
- Running the natural parks.
- Executing the experimental projects of the governorate to preserve natural wealth and protecting the environment from pollution.
- Inspecting, following up and revising the environmental records, and take the necessary samples from any emissions.

The department of the environmental affairs in the governorate takes over the responsibility of running the environmental affairs all over the governorate. Its responsibilities include environmental organization, enforcing law no. 4 of the year 1994 in addition to the responsibilities of enforcing other related laws in association with the responsible authorities according to what is stated in the decree of the department's establishment in 1981, which will be further explained in the role of the department. Moreover, in every markaz, there exists a division of environmental affairs that has the some specialization of the environmental affairs department in the governorate. It is followed by an environmental unit in every (main) village in which there is an environmental communication official who cooperates with the environment division in the markaz. Both of them cooperate with the environmental affairs department in the governorate which, in turn, technically follows the EEAA where it is provided by consultations and directions, although it follows the governorate administratively.

There are some ministries that are responsible for executing the regulations that were not included in the law no. 4 of the year 1994 such as the Ministry of Irrigation and water resources, the Ministry of

agriculture, the Ministry of Health, the Ministry of Industry, the Ministry of Labor.

There is also a division that follows security management known as environment and water surfaces police force. It carries out the environmental laws especially law no. 4 of the year 1994 and law no. 48 of the year 1982 … etc.

The environment divisions in the local units help the department of environment to carry out its responsibility of protecting the environment and enforcing the related law and take legal action against violators.

- The role of the environmental affairs department in the governorate :

Role of EMU in Menya Governorate

EMU in Menya governorate was established in the year 1981 by the governor decree number 146 for the year 1981 to establish the EMU in the governorate general office, this EMU follows the governor directly who is responsible for them administratively & technically (which is also obtained from EEAA policy & instructions).

The EMU is specialized for following up the environmental laws & decisions as well as control the implementation of these laws in cooperation with the concerned authorities in the governorate, specially the law and decisions in the following fields:

1- Potable water.
2- Disposal of liquid, human and industrial wastes in the field of irrigation & drainage.
3- Health issues.
4- Air pollution.
5- Legislations of licenses & job health.
6- Job radiation.
7- Protection of agriculture, immigration birds, wild animal and fishing.

Also the EMU is specialized for:

- Follow up environmental legislations, and reporting them to local units and service authorities in the governorate in order to be followed up & implemented.
- Field follow-up to control implementation of these legislations.
- Prepare environmental reports as well as improving suggestions.

- Follow up pioneer experiments related with environmental pollution, development and improvement, and present recommendations in this field.
- Hold records & forms of the work.

In addition to the responsibility of following up the law number 4/1994. The EMU director in the governorate and 3 of the department members have the judicial verification to follow the implementation of the law 4/1994.

Also the EMU takes the charge of the following actions :

1- EIA of the projects done inside Menya governorate including the industries area and New Menya city.
2- Periodical & sudden planned inspection as well as preparing reports and minutes.
3- Follow up the implementation of the environmental conditions put by EEAA at its RBO in Assuit.
4- Checking complains and solving them as well as taking legal procedures against law breakers.
5- Field visits as an EIA procedure and supplying EEAA with the needed documents and forms (after review and make sure of the accuracy of the data in these forms) to give opinion according to the law 4/1994.
6- Participate in inspection committee formed from EEAA and RBO in Assuit.
7- Participate in license committees for industrial installations & others.
8- Legal follow up for environmental panels.

9- Participate in symposiums & training courses.

10- Participate in planning and follow up of environmental projects (the solid and hazardous wastes management & others).

11- Establish an environmental data base in the governorate.

12- Prepare reports and raise it to the specialized authorities.

13- Prepare monthly reports and supply EEAA & KBO with them.

Role of EMU in cities & localities (markaz):

- EMU's in cities & markaz have the same specializations of the EMU in the central governorate according to them city and territory, they are supported by environmental units in villages.
- The city or markaz director have the.

Missions related with environmental planning:

EEAA is in charge of preparing the National Environmental Action plan which is considered a strategic plan on the national level, on the other hand and on the local level, the general secretary or the cooperative general secretary is in charge of the Higher Committee for Environment (which is headed by the governor). The commit (in cooperation with the working groups and EMU in the governorate) is in charge of preparing the governorate environmental action plan (GEAP) which includes important issues on the local level, as well as the policies specified in the National Environmental Action plan.

8-2 Environmental Legislation and legal pursuit

The Egyptian legislator faced different environmental problems in many legislations, this lead to issue of some laws, such as :

- Egyptian panel law number 58/1937 in articles number 377, 378, 379.
- Law 45/1949 to organize sound systems.

- Law 66/1953 regarding usage of fuel, coal petroleum.
- Law 21/1958 regarding industry.
- Law 59/1960 regarding organize usage of ionized radiations.
- Law 79/1961 regarding marine disasters.
- Law 93/1962 regarding disposal of solid wastes into sewerage networks.
- Law 10/1966 regarding the control of foods organizing its circulation.
- Law 53/1966.
- Law of public cleanness number 38/1967 modified by law 10/2005.
- Law 1/1973 regarding industrial establishments and prevent noise.
- Transportation law 66/1973.
- Law 57/1978 regarding getting rid of ponds & swamps.
- Law 52/1981 regarding smoking harms.
- Law 3/1982 about urban planning.
- Law 48/1982 regarding the protection of the Nile & its branches.
- Law 102/1983 regarding natural protected areas.
- Law 116/1987 regarding protection of agriculture environment.
- Law 12/2003 about work & protection in work environment.

Then law 4/1994 was issued regarding the protection of the environment, and is considered a big civilization leap by which Egypt took place among civilized countries which show specially care about protection of the environment and facing pollution. It is the first Egyptian legislation issued under the title of "protection of the environment" and also put an integrated legal organization for protecting the environment.

From here the serious organizing and the effective good environmental management took place.

Law 4 for the year 1994:

This law was issued in 27 January 1994, and is considered the first law that carries the environment name, and aims protection of the environment, also puts an integrated legal organization for this protection. The main characteristics of this law are:

- The first subject in the first chapter in the law included the meaning of 37 words or phrases in the implementation of the law, also identified in the point 38 of this subject the administrative authorities which are in charge of protecting the environment.
- Put an integrated organization for the environmental management in Egypt, as EEAA was established inside the Cabinet of Ministers and it follows the Minister of Environmental affairs.
- The law allows establishment of RBO's for EEAA in the Governorates according to the decree of the specialized Minister (which wa already issued by number 187 for the year 1995 to establish 8 ROB's, Menya governorate follows the RBO of North upper Egypt located in Asuit).
- The law allows EEAA many specializations according to the subject number 5 in the law.
- The law focused on public participation as a principal in environmental management as well as drawing environmental policies and taking decisions related with environmental affairs. The law also illustrated that EEAA board council is the higher authority controls its affairs and puts general policies of EEAA, the law also illustrated that EEAA board is formed of 20 members headed by the Ministry of state

for Environmental affairs among them 3 members from the NGO's, and 3 from business sector, 2 from the environmental specialists, 2 from universities and scientific research centers.

- The law gave the right for every citizen or any environmental NGO to report and inform about any violation against the environmental law subjects.

Also gave them the right to go to curt or the concerned administrative authorities to implement law 4.

- Establishment of EPFC environmental protection fund) to support EEAA in achieving its goals through offering the financial resources which are required for treating environmental disasters and implementing experimental projects in the field of protecting natural wealth and protecting the environment from pollution, establishing and operating environmental monitoring networks, establish natural protected areas department, awards for special achievements in the field of environmental protection and support EEAA's infrastructure.
- Setting "reward & punishment" principal through updating an incentive system in cooperation with Ministry of finance to put an incentive system offered by EEAA to organizations or authorities or individuals or others among their projects or actions aimed for protection of the environment.
- The law obligates EIA for the development activities before establishment which leads to minimizing the negative effects and maximize the positive effects of these activities. EIA is considered one of the necessary strategic tools to guarantee the protection of the environment, as the EIA is done before giving license to the projects.

- The law authorized EEAA the responsibility to put an integrated institutional system includes the standards and principles to make EIA studies and review them as well as giving opinion in these studies to guarantee that the work environment health is put into consideration as well as the maximum limits for gas emissions and wastes as well as preventing new sources for pollution. Also the law obligated any expansion or renewal in the existing establishments to be subjected to EIA. As for the existing establishment the law obligated them to comply their conditions (according to the law) during 3 years after the executive list was issued.
- The law works with the principal of transparency and environmental commitment, as it obligates the establishment owner to keep a record listing the effect of the establishment activity on the environment, and also establish a self monitoring system inside the establishment, any breaking for the limits or standards will be reported to EEAA.
- EEAA is responsible for follow up data in the records of the factories to check they are identical to reality, also EEAA takes if any violation was identified them EEAA report to the concerned authority to obligate the establishment owner to fix the violations ASAP, if the violations are not cleared with in 60 days the CEO of EEAA (in coordination with the concerned authority take the needed procedures which is either closing to establishment or stop the activity or legally call for the appropriate fines to cure the harms caused from these violations.
- The law specialized a whole chapter for hazardous wastes & substances, also the law banned these substances circulation without license from the concerned authority, also banned importing of

hazardous wastes or allowing its entrance or passing through Egypt's lands. Also the law banned the passing of vessels carrying hazardous wastes in the Egyptian waters unless having the license of the concerned administrative authority, the law stressed the panel in this regard as well as re-exporting these materials on the cost of the importer.

- The law offers the protection for the marine environment from pollution from the marine or land sources to include the regional sea and the pure economical area which extends to 200 marine km. From shore line.

Related Environmental laws:

Were pointed at the introduction of the environmental legislations, the most important is law 4/1994, law 48/1982 regarding the protection o the Nile river & surface waters, law 102/1983 regarding natural protected areas. The main characteristics of law 48/1982 and law 102/1983 are as following:

Law 48/1982 :

Issued in the 21st of June 1982 aiming at the protection of the Nile and the water courses from pollution. It was mentioned in the first subject in the law 4/1994 and that was why the law 4/1994 did not treat with Nile River and its branches, but on the other hand law 4/1994 stressed penalty on the violations of law 48/1982. The law identified in its first article the water courses which are protected by the law including fresh and non salty water courses as well as underground water tanks. Also the law prevented drainage or disposal of solid or liquid or gas wastes from houses or shops or commercial or industrial or tourism establishments as well as domestic wastes and others do not make any

drainage. Unless having license from the Ministry of Irrigation according to the standards specified by the decree of the Ministry of Irrigation according to a suggestion from Ministry of Health. Also the law gave authorization to the bodies of Ministry of Health to make periodical analysis in its laboratories for samples taken from the treated liquid wastes from establishments licensed to dump into water courses. The Ministry of Irrigation & owner of the establishment are informed with the results, and the law specified the organizations procedures for that.

Also the law organized the licenses to establish the floating establishments. The law also banned the mobile river units which are used for transportation or tourism to leak the fuel used in its operating into water courses. Moreover the law gave authority to water surface police (following the Ministry of Inferior) to be in charge of continuous inspection patrols along the water pass and support the concerned authorities to control the violation cases and remove pollution reasons.

Law 102/1983 regarding natural protected areas

This law was issued regarding protection of natural protected areas, the first subject identified the natural protected area as : “any area of land or costal or internal water specialized with its living creatures either plants, animals, fish or natural phenomena with cultural or scientific or tourism value. The protected areas are specified upon decisions from the prime Minister upon a suggestion from EEAA.

The law 102/1983 banned any action or activity may destroy the natural environment or may harm the floral, marine wild life or even touch its beauty level in the protected area. Also banned hunting or transferring or killing or disturbing marine or wild life creatures. Also banned hunting or taking or transferring any creatures or organic

substances like shells, coral reefs or rocks or soil for any purpose. The law banned destroying or transferring creatures in the protected area or destroy or damage the Geological Formations or entering any strange creatures in the protected area. The law also banned establishment of any buildings or roads or car transporting or any agriculture or industrial or commercial activity unless a license is taken from the concerned administrative authority.

The law authorized the environmental NGO's to go to the administrative and legal authorities to implements the law, also the law established a special fund for natural protected areas to collect money of donations and grants as well as visiting fees of natural areas these money are aimed for supporting the budget of the authorities which work on implementing the law and the contribute in improving the natural protected areas and make required studies & researches in the field as well as for the rangers or persons who seize the crimes or violations of the law.

Ministries in charge :

The legislator authorized some authorities to implements the environmental laws either Ministries or organizations related to the subjects of these laws, from the important authorities in charge of implementing the environmental protection laws:

- Ministry of state for environmental affairs represented by EEAA and its RBO in Assuit.
- The governorate represented in the EMU in the Governorate General Office as well as the divisions in localities.
- Ministry of inferior represented in water surfaces & environment police section, and transportation and utilities.

- Ministry of Health represented in Health population Directorate.
- Ministry of Irrigation represented in water resources & Irrigation Directorate.
- Ministry of Industry (Industrial control authority).
- Ministry of Agriculture.
- Ministry of (Industrial safety, Job health & safety).
- In addition NGO's & individuals.

Authorities responsible for legal pursuit

The major role of legal pursuit is in charge of EEAA and its RBO as well as the EMU in the Governorate and localities and also water surfaces environment police.

Legal pursuit starts from the environmental violation and ends with the final court decision passing by the locality and the public prosecution and its investigations. The court of law collects the fines (approved in the court decision) then sent to the Environmental Protection Fund (EPF) in EEAA in Cairo according to the law 4/1994.

8-3 Higher committee for Environment

Membership:

The decision number 594 dated 22/10/2005 was issued regarding the formation of the Higher committee for Environment, headed by the governor, and is formed from:

1- Professor Doctor vice president of Menya University for Environmental affairs & social services.
2- Head of the local council for Menya governorate.
3- Representative from security directorate in Menya.

4- General Manager of the legal affairs in the governorate General Office.

5- Manager of the solid wastes management project in the Governorate General Office.

6- Director of TV. Channel 7 for the TV. Of North of Upper Egypt in Menya.

7- Director of social development fund branch in Menya.

8- Directors of local units in the 9 localities and cities of Menya governorate.

9- Director of the directorate of Immigration and working power in Menya.

10- Director of Health & population directorate.

11- Director of the Housing & Utilities directorate.

12- Director of Agriculture directorate.

13- Head of the General Department for irrigation & water resources directorate.

14- Director of the Interior commerce and supply directorate.

15- Director of the social affairs directorate.

16- Director of the Education Directorate.

17- CEO of the Potable and Waste water Company in Menya.

18- General Manager of planning & follow up in the Governorate General Office.

19- General Manager of the investors' service office in the Governorate General Office.

20- Director of urban planning in the Governorate General Office.

21- General Manager of the Information center in the Governorate General Office.

22- Director of Gender department in the Governorate General Office.

23- A representative for the environmental NGO's.

24- A representative from the Coptic Engelic organization in Menya.

25- Director of the EMU in the Governorate General Office.

Responsibilities:

This committee is responsible for the strategic planning for the environmental activities in the governorate according to what is stated in the National Environmental Action plan, in this regard the committee is responsible for the following:

- Put the governorate's environmental polices & plans and preparing the local development vision & polices with regard to the National strategies, as well as merging the environmental dimension in the development plans.
- Review development plans for different sectors in the governorate to guarantee the merging and updating and follow up of the implementation of the GEAP.
- Coordinate the plans and activities for all local authorities and encourage social organizations and private sector to contribute in the decision making process in development.
- Giving political backup and care for the initiatives that aim for improving the life style of the citizens and their well fair and Luxury.
- Review the proposals of the environmental experimental projects and common environmental projects presented to the Higher committee,

these projects are financed either locally or from foreign donors according to the priority of the GEAP, the responsibility of the whole supervision for all these projects to the administrative authority in the Governorate, and the follow up of implementing these projects is done in cooperation with EEAA RBO to guarantee its effectiveness is the field of environmental protection as well as maximizing the environmental impact.

- Specify the plans and police and mechanisms aiming for improving available resources for environmental management in the governorate and also the cost of reviewing the projects proposals cost of planning meetings.
- Review action plans of EMU of the governorate and EEAA RBO as well as checking the periodical implementation reports to follow them up and treat any obstacles facing them.
- The committee also forms working groups headed by some committee members specified by the knowledge of the committee chairman, these working group to make the following :
  1- Study follow up specific subjects during the time period of the meetings and prepare working sheets for the results as well as presenting the appropriate suggestions.
  2- Follow up the implementation of certain subjects with special priority in the GEAP, these group are formed for long periods for continuous follow up for the activities, the working group have the choice the get support from any required experience with regard to the financial & administrative systems.

- The executive committee for environment on the level of Menya governorate is formed from the Assistant General Secretary as a chairman, and the membership of the following :

  A- Director of Agriculture Directorate in Menya.

  B- Director of Health & population directorate in Menya.

  C- Chairman of the NGO union in Menya.

  D- Head of EMU in Menya governorate general office.

This committee is in charge of follow up implement the Decisions of the Higher Committee and its recommendations.

Meeting & appointments:

After the issues of the decree of formation the committee and announcing its members, the first meeting was specified which was on 13/3/2006 and with the attendance of all members, the committee agreed on including in its membership each of the Assistant General secretary and the Director of North Upper Egypt Radio station in Menya, also the Director of communication center in Menya, Manager of transportation department, Manager of the Industrial area, and director of the social development fund, also in that meeting the committee agreed on the rest activity agenda. The committee is held periodically every 2 months.

8-4 Role of local and cooperative counterparts:

The private sector and NGO's has got a wider range and more in depth role (side by side with governmental organizations) to achieve the social & economical development with regard to the economical reforms.

The NGO sector is presented side by side with the governmental organization in the society.

Countries all over the world focused on this sector because of its direct effect on all citizens, as this sector knows the people's needs closely, and the people accept its role among them and its finance in addition to the governmental finance.

Menya governorate gives a big concern for NGO's and gives financial support, also the governorate supports the active & effective NGO's which reached 1031 NGO in Menya among them 71 only working in the field of environment.

NGO's (Non Governmental Organizations):

The beginning of the social activity in Menya started in 1962 when the local social development organization was announced in Maghagha city, after that other NGO's were announced to reach 1031 NGO in the year 2005 according to the social Affairs Directorate, among them 565 NGO's in rural areas and 466 NGO in urban areas; which mean the equality between NGO's in urban & rural areas although the population of the country side is 82% and urban areas is 18%.

The targets of these NGO's are mainly developing the local community, social economical care, adopting national projects such as protecting the environments illiteracy, non-employment, over population. In the recent year it was noticed the increase of importance and value of financials grants offered from international organizations to the NGO's in Menya Governorate which reached 193 million L.E in the year 2003. Moreover Menya governorate is lucky to have the Coptic Evangelical organization for social services (CEOSS) which contributes effectively in developing the local community on all levels and field.

Youth organizations:

Number of youth organizations & sports clubs in the governorate reaches about 183 organizations distributed in the forms of 10 youth centers in urban areas and 152 youth centers in countryside. It was noticed the presence of one or more youth organization in each city, where there is about 194 villages (represent 46% of village number) do not have any of these organizations. The membership of these youth organizations of the level of the governorate reaches about 116,8 thousand member. But all these organizations depends completely on governmental resources and do not obtain any grants of financial support from foreign organizations comparing with NGO's. These youth organizations participate in developing the local society through their activities in protecting the environment and awareness camps for youth.

The stable financial support presented from Ministry of Youth & sports to the youth activities from more than 10 years without any increase is considered one of the main obstacles facing these organizations.

Health organizations:

The number of private local clinics in the governorate reached 50 clinics distributed among different localities in the governorate. These clinics follows Muslim & Christian NGO's, they concentrate in Menya & Beni Mazar localities (12) 20 clinics in each of them respectively). These clinics depend on individuals and their followed NGO as a main source for financial support in addition to their services fees. These clinics have an important in the field of presenting health care for people with a level exceeds that in the governmental health organizations, in addition to low cost therapy in these clinics. The management in these clinics is self

management by the board of the NGO they belong to. Therefore these clinics represent a successful image for the NGO's in general.

Businessmen organizations:

There is an organization for business men in Menya, it activities cover different localities (markaz) in Menya, their targets and activities are many & different either in the field of general social services or coordinate between each other or support their capabilities in business field, the organization activities are represented in the following :

Environmental reformation projects:

The beneficiaries from it reaches more than 2000 family, and it is planned to reach 7000 family after one year.

- Illiteracy elimination project: targets 200 illiterate person.
- Training and qualifying youth for job market in cooperation with "future generation organization" in Cairo, this project targets about 150 man & women.
- Social solidarity fund project with self finance from organization members to support poor people to establish micro projects with annual interest reaches 2% as administrative fees.
- Establish a technical support unit, this project fo small & medium projects to support exporting abroad.
- A project in the field of networking effectiveness in the field of investment, users are 505 from youth (man/women).

The problems and obstacles facing this organization are :

1- Low awareness level regarding the free work and private sector skills.

2- Negative attitude and careless of some individuals in the society.

3- Absence of the culture of participation and cooperation and team working (outside the organization).

4- Absence of the transparency and judgment concepts for others (outside the organization).

Consumer protection organization:

There is only one consumer protection organization in Menya governorate, it was announced in 1995, it is a member in the General united for consumer protection organizations in Cairo. Also it is considered the first consumer protection organization in Upper Egypt, its head office is Menya city, its activities very but all in the field of protecting the consumer and awaring him with bad products or cheated items, also fighting bad merchandizes and monopolizers, also related activities like raising awareness, control and distributing information. The projects of this organization besides other activities are as following:

- Projects for collecting garbage and health improvement and support in limitation of environmental pollution, decorating squares, planting trees in the streets, clean water linking, establish toilets.
- Society development projects through profitable projects like private schools starting from kindergarten and all education levels, and also constructing houses for the youth.

Citizen's councils:

These councils aim for achieving people's participation in management of the development process on the governorate land as they are considered the local management. These councils can be responsible for control and follow up on the executive bodies and development plans and projects in the governorate with in the limits of the government general policy and according to the related laws.

Religious organizations:

These organizations either Moslem or Christian are spreading all over the governorate's cities and villages, reaching 416 in total among which 232 in countryside and 184 in urban areas, though their services are more concentrated in cities than villages. These organizations act on supporting the national unity and social coherent in addition to its religious activities like symposiums and lectures. In recent years these organizations start to offer medical and educational services.

Cooperation organizations:

A- Productive cooperation organizations (productive market) : its number reaches 22 branches distributed among the governorate's cities. Menya city only has got 15 branches; this activity barely disappears in the countryside.

B- Cooperation organization for consumer products: there are 31 cooperation markets in the governorate to sell consumer products in different kinds. There are 28 markets in urban areas and 3 only in the countryside. Menya city is at the top cities regarding number of these markets, Menya city has got 11 cooperation markets.

C- Cooperation organizations for housing: Their role in found only in Menya city except one organization only practices its activity in Maghagha city.

Obstacles of the cooperation organization activities:

- Non ability for the productive organizations to improve and update themselves or to obtain grants from donors on the local or international level.

- The housing cooperative organizations are found only in a very few number of the governorate directories. Their role is minimized in the past 10 years, moreover this organization could not construct any houses for its members and they face weak financing problems, also its members do not pay their debts.

From all the above it is obvious that the civil work in the governorate is till in the growing stage, faces weak and strength points, and still badly needs different ways of support to increase the people's participation in order to achieve the integrated development.

8-5 Awareness & environmental education:

The responsibility of the awareness and environmental education is in change of many authorities, though they leak of coordination between each other, moreover these operations are not well enough, as the environmental awareness is considered a main base in developing the society and preserve environment, without this awareness there is no achievement for environmental protection goals.

- There are specialists in the field of education concerned for awareness and environmental communication but not at the required level to achieve this goal, these specialists consider the environmental studies as a second degree studies (taken for granted) because thee studies are not linked with the examination and the students evaluation degrees, besides weak environmental culture of the teacher and student at the same time.
- As for awareness in NGO's and youth organizations, we find that they hold symposiums and awareness comps but not enough due to weak capabilities or weak interest in this field, but there are few NGO's which is active in this field like CEOSS which have an obvious

activity in the governorate in the field of environmental awareness and different activities in this field, as it is a public benefit NGO, in addition to other NGO's will be mentioned later.

- In university, summer camps are organized for university students aiming raise of the environmental awareness in the society through students in the society they live in.
- The agriculture guidance organize environmental awareness symposiums specially in the countryside, these activities is supervised by rural communication committee which is formed from different authorities headed by the governor, the caravans of this committee visit all villages and rural areas in Menya governorate according to a certain program and plan to achieve its targets.
- Also there is a communication center in Menya and another one in Mallawi organizing symposiums and different meetings to spread environmental awareness among citizens.
- Although all the above information, but still there is a clear leakage in the interest of Ministry of communication (represented in TV, Radio and printed media) to deliver the communication message in the field of environmental awareness to the target groups (according to their kind) although these Media have their direct impact on people.
- In addition there is weakness in the financial resources which off course act as an obstacle infront of the other authorities activities to achieve their goals in the field of environmental awareness.

8-6 NGO's activities:

There are more than 1031 NGO's in Menya governorate recorded in the social affairs authority, among them 73 NGO's working in the field of environment, in addition to the environmental activities done by other NGO's besides their main activity. Table (100) illustrates some environmental projects done by some NGO's.

Table (100): NGO's working in the field of environment and type of their projects

No	NGO name	Type of Project	Location
1	For you my country	Agriculture wastes	Abo Korkas
2	El Fateh for protecting the customer	Agriculture wastes	Menya
3	Science and faith	Solid wastes	Saft El laban, Menya
4	Taieba for works	Solid and liquid wastes	Samaloot
5	Delga sons	Solid and liquid wastes	Dir Mawas
6	Improving the environment	Solid and liquid wastes	Aker , Menya
7	Wafaa and amal	Solid and liquid wastes	Beni Ahmed, Menya
8	Ragaa for development	Solid and liquid wastes	Beni Ahmed, Menya
9	Egyptian for development	Solid and liquid wastes	Beni Mazar
10	Egyptian for Local development	Solid and liquid wastes	Samaloot
11	Al Karama	Solid and liquid wastes	Abo Korkas
12	Kholafaa Rashedeen	Agriculture wastes and fertilizers	Tela, Menya
13	Hope youth	Agriculture wastes and fertilizers	Demsha and Hashem, Menya
14	El Forsan	Agriculture wastes and fertilizers	---
15	Developing Soultan Corner	Agriculture wastes	Soultan corner, Menya
16	Abass Rahmy development	Agriculture wastes and fertilizers	Matay
17	The Raising	Agriculture wastes and fertilizers	Darwa, Mallawi

No	NGO name	Type of Project	Location
18	National for Human rights	Agriculture wastes and fertilizers	Samallout
19	Ber and Takwa	Solid and liquid wastes	Bergaya, Menya
20	The hope	Plantation and cleaning	Badraman, Die Mawas
21	Saft el Kheimar development	Cleaning	Saft el Kheimar, Menya
22	Eastern Saft development	Plantation of the village	Eastern Saft, Menya Tahashna
23	Tahshna	Plantation the village	Tahashna
24	Mahaba	Increasing environmental awareness	Beni Ahmed, Menya
25	San Mark	Increasing environmental awareness	Menya
26	Shari'ea	Plantation	Monkateen, Samaloot
27	Kamadeir development	Cleaning and garbage	Kamadeir, Samaloot
28	Algeria development	Agriculture wastes	Algeria, Samaloot
29	Kolosna development	Agriculture wastes	Alkais, Beni Mazar
30	Alkais development	Health awareness and cleaning	Samaloot
31	El E'tezaz development	Health awareness and cleaning….	Samaloot
32	Faith and science	Cleaning and garbage	Samaloot
33	Abo Gerg development	Liquid wastes	Beni Mazar
34	Women ness	Health awareness	Naseriya, Beni Mazar

No	NGO name	Type of Project	Location
35	Women ness	Health awareness	Nazlet Omar, Beni Mazar
36	Senedfa development	Cleaning and plantation	Sandafa, Mazar
37	Nahdat Beni Ghani	Plantation	Samaloot
38	Women leaders	Health awareness and toilets	Samaloot
39	Social development	Health awareness and toilets	Zahra, Menya
40	El Manshia for development	Cleaning and plantation	Menya
41	Shak El Sheik development	Plantation and toilets	Tela, Menya
42	Abo Bakr El Sediek	Health awareness	Mattay
43	The Best life	Environmental and health awareness	Menya
44	Future Eve organization	Cleaning and health awareness	Menya
45	Badr charity	Cleaning and health awareness	El Shourafia, Mallawi
46	Byadiya development	Cleaning and health awareness	Mallawi
47	Science and faith	Health awareness and plantation	Kelba, Mallawi
48	Ebshadat development	Plantation and cleaning	Ebshadat, Mallawi
49	Om El Kora for orphan adoption	Plantation and cleaning	Mallawi
50	Bent El Nile	Toilets	Beni Mazar
51	Islamic solidarity	Health awareness	Abo Korkas
52	Islamic solidarity	Toilets	Mensafies
53	Takwa and faith	Water linking and health awareness	Abo Korkas
54	El Share'ia	Plantation	Saft El Laban

No	NGO name	Type of Project	Location
55	Sheik Negm	Garbage disposal	Tewa, Menya
56	Safaniya development	Cleaning and plantation	Safaniya, Edwa
57	Haridy development	Plantation and garbage disposal	Edwa
58	Dashloty development	Plantation and garbage	Edwa
59	Sa'wy development	Health awareness	Edwa
60	Nahda	Health awareness and garbage	Beni Salem, Dir Mawas
61	Charity	Health awareness and cleaning	Haj Kandiel, Dir Mawas
62	Delga development	Health development	Dir Mawas
63	Azab Ayioub development	Health awareness and cleaning	Dir Mawas
64	Country side woman development	Cleaning and awareness and garbage	Dir Mawas
65	Upper Egypt	Agriculture wastes	Menya
66	Youth of the Future	Health awareness	Menya
67	Integrated and sustainable development	Health awareness	Menya
68	Industrial area investors	Health awareness and cleaning	Menya
69	Nefertity for women development and protection	Health awareness	Menya
70	Refai'ya for charity	Health awareness and cleaning	Tela, Menya
71	Islamic for charity	Health awareness and cleaning	Boga, Samaloot
72	Ahliya for countryside development	Health awareness and plantation	Menya
72	Abo Bakr Elsedik	Plantation and health awareness	Menya

Source of information: Social solidarity directorate in Menya

These projects of the NGO's work in the field of cleaning the environment like collecting garbage and wastes from villages where these NGO's exist then dispose these wastes in the random landfills or according to these villages' capabilities.

Project impact on the environment:

- Project in each NGO's works on collecting garbage and cleaning the environment in general.

Negatives facing these projects:

1- The decision issued for the final specialization of 8 acres in the mountain area in Bahansa which include the landfill of the sandafa solid waste project.

2- Low number of project participants in sandafa village.

3- El kais village needs an equipped tractor due to the wide range of the village and the people's desire to participate in the cleaning project.

8-7 Environmental activities in the Governorate:

The environmental reformation programs and activities are vary in the governorate, they include:

"Planting trees" programs, establishing public parks, covering water canales inside residential areas, collecting wastes and garbage and transferring them to organic fertilizers. Number of environmental reformation projects in different cities & villages in the governorate by governmental authorities.

- Number of implemented projects in the field of covering water canals inside residential areas reached 24 projects distributed among the localities of the governorate, these kinds of projects aim for limitation

pollution and improving the environment. This project started in 2002 in villages of Menya & Abou korkas markaz, followed by the rest markaz in 2003. There are many authorities funding such kind of projects, comes at the top "Shourook" project and the urgent plan. The project achieved 100% of its goals in all the target areas in the governorate localities except Maghagha and Odwa locality as the achieved percentage was 70% an 60% respectively.

- As for garbage recycle projects and transferring it into fertilizers, they are being implemented in Menya & Mallawi localities with the finance from Ministry of Environment and Ministry of Local development. Where other cities leak of finance to establish such project.
- All localities (markaz) of Menya governorate are interested in establishing public parks with finance from Development & Services fund in the governorate as well as the finance from urgent plan budget. Most cities of Menya governorate suffer from the absence of empty lands to establish public parks inside these localities.
- Nile banks in Menya city are considered one of the most distinguished planting trees projects to increase the green surfaces in the capital of the governorate.
- Ring Road project around Menya city will decrease the traffic jam and controls the negative environmental effects for cars emissions.
- Ministry of supply changed the fuel used in all bakeries from Mazot to gas to cope with the general policy of the government and to support the environment reformation.
- Also there are projects financed from NGO's, these projects are in the field of solar energy usage, limitation of polluting the Nile River, improving the basic environment, pure water linking, maintenance of water canals and solid waste recycling.

8-8 International initiatives and role of donating parties:

Roles & principles:

All the donating funds either dealing directly with the governorate or through Ministry or Environment have roles & principles must be achieved through the grant. Most of them concentrate on solid waste management, improving the environment, poverty limitation from the social & economical point of view as well as enabling the woman socially and economically, prevent & control dangerous of toxic chemical wastes and the unsafe treatment with chemicals, most of these donating funds prefer to implement these projects through NGO's and under the supervision of these donors.

Commitments:

The donors committee to offer the finance according to the signed protocols & agreements signed between the donors and Arab Republic of Egypt (A.R.E) or with the governorate directly under the supervision of cabinet of Ministers and coping with the government's general policy, also the governorate commits to implement its commitments specially regarding supply lands for projects and infrastructure for these projects, also the governorate is responsible for supervising & control on these projects.

Action plans:

These projects are implemented through action plans which are agreed between the donors and implementation authority under the supervision of the governorate according to the type and goals and strategy of the project as well as the local citizens target group.

Projects implemented through international initiatives and donating funds :

- The Italian project for solid waste management in the governorate with cost of 950.000 Euro, it is funded by the Egyptian Italian program, and implemented by through EEAA, this project aims for developing the initiative to improve the governorate capabilities to plan, manage and follow up the solid wastes management activities by an economical method that protects the environment and cells for social concepts.
- Multi purpose project for small projects with fund of 6, 8 million L.E. from the Egyptian Italian program and targeting the working woman, the implementation authority is the national council for woman.
- Prepare and establish schools project, financed from the Egyptian Italian project, aims to achieve goals of the Egyptian Education plan, with fund reaches 15 million L.E. Sharkeya, Sohag and Menya governorate participate in this project.
- Controlling on toxic chemical wastes project, it aims to develop the information center specialized for toxic substances in Menya & Dakahliya governorates in order to raise the public awareness.
- Regarding safe treatment with chemicals which leads to minimization of toxic cases in the target societies as well as improving the general health with a cost of 1 million L.E. from the Italian Egyptian program and implemented by Ministry of Health.
- Developing the urban environment in the western neighborhood in Menya, this project concentrates on management of solid in the Western neighborhood in Menya with a cost 25 million L.E. financed from the Egyptian Switzerland fund and implemented by the CEOSS

under the supervision and control of Menya Governorate, as the governorate supply an amount of 2 million L.E. annually with an interest of 5% annually and for 4.5 years after that the governorate will finance the project totally.

- The environmental reformation project financed by the UNICEF and implemented by the public economic authority for potable water & sewerage with a cost of 2,011447 L.E.
- Developing the potable water station project in kedwan, and establishing the sewerage station in Bani Mazar as well as establishing 12 filtration units in villages of the governorate according to the agreement of the Egyptian grant group and implemented by the General authority for potable water & sewerage in Menya with a cost of 79.4 million US$ financed with the United States of America.
- The Canadian project which finances the NGO's in the governorate to implement the agriculture and solid waste management projects, these project was mentioned previously in the solid waste management partition.

Environmental Issues and Priorities

This report will be finalized to introduce beneficiaries of the environmental study to the current situation. This study shall be the baseline of identifying the prioritized environmental issues inside the governorate with the participation of beneficiaries. Hence, the report will be used to prepare the governorate work plan that will address the priority issues and determine the required procedures to implement the projects over a time schedule developed according to the governorate and national plans. Table 101 presents a summary of environmental issues.

Summary of Environmental Issues in El-Menya

Environmental Issues	Description
1- Solid Waste Management	Lack of waste collection and transport equipment. Accordingly, waste disposal proceeds in a random manner either by dumping into the irrigation canals, in streets, or by random incineration, leading to the deterioration of air quality. This is due to the inefficiency and ineffectiveness of solid waste management, which is still managed by the renowned inefficient local units.
2- Wastewater Treatment	Establishment, installation, and operation of septic tanks and trenches is a problem in rural areas, where there is a high groundwater level, and where all the governorate villages and currently five towns, depend mainly on septic tanks and open trenches for wastewater disposal. Also, disposal of scavenged wastewater from these trenches is made randomly in subsidiary drains, which flows to the main drains and then to the River Nile, or is made in random desert sites. Disposal of wastewater in open-bottom trenches adversely affects the groundwater quality, as well as causing a threat to the potable water resources where groundwater is mainly depended upon in some towns and most of the governorate villages.
3- Water Supply	Some villages lack adequate water networks, and many residences are not connected to the main water supply network, and depend on water pumps. Many areas in the governorate depend on groundwater as potable water source, as indicated above. In some areas the dissolved salts, with iron and manganese rates are higher in some areas, which affects water taste and odor. In other areas, salts are even higher causing health hazards.
4- Disposal of agricultural wastes	As indicated above, the governorate of El-Menya is an agrarian-based region, where considerable amounts of agricultural wastes are generated. These wastes are largely reused as animal fodder or organic fertilizers. However, large quantities of these wastes are incinerated randomly leading to a deterioration in air quality, according to relevant reports by the Agricultural Sector

Environmental Issues	Description
5- Industrial Pollution	The operations of big industrial facilities such as the Sugar factory in Abou Korkas and Cement factory in Bani Khaled, Samaloat, Nile Co. For Cotton Grinning in El-Menya, and other factories, result in liquid and air emissions that lead to the reduction of air and water quality. Accumulated emissions resulting from small and medium industries at the governorate lead also to the deterioration of environmental quality although the emissions from each facility individually is not obvious yet this shall have an accumulated impact on the air quality.
6- Environmental Awareness and Communication	Is very low among the public, especially as regards environment-related health problems
7- Environmental Education	Environmental education is absolutely absent in all governmental and private schools. Although various educational stages are considered the best times in human life for establishing environmental awareness, enriching the sense of belonging to the native land, and the importance of environmental cleanness on daily life. The behavior of youths and students and the lack of environmental culture of the whole family, actually highlight the need for the aforementioned concept of education.
8- Industrial Capabilities	Through regular inspection of the industrial facilities at the governorate, the lack f environmental awareness of facility owners and managers is quite evident. Evident also is the disregarding of the environmental aspects in many facilities either deliberately or in fear of losses. This is because facility owners have either considered the issue in mere economic terms or because they are ignorant of the environmental dimension and consequence. They should learn that adopting environmentally safe operations, using environmentally friendly raw materials, applying safe disposal of their wastes, and providing cleaner production technologies, would open before them many markets that currently avoid polluters. This is achievable through enhancing the capabilities and awareness of facility owners, and providing them with guidance, and loans/grants, impose fines for polluters and offer incentives for cleaner production and open markets before their "clean" products.

Environmental Priorities:

Priorities were identified through consultations and views exchanged with a wide range of governmental agencies, private sector, community-based associations, prior, taking into account the governorate population growth to the year 2022 and the challenges facing efforts to accommodate this growth. In addition to preserving the natural and cultural environments and natural advantages that characterize the governorate nationwide. El-Menya does not differ from other governorates in its environmental problems and priorities, since there are common priorities shared by all governorates, and a few of which is characteristic of El-Menya. These are arranged as follows:

1. Potable water and wastewater
2. Safe disposal of solid and hazardous wastes
3. Water resources, irrigation and drainage
4. Enforcement of environmental laws and regulations
5. Environment and health
6. Agriculture, fish farms and agricultural wastes
7. Industrial pollution
8. Institutional capacity building.
9. Environmental awareness and education

EEAA

Minia Governorate
EMU

Annexes

Environmental Profile of Menia

Social features annex

Table (2-4-2-1) population development in Menya

S	Age	Estimated population no. in 2004					Estimated population no. in 2005				
		Male		Female		Total	Male		Female		Total
		Rural	Urban	Rural	Urban		Rural	Urban	Rural	Urban	
1	0-	443.8	245802	42518	233105	565733	45296	251285	43466	238304	578351
2	5-	48621	252314	46280	231540	578755	49706	275942	47313	236705	591666
3	10-	52150	236035	48538	211202	547925	53313	241300	49620	215913	560146
4	15-	47837	187201	44399	154882	434318	48904	191376	45389	158336	444005
5	20-	34505	123715	32735	112641	303596	35275	126475	33465	115154	310368
6	25-	26663	97670	28220	111077	263629	27258	99848	28849	113554	296510
7	30-	24703	84647	24081	86045	194762	25254	86535	24618	87965	224371
8	35-	24311	86275	24833	95432	230851	24853	88199	25387	97561	236000
9	40-	21566	68369	20318	71965	182218	22047	69894	20771	73570	186282
10	45-	19213	66741	17684	65707	169346	19642	68230	18079	67173	173124
11	50-	13332	47207	13545	96531	127276	13629	48260	13848	54378	130115
12	55-	10979	40696	9783	40676	102134	11224	41603	10001	41583	104411
13	60-	9018	34184	9407	37547	90156	9220	34947	9616	38385	92168
14	65-	7058	27673	6520	28160	68912	7215	28290	6154	28788	70447
15	70-	4313	16778	4739	18774	43504	4409	16641	4231	19192	44473
16	75-	3529	13023	3763	12516	32830	3608	13313	3847	12795	33563

Table (2-4-4-1) no. of subscribers benefiting from this service till 30-6-2005.

Markaz	*Citizens*		*Governmental*	
	Sold water	*No. of subscribers*	*Sold water*	*No. of subscribers*
Odwa	21630	1731257	388	544327
Maghagha	49306	4762191	728	10184450
Beni Mazar	50424	6045258	480	729082
Mattay	23724	2816289	539	400059
Samallout	60704	7463599	688	830227
Menya	102626	15148556	1838	6929306
Abo korkas	45187	5608809	827	1478199
Mallawi	69663	7981991	1023	1171575
Deir Mowas	28988	6528404	412	523228
Total	452252	55330755	6923	13624453

Source : Potable and waste water company in Menya.

Health Annex

Table (2-4-5-1) life expectation at birth (in years) in Menya in 2003.

Markaz		*Total of markaz*		*Urban of markaz*	*Villages of markaz*			
					Max. limit		*Min. limit*	
					Age in years	*Village*	*Age in years*	*Village*
Menya		67.8	67.6	67.7	68.4	Hawaslyya	67.2	Damsheer-zawyet soltan
Abo korkas		67.4	67.4	67.3	67.9	Abo safa	67	Greece
Odwa		67.4	67.5	67.3	67.5	Baghour-zawyet barsha	67.2	Qayat-nazlet Ramadan
Beni Mazar		67.1	67.2	67.2	67.6	Abo Abbas	66.4	Shalkam
Deir Mowas		67.4	67.0	67.1	67.2	Nazlet Awlad Morgan	66.4	Tal Beni Orman
Samallout		68.0	66.5	67.9	69.1	Monsha'et Badeiny	66.3	Attsa-Galaa'
Mattay		67.4	67.7	67.3	67.7	Bardanoha-Beni Ammar	67.0	Sable Shurqeyya
Maghagha		67.5	67.3	67.5	68.3	Nazlet Belhasa	67.2	Balhasa – Beni Khaled
Mallawi		68.2	67.5	68.1	68.9	Beni Khaled	67.2	Abo Galta
Governorate	Urban	-	37.2	-	67.7	Mattay	66.5	Samallout
	Rural	-	-	67.5	69.1	Monsha'et Badeiny	66.2	Attsa-Galaa'
	Total	67.4			68.2	Mallawi	67.1	Beni Mazar

Source : Population and health management in Menya.

Table (2-4-5-2) Highest and lowest 10 villages in the valve of the life expectation at birth indicator in years.

Highest 10 villages					*Lowest 10 villages*				
Markaz	***Village***	***Population no. in thousand***	***Age in years***	***Order***	***Markaz***	***Village***	***Population no. in thousand***	***Age in years***	***Order***
Samallout	Kom loufi	2.6	69.1	1.5		Attsa	11.1	66.3	346
	Monsha'et Badeiny	2.8	69.1	1.5		Galaa'	2.6	66.3	345
	Kolosna	19.4	69.0	3.5		Beiho	14.8	66.4	344
	Kom Raheb	9.0	69.0	3.5		Tawfeqeya	1.1	66.4	343
Mallawi	Beni Khaled	11.4	68.9	5.5	Deir Mowas	Tel Beni Omran	7.3	66.4	341
Samallout	Tarfa	15.7	68.8	8	Samallout	Taza'er	13.1	66.5	340
Mallawi	Om koms	13.0	68.8	8	Beni Mazar	Saft Abo garg	15.1	66.5	339
	Beni Hafez	1.7	68.8	8		Sandafa	13.7	66.5	338
Mattay	Berdnoha	15.3	68.7	10	Deir Mowas	Tel Beni Omran island	5.1	66.5	331

Source : Human Development Report 2003

Table (2-4-5-4) alive new born and death distribution among age in 2004 report.

Depart-ment	*Type*	*Alive new born*	*Age distribution of the deceased*							*Total deceased*	
			65 and above	50-less than 65 years	15-less than 50 years	5-less than 15 years	One year – less than 5 years	25 days less than one years	7 days – less than 25 days		
Menya	*Urban*	*Male*	2813	65	75	54	61	407	475	534	1617
		Female	2816	36	58	27	44	195	229	449	1038
	Rural	*Male*	7621	42	140	57	25	123	247	667	1301
		Female	7003	43	145	60	15	76	177	729	1245
Maghagha	*Urban*	*Male*	1215	23	19	15	15	78	61	117	328
		Female	1143	15	21	11	8	45	36	121	257
	Rural	*Male*	5888	21	142	46	19	102	207	443	980
		Female	5443	25	145	55	21	66	152	548	1012
Odwa	*Urban*	*Male*	551	5	15	5	10	26	16	48	125
		Female	483	6	15	2	3	8	8	66	108
	Rural	*Male*	2895	11	84	21	16	51	80	205	468
		Female	2750	17	93	26	6	37	55	270	504
Beni Mazar	*Urban*	*Male*	1218	28	28	10	13	69	103	147	398
		Female	1150	24	18	11	7	46	40	148	294
	Rural	*Male*	5865	13	87	37	19	95	213	507	971
		Female	5515	12	125	45	10	77	136	514	919
Mattay	*Urban*	*Male*	676	10	13	6	8	20	37	53	147
		Female	621	3	12	5	4	20	22	68	134
	Rural	*Male*	2911	19	52	10	8	46	136	287	558
		Female	2731	17	57	24	11	35	75	317	536

Depart-ment	Type	Alive new born	Age distribution of the deceased							Total deceased	
			65 and above	50-less than 65 years	15-less than 50 years	5-less than 15 years	One year – less than 5 years	25 days less than one years	7 days – less than 25 days		
Salallout	Urban	Male	1350	50	30	12	27	107	69	145	440
		Female	1225	34	12	14	10	48	36	155	309
	Rural	Male	7393	38	189	58	21	120	261	590	1277
		Female	7205	21	196	46	15	70	155	703	1206
Fekreya	Urban	Male	734	5	10	5	14	44	48	98	224
		Female	753	5	10	5	6	22	22	90	160
	Rural	Male	6142	18	122	49	14	90	182	531	1006
		Female	5788	25	140	49	12	78	137	563	1004
Mallawi	Urban	Male	1897	27	14	20	22	85	99	198	465
		Female	1795	19	20	9	11	56	50	235	400
	Rural	Male	8581	53	182	73	42	143	306	727	1526
		Female	8136	47	238	89	28	112	222	955	1691
Deir Mowas	Urban	Male	668	9	12	6	14	22	36	86	185
		Female	651	13	16	9	8	16	15	86	163
	Rural	Male	3868	20	73	28	9	48	143	371	692
		Female	3761	17	130	44	9	58	111	409	778
Total	Urban	Male	11122	222	216	133	184	858	944	1426	3983
		Female	10537	155	182	93	101	456	458	1418	2863
	Rural	Male	51164	235	1071	379	173	818	1775	4328	8779
		Female	48332	224	1269	438	127	609	1220	5008	8895
Total			**121155**	836	2738	1043	585	2741	4397	12180	24520

Source : Population and health management in Menya.

Table (2-4-5-6) no. of tumor patients (visiting cases) in Menya cancer center from January 2004 – June 2005.

Cases	Month	Cases	Month
January 2004	2804	February 2004	3321
March 2004	5253	April 2004	3959
May 2004	3807	June 2004	3959
July 2004	5040	August 2004	4204
September 2004	4104	October 2004	4186
November 2004	3598	December 2005	3634
January 2005	3557	February 2005	3634
March 2005	4224	April 2005	4133
May 2005	4283	June 2005	4424

Source : Population and health management in Menya.

Table (2-4-5-6) Typhoid cases during 2004.

S	Depart-ment / Month	Menya	Samallout	Mattay	Beni Mazar	Maghagha	Odwa	Fekreya	Mallawi	Deir Mowas	Total
1	January	0	1	0	1	0	3	0	0	1	6
2	February	0	0	1	3	1	2	2	5	4	18
3	March	1	3	0	4	1	10	1	4	2	26
4	April	1	2	1	9	5	11	0	5	4	38
5	May	0	0	0	16	16	16	2	7	11	68
6	June	7	2	3	13	14	14	5	15	22	95
7	July	13	7	0	17	5	9	6	16	8	81
8	August	6	7	0	14	14	11	4	11	13	80
9	September	4	6	2	19	10	12	6	10	4	73
10	October	3	7	0	12	7	15	3	22	6	75
11	November	2	1	0	6	4	9	8	6	3	39
12	December	0	0	0	2	2	9	2	2	1	18
Total		**37**	**36**	**7**	**116**	**79**	**121**	**39**	**103**	**79**	**617**

Source : Population and health management in Menya.

Table (2-4-5-8) total no. of Prosilla cases in Menya during 2004.

S	Depart-ment / Month	Menya	Samallout	Mattay	Beni Mazar	Maghagha	Odwa	Fekreya	Mallawi	Deir Mowas	Total
1	January	4	0	1	3	2	4	5	3	3	24
2	February	1	2	1	1	4	8	3	5	5	26
3	March	2	7	1	2	2	10	3	1	1	31
4	April	11	9	0	3	4	11	9	2	2	50
5	May	5	17	1	4	6	11	8	2	2	65
6	June	6	13	2	3	8	5	13	7	7	64
7	July	8	15	2	4	10	9	9	4	4	67
8	August	8	7	3	5	7	6	12	4	4	57
9	September	3	11	3	3	1	4	15	4	4	49
10	October	3	7	2	1	0	4	2	2	2	28
11	November	1	5	1	0	4	2	4	0	0	20
12	December	3	8	3	1	1	1	4	0	0	22
Total		**55**	**101**	**20**	**30**	**49**	**75**	**87**	**34**	**34**	**503**

Source : Population and health management in Menya.

Civil and cultural Heritage annex

Table (3-6-1-1) Record of Honor for Menya citizen's

No	Name	Notes	No	Name	Notes
1	Akhenaten	Egypt's Pharos, first who called for Unity	23	Ahmed Roushdy El Sanafery	One of People's champions Resistance In Malawi
2	Nefertiti	Akhenaten's wife and his partner for the invitation for Love	24	Dr. Khalil Abou Zaied	Leader of the champions Resistance in Dir Mawas city
3	Hour Moheb	Egypt's Governor in the era of the Modern state	25	Mr. Ali Pasha Sharawy	Sa'ad Zagloul companion in struggle
4	Imam Qurtubi	Author of "Whole interpretation of the Koran"	26	Mrs. Hoda Sharawy	Leading women's Renaissance in Egypt
5	Imam Kirafy	A mystic scientist	27	Dr. Taha Hussien	Dean of Arabic literature
6	Shiek Darouty	A mystic scientist	28	Mr. Hasan Tantawy Selim	Writer and historian
7	Imam Fouly	A mystic scientist	29	Mr. Ahmed Roushdy Saleh	Leading the popular literature
8	Sheik Mostafa Abdelrazik	One of the Azhar Sheik and Awqaf Minister	30	Dr. Ahmed Badawy	A late Minister of Culture
9	Sheik Ali Abdelrazik	One of the Azhar Sheik	31	Mr. Ali Baiumy	Writer and historian
10	Shiek Hasan Nawawy	One of the Azhar Sheik	32	Mohamed Elkhodary Abdelhamid	Sheikh of Egypt's literati in rural areas
11	Sheik Hasan Adawy	One of the Azhar scientist	33	The scientist/ Mohamed El Masry	A religious scientist
12	Sheik Mostafa Kayaty	A religious leader (in 1919 revolution)	34	Dr. Nour El Dien Tarraf	A late Minister of Health

No	Name	Notes	No	Name	Notes
13	Dr. Mahmoud Abdelrazik	From the People's champions Resistance in Menya city in 1919 revolution	35	Mr. Abdelhamid Abdelhalik	A late Minister of Awqaf
14	Shiek Mohamed El Marghany		36	Mr. Erfan Sief El Nasr	From the leaders of Malawi
15	Mr. Mahmoud Nasef		37	Mr. Adel Taher	A late Minister of Tourism
16	Mr. Hafez Momtaz		38	Ahmed Mousa Abou Haram	A late Minister of Justice, Shoura Council deputy
17	Mr. Mohamed Okasha		39	Mr. Ahmed Eldemerdash El Touny	A member in the International Olympic committee
18	Mr. Mohamed Ali Rahmy		40	Saied Pahsa Abdelmessieh	Participated in 1919 revolution
19	Mr. Mohamed Tawfiek Ismaiel		41	Mr. Adel Abdelaal El Gharhey	Ex. Shoura Council Deputy
20	Mr. Hasan Tarraf		42	Mr. Abdelsalam El Sherrief	Dean of Art Taste and Artistic criticism Institute
21	Shiek Ahmed Hatata		43	Dr. Souliman Mahmoud Husien	Holds the first Ph.D. from the Faculty of Sports education and a sports annonator
22	Mr. Reiad El Gamal				

Source of information: Tourism department in the Governorate

Potable Water Annex

Table (4-1-1) Service quality of potable water supply to the villages included in the study.

Village	*Approximate percentage of citizens connected to the potable network (taken from the national census date 1996)*	*No. of public faucets*	*Water source in the population cluster*	*Daily operating hours (hr/day)*
Nazlet gerges	28%	0	Hand pump	24
Memphis	28%	0	Hand pump	24
Kom mehrath	28%	0	Hand pump	24
Sheikh Tama	28%	0	The neighbour	24
Beni Ebeid	28%	0	Hand pump and public water faucet	24
Zawyet Hatem	28%	0	Hand pump and public water faucet	24
Sharouna	28%	1	The neighbour	8
Naslet Awlad El-Sheikh	28%	1	Hand pump and public water faucet	24
Kafada	28%	0	Hand pump and public water faucet	24
Bertobat	28%	2	Hand pump and public water faucet	24
Beni Khalaf	28%	2	Hand pump and public water faucet	24
Nag'e Markep	28%	0	Hand pump and public water faucet	24
Beni Roh	28%	1	Hand pump and public water faucet	24
Deir Barsha	28%	0	Hand pump	24

Source : inclusive layout of the governorate.

Table (4-1-2-1) Water stations in the governorate (cities and villages) and the types of these stations.

S	*Markaz*	*Water stations in cities*					*Water stations in the countryside*					*The sum*				
		Surface	*Slow sandy*	*Mobile*	*Developed*	*Artesian*	*Surface*	*Slow sandy*	*Mobile*	*Developed*	*Artesian*	*Surface*	*Slow sandy*	*Mobile*	*Developed*	*Artesian*
1	Odwa	-	-	2	-	-	-	-	1	2	6	-	-	3	2	6
2	Maghagha	1	-	-	3	5	2	-	1	1	12	3	-	1	4	17
3	Beni Mazar	2	-	3	1	3	1	-	1	1	12	3	-	4	2	15
4	Mattay	1	-	-	-	-	-	-	1	-	1	1	-	1	-	1
5	Samallout	1	-	4	-	6	2	1	1	-	26	3	1	5	-	32
6	Menya	4	-	3	1	-	-	2	1	-	31	4	2	4	1	31
7	Abo korkas	-	-	-	-	4	-	-	2	2	21	-	-	2	2	25
8	Mallawi	1	-	4	-	5	-	-	2	-	32	1	-	6	-	37
9	Deir Mowas	-	-	3	-	2	-	-	-	-	13	-	-	3	-	15
The sum		10	0	19	5	25	5	3	10	6	154	15	3	29	11	179
Total																**237**

Source : Potable and waste water company in Menya.

Table (4-1-2-2)

S	*Markaz*	*Source*	*Benefited places*			*No. of subscription*		
			City	*Village*	*Rench/ nag'e*	*City*	*Village*	*Rench/ nag'e*
1	**Menya**	1- Nazlet Hussein water operation	-	3	3	2	3761	11
		2- Sowada	-	3	1	-	1473	-
		3- Beni Mohammed soltan Hawasleya	-	10	4	12	6315	26
		4- Tala, Behdal and saft sharkeya	-	3	9	4	6267	53
		5- Damsheer	-	1	3	2	1555	4
		6- Edmo	-	1	3	-	918	1
		7- Aseer, Raslan and Beni Hasan	-	4	12	1	1871	2
		8- Tokh	-	1	6	1	1496	11
		9- Toh, Mahfouz, Asaka and saft Gharbeya	-	1	11	7	3389	27
		10- Saft Khemar, Abo Yacoub, Tahnasha, Dahab Kebleya, Deir Atyya and Bashkateb.	-	10	14	4	7787	57
		11- Zahra, Bergaya, saft Laban, Isma'elya, Beni Ahmed	-	6	6	2	6458	133
2	**Odwa**	1- Salakos	-	1	4	19	1480	-
		2- Sheikh Ma'oud	-	3	1	33	1977	10
		3- Monsha'et Abdullah	-	2	4	22	1329	3
		4- Kayat	-	2	3	22	1476	10
		5- Barmasha	-	3	4	28	1879	9
		6- Kasr Rakeib	-	4	10	43	1559	1

S	Markaz	Source	Benefited places			No. of subscription		
			City	Village	Rench/ nag'e	City	Village	Rench/ nag'e
3	maghagha	1- Sheikh zeyad	-	5	15	45	3393	19
		2- Zawyet Godamy	-	2	3	11	1349	4
		3- Sharouna	-	1	1	32	2397	25
		4- Gareera sharouna	-	2	-	11	1762	-
		5- Kafr Salheen	-	1	-	13	183	3
		6- Abo Beht	-	1	-	7	125	1
		7- Beni Lams	-	1	-	27	1479	31
		8- Deir Garnous	-	8	8	96	4744	55
		9- Sham Kabaleya, Beni Khalaf and Beni Khaled	-	3	5	57	2192	15
		10- Aba El-balad	-	2	6	52	3859	57
		11- Ebad Sharouna	-	3	4	40	2035	9
4	Beni Mazar	1- Tambo	-	3	3	13	1592	11
		2- E'to	-	1	3	10	1479	4
		3- Garnous	-	1	2	9	1344	7
		4- Shalkam	-	2	6	19	2374	14
		5- Bardanoha	-	3	4	18	1919	9
		6- Beni Ali	-	2	3	29	1636	25

S	Markaz	Source	Benefited places			No. of subscription		
			City	Village	Rench/ nag'e	City	Village	Rench/ nag'e
		7- Ebshak	-	3	-	15	2085	8
		8- Abo Garg	-	4	12	22	3249	34
		9- Gondeya	-	1	4	7	1577	23
		10- Sheikh Fadl	-	5	6	52	3100	77
		11- Nasereya	-	1	3	8	1713	33
5	Mattay	1- Mattay station	-	2	6	3	353	3
		2- Sheikh Hasan	-	1	5	9	337	2
		3- Artesian Abgag and Ali Basha	-	3	32	41	1409	6
6	Samallout	1- Albehyo	-	3	6	57	2739	17
		2- Etsa	-	2	7	55	2336	22
		3- Klousna	-	1	5	43	2380	35
		4- Gaza'er	-	1	-	15	1930	12
		5- Tawekeya	-	1	1	7	600	2
		6- Dafsh	-	2	12	16	1313	10
		7- Man kateen	-	3	10	41	3025	12
		8- Delkam	-	2	4	5	301	-
		9- Deir Samallout	-	1	-	6	576	2

S	Markaz	Source	Benefited places			No. of subscription		
			City	Village	Rench/ nag'e	City	Village	Rench/ nag'e
		10- Shousha	-	2	5	28	580	10
		11- Mohammed Semeda	-	1	8	9	733	19
		12- Teeba	-	2	9	33	2179	40
		13- Abo Sedhom	-	3	8	30	2231	8
		14- Beni Ghany	-	3	5	22	2256	26
		15- Monsha'et Bedeiny	-	3	3	6	815	4
		16- Monsha'et El-Sherely	-	5	9	27	3175	26
		17- Abo Toheir	-	1	9	4	249	1
		18- Taha El-Ameda	-	2	5	23	1550	15
		19- Nazlet Amodein	-	3	4	29	1043	17
		20- Hasan Basha	-	2	4	14	1180	21
		21- Yousef El-Adly	-	2	12	10	660	5
		22- Estal	-	1	1	19	1000	3
		23- Dakout	-	2	7	17	2500	17
		24- Katousha	-	1	5	16	995	6
		25- Sakyet Dakouf	-	3	9	12	1430	6
		26- Soleiba	-	3	-	12	377	1

S	Markaz	Source	Benefited places			No. of subscription		
			City	Village	Rench/ nag'e	City	Village	Rench/ nag'e
7	Abo korkas	1- First Group : (South of the city-middle of the city – North of the city – East of the city – Monsha'et De'bes – Makin – Nazlet Harz – Nazlet Greice – Beni Mohammed Sha'rawy – east and west Mansafees – Abyoha).	1	23	61	423	27150	823
		2- Second Group : (Beni Ebeid – Barba – Soltan Hasan – Kheyary – Al foka'y – Beni Mosa.	-	14	29	256	14782	71
		3- Third Group : (Mantout – Nazlet Asmant – Balnasora).	-	8	18	120	5263	37
		4- Fourth Group : (Beni Hasan Shrouk – the monuments – Noway rat).	-	2	6	53	3778	14
		5- Fifth group : (Eastern and western Sheeba – Ali Basha – Shaheen rench – El-Tal – Abdel Megeed seif El Nasr).	-	1	5	10	537	2

S	Markaz	Source	Benefited places			No. of subscription		
			City	Village	Rench/ nag'e	City	Village	Rench/ nag'e
8	Mallawi	1- Main station the arboretum on the Nile	1	-	3	339	23905	3875
		2- Galal El-sharkeya and Ma'sara	-	2	2	37	1429	45
		3- Rermoun and Bayadeya	-	2	4	29	2554	25
		4- Kalba	-	3	3	15	1011	33
		5- Noway	-	1	2	15	1920	20
		6- Ashmounein	-	2	1	33	2468	10
		7- Edka	-	2	2	33	1883	30
		8- Kalnadoul	-	1	7	33	3254	23
		9- Roda 1 and 2	-	1	4	30	2525	41
		10- Mahrus	-	1	-	20	2903	47
		11- Sheikh Ebada and Deir Barsha	-	3	2	77	6344	37
		12- Derwas and Sheikh Sheeba	-	2	1	45	2125	20
		13- Galal El-Gharbeya and Baraka	-	5	9	41	4191	40
		14- Tona El Gabal, Nazlet Tona El Gabal and Arein	-	4	6	78	3177	35
		15- Tenda and Om koms	-	3	6	92	4233	68
		16- Ebshadat – Beni Khaled – Barageel	-	7	4	85	5338	49
		17- Tokh – Beirum – Abo Khaluf	-	1	7	36	1426	13
		18- Haruz and sheeba	-	6	-	5	620	2

S	Markaz	Source	Benefited places			No. of subscription		
			City	Village	Rench/ nag'e	City	Village	Rench/ nag'e
9	Deir Mowas	1- The city and the Tal renches	-	-	12	181	9048	154
		2- Delga – Nag' Akoula – A'mak	-	2	4	85	5145	54
		3- Nazlet Badrman	-	2	3	40	2054	14
		4- Abo Khalaka	-	3	3	23	524	7
		5- Beni Haram	-	2	-	29	1591	7
		6- Asmo El-Arous	-	1	-	14	605	3
		7- Beirum	-	1	7	41	2134	12
		8- tokh	-	3	3	28	1955	13
		9- El Tal renches (rural)	-	3	-	24	1272	13
		10- Nazlel Sa'ed Hasaybeya	-	7	5	71	4874	33
		11- Tal Beni Omran	-	4	-	46	2129	14

Source : Potable and waste water company in Menya.

Table (4-1-3-1) water stations using the liquid and powder chlorine

S	*Markaz*	*S*	*operation*	*Type of station*	*Designed drain Liter/second*	*Actual drain Liter/second*	*Chlorine used*
1	Odwa	1	Developed Beni werkan	Mobile filter	80	60	Liquid chlorine for treatment
		2	Developed Beni amer	Mobile filter	80	60	Liquid chlorine for treatment
		3	Safanya	Mobile filter	27	20	Liquid chlorine for treatment
		4	Mobile 1 in the city	Mobile filter	27	20	Liquid chlorine for treatment
		5	Mobile 2 in the city	Mobile filter	27	20	Liquid chlorine for treatment
		6	6 artesian stations	Artesian	Ranging from 25:40 liter/second		Powder chlorine to sterilize the tanks
2	Maghagha	1	The main in the city	Surface filter	60	--	Liquid chlorine for treatment
		2	New Sharouna	Surface filter	40	--	Liquid chlorine for treatment
		3	Malateya	Surface filter	30	--	Liquid chlorine for treatment
		4	The developed on the Ibrahemia in the city	Mobile filter	80	--	Liquid chlorine for treatment
		5	The developed on the Nile	Mobile filter	80	--	Liquid chlorine for treatment
		6	Sharouna	Mobile filter	27	--	Liquid chlorine for treatment
		7	Zawyet El godama	Mobile filter	27	--	Liquid chlorine for treatment
		8	11 artesian stations	Artesian	Ranging from 40:80 liter/second		Powder chlorine to sterilize the tanks
3	Beni Mazar	1	Old main filter in the city	Surface filter	80	45	Liquid chlorine for treatment
		2	New filter in the city	Surface filter	400	200	Liquid chlorine for treatment
		3	Sandafa El far	Surface filter	40	25	Liquid chlorine for treatment
		4	The city mobile	Mobile filter	27	20	Liquid chlorine for treatment
		5	The developed on the Nile	Mobile filter	80	50	Liquid chlorine for treatment
		6	The developed in Sandafa	Mobile filter	80	50	Liquid chlorine for treatment
		7	13 artesian stations	artesian	Ranging from 25:40 liter/second		Powder chlorine to sterilize the tanks

S	*Markaz*	*S*	*operation*	*Type of station*	*Designed drain Liter/second*	*Actual drain Liter/second*	*Chlorine used*
4	Mattay	1	The main filter (Ali basha)	Surface filter	400	200	Liquid chlorine for treatment
		2	Sheikh Hasan	Mobile filter	27	20	Liquid chlorine for treatment
		3	13 artesian stations	artesian	40	20	Powder chlorine to sterilize the tanks
5	Samallout	1	The main in Samallout	Surface filter	90	75	Liquid chlorine for treatment
		2	Sararya	Surface filter	30	20	Liquid chlorine for treatment
		3	Sub 2	Surface filter	45	12	Liquid chlorine for treatment
		4	Gabal El teir convent (slow)	Surface filter	30	25	Liquid chlorine for treatment
		5	The city mobile	Mobile filter	27	20	Liquid chlorine for treatment
		6	Awaysa mobile	Mobile filter	27	20	Liquid chlorine for treatment
		7	Sararya	Mobile filter	27	20	Liquid chlorine for treatment
		8	25 artesian station	artesian	Ranging from 25:60 liter/second		Powder chlorine to sterilize the tanks
6	Menya	1	Northern main 1	Surface filter	240	230	Liquid chlorine for treatment
		2	New filter	Surface filter	80	60	Liquid chlorine for treatment
		3	Southern main 2	Surface filter	180	160	Liquid chlorine for treatment
		4	Kedwan	Surface filter	330	320	Liquid chlorine for treatment
		5	Mobile ard el mouled 3	Mobile filter	80	60	Liquid chlorine for treatment
		6	Abo felio	Mobile filter	27	20	Liquid chlorine for treatment
		7	Tahna El Gabal (slow)	Mobile filter	30	25	Liquid chlorine for treatment
		8	Zahra station	Mobile filter	30	25	Liquid chlorine for treatment
		9	30 artesian stations	artesian	Ranging from 15:80 liter/second		Powder chlorine to sterilize the tanks
7	Abo Korkas	1	Abioha	Mobile filter	27	20	Liquid chlorine for treatment
		2	Beni Hasan El shourouk	Mobile filter	15	10	Liquid chlorine for treatment
		3	Makin	Mobile filter	27	20	Liquid chlorine for treatment
		4	24 artesian stations	artesian	Ranging from 25:80 liter/second		Powder chlorine to sterilize the tanks

S	*Markaz*	*S*	*operation*	*Type of station*	*Designed drain Liter/second*	*Actual drain Liter/second*	*Chlorine used*
8	Mallawi	1	The main in the city	Surface filter	80	50	Liquid chlorine for treatment
		2	2 mobile on ibrahemia	Mobile filter	52	30	Liquid chlorine for treatment
		3	2 mobile on the Nile	Mobile filter	54	30	Liquid chlorine for treatment
		4	Roda mobile	Mobile filter	27	20	Liquid chlorine for treatment
		5	Kalandoul mobile	Mobile filter	27	20	Liquid chlorine for treatment
		6	22 atersian stations	artesian	Ranging from 25:80 liter/second		Powder chlorine to sterilize the tanks
9	Deir Mowas	1	Main in the city (2 units)	Mobile filter	54	20	Liquid chlorine for treatment
		2	13 artesian stations	artesian	Ranging from 25:90 liter/second		Powder chlorine to sterilize the tanks

Source : Potable and waste water company in Menya.

Table (4-1-3-2) water stations that use chlorine gas and solid and liquid alum

markaz	*S*	*Operation*	*Chlorine gas*	*Solid alum*	*Liquid alum*
Odwa	1	Egyptian mobile filtration station no.1	√	√	
	2	American mobile filtration station no.2	√	√	
	3	Mobile filtration station in beni warkan village	√	√	
	4	Mobile filtration station in safania village	√	√	
	5	Improved filtration in Beni Amer	√	√	
Maghagha	1	Main filtration station of Maghagha city	√	√	
	2	Filtration station in new Sharouna	√	√	
	3	Filtration station in Malateia	√	√	
	4	Improved station on Ibrahemia in the city	√	√	
	5	Improved station on the Nile in the city	√	√	
	6	Mobile filtration station in Sharouna island	√	√	
	7	Mobile filtration station in Zawyet Godama	√	√	
Beni Mazar	1	Main filtration station of Beni Mazar city	√		√
	2	New filtration station in the city West of the Nile	√	√	
	3	Main filtration station in Sandafa El-far	√	√	
	4	The city mobile	√	√	
	5	The improved on the Nile	√	√	
	6	Improved mobile filtration station in Sandafa	√	√	
	7	Filtration station in Sheikh Fadl village	√	√	
Mattay	1	Main filtration station in Mattay	√		√
	2	Filtration station in Sheikh Hasan village	√	√	

markaz	*S*	*Operation*	*Chlorine gas*	*Solid alum*	*Liquid alum*
Samallout	1	Main surface filtration station in Samallout	√	√	
	2	Surface filtration station in Sararya	√	√	
	3	Surface filtration station in Gabal El Teir convent	√	√	
	4	Surface filtration station in Kherregeen village	√	√	
	5	Mobile filtration surface no.1 in the city	√	√	
	6	Mobile filtration surface no.2 in the city	√	√	
	7	Mobile filtration station in Awaysa	√	√	
	8	Mobile filtration station in Sararya village	√		
Menya	1	Main filtration station no.1 north the city	√		√
	2	Filtration station south the city	√		√
	3	Northern improved filtration station	√	√	
	4	Filtration station in Kedwan	√		√
	5	Filtration station in Tahna El gabal	√	√	
	6	Filtration station village no.7	√	√	
	7	Filtration station in Zahra	√	√	
	8	Filtration station in Ard El Mouled	√	√	
	9	Filtration station east the Nile (Abofelio)	√	√	
Abo korkas	1	Abioha	√	√	
	2	Improved Beni Hasan El shourok	√	√	
	3	Makin	√	√	

markaz	*S*	*Operation*	*Chlorine gas*	*Solid alum*	*Liquid alum*
Mallawi	1	Main filtration station in Mallawi city	√	√	
	2	The americam mobile on the ibrahemia no.1	√	√	
	3	Mobile filtration on the Nile no.1	√	√	
	4	Mobile filtration on the Nile no.2	√	√	
	5	Kalandoul mobile	√	√	
	6	Roda mobile	√	√	
Deir Mowas	1	Main filtration station in the city (2 units)	√	√	

Source / Potable and Waste water Co. in Menya

Table (4-1-3-3) Land and higher potable water reservoirs and its capacity in Menya.

S	*Markaz*	*No. of land reservoirs*	*Capacity in m^3*	*Higher reservoirs*	*Capacity in m^3*
1	Menya	7	18120m^3	37	18310m3
2	Odwa	5	800 m^3	10	2000 m3
3	Maghagha	5	1200m^3	19	3800m^3
4	Beni Mazar	2	5300m^3	15	3000m^3
5	Mattay	6	5000m^3	16	2390m^3
6	Samallout	5	1850m^3	30	6570m^3
7	Abo korkas	4	800m^3	34	6660m^3
8	Mallawi	7	1550m^3	33	5840m^3
9	Dei Mowas	3	600m^3	12	3150m^3

Source : Potable and waste water company in Menya.

Table (35) Analyzation results of potable water samples (water quality observation) for June 2005 as an example.

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Samallout	1/6	A house in shereley network	23.5	7.46	1.90	248	588	328	0.05	-	15/100	Bacteriologically inconsistent
		A house in kamadeer network	22.7	7.52	0.75	244	587	331	0.02	-	18/100	Bacteriologically inconsistent
		Neew western well at youssef El-Adl	22.4	7.62	0.27	204	521	249	0.02	-	<1/100	
		Old western well at youssef El-Adl	23.4	7.80	1.70	152	481	229	0.35	-	<1/100	
Menya	1/6	Old mawy in Behdal	27.9	7.27	0.56	260	727	347	0.61	-	<1/100	
		Behdal network, main st.	28.2	7.21	0.53	280	728	349	0.09	-	<1/100	
		After processing in Tala	26.6	7.27	0.15	380	920	443	0.005	-	2/100	
		Before processing mawy no. 1	25.9	7.30	0.77	400	976	472	0.25	-	<1/100	
		New Mawy in saft sharkeya	25.2	7.22	1.71	440	889	728	0.11	-	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Beni Mazar	2/6	Western well of Abo Gerb	30.24	7.77	0.09	500	1627	797	0.006	-	<1/100	i.c. due to increase in hard water
		Saft Abo gerg network	23.8	7.87	0.01	500	1609	786	0.001	-	<1/100	i.c. due to increase in hard water
		Tambo well	24.1	7.85	0.36	500	1742	858	0.64	-	<1/100	i.c. due to increase in hard water
		Southern Ebsak well	24.2	7.91	0.56	480	1340	651	0.64	-	<1/100	
		Well no. 2, western Beni Ahmed	24.7	7.76	0.09	480	1339	651	0.41	-	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Menya	4/6	Well no. 2, western Beni Ahmed	24.9	7.34	0.26	404	1182	574	0.54	-	<1/100	
		Well no. 1, western Beni Ahmed	24.8	7.57	3.80	448	1256	610	3.41	-	<1/100	
		New well at Beni Mohammed Soltan	24.6	7.67	1.5	284	997	482	0.39	-	<1/100	
		Old well at Beni Mohammed soltan	24.0	7.65	0.12	288	934	450	0.35	-	<1/100	
		Beni Mohammed Soltan network	24.3	7.75	0.22	216	714	343	0.03	-	<1/100	
Mallawi	5/6	Terminal of Roda station	18.5	7.90	1.70	120	297	140	-	1.5	<1/100	
		A house in Roda network	17.8	7.30	0.87	320	890	426	-	-	<1/100	
		Well no. 2 at Roda	16.2	7.70	0.47	392	927	447	-	-	<1/100	
		Terminal of Kalnodi station	16.3	7.90	1.70	140	295	141	-	1.1	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
		Kalnodi network	16.8	7.60	1.10	120	299	143	-	-	<1/100	
Abo korkas	7/6	Greice network	19.2	7.63	0.60	520	1257	612	-	-	<1/100	
		Western well, mantout operation	19.9	7.23	3.50	480	1172	570	-	-	<1/100	
		Northern well, mantout operation	19.4	7.77	4.60	560	1392	678	-	-	<1/100	
		Sourthern welly Nazlet Asmant	20.1	7.60	3.50	240	735	352	-	-	7/100	i.c. bacteriologically
		Western well, Nazlet Asmant	18.9	7.60	5.40	400	1123	545	-	-	<1/100	i.c. due to increase in hard water
Samallout	8/6	Delkam well	22.1	7.70	0.75	360	1181	567	-	-	<1/100	
		Delkam network Manara rench	20.8	7.67	0.12	260	1062	566	-	-	<1/100	
		Well no. 2, Abo sedhom	20.4	7.71	0.13	380	967	463	-	-	<1/100	
		Abo Sedhom network, Tarfa El-kom	20.8	7.49	0.17	368	975	463	-	-	<1/100	
		Well no. 1, Dakouf	20.5	7.59	0.20	400	1448	694	-	-	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Menya	9/6	Southern well in bashkateb operation	17.5	7.70	0.77	320	849	409	-	-	4/100	i.c. bacteriologically
		Northern well, bashkateb operation	14.8	7.90	3.12	320	775	374	-	-	3/100	
		Western well, Abo Yacoub operation	14.4	7.75	5.24	200	511	243	-	-	3/100	
		Southern well, Abo Yacoub operation	15.6	7.82	4.49	320	510	244	-	-	4/100	
		Damsha and Hashim network	16.5	7.71	0.20	340	873	421	-	-	10/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Mallawi	11/6	Well no. 1, mahras mawy	16.5	7.71	3.77	368	1178	571	0.31	-	<1/100	
		mix. of wells no. 2, 3, mahras operation	11.8	7.70	5.55	392	11999	5776	0.34	-	<1/100	i.c. due to increase in turbidity
		Well no. 1, no way operation	22.9	7.68	2.38	424	11009	5300	0.19	-	<1/100	
		Well no. 2, no way operation	24.2	7.69	1.40	360	7799	381	0.53	-	<1/100	
		Well no. 3, Ashmounein operation	22.5	7.78	2.61	392	1310	637	0.26	-	<1/100	
		Mix. of wells 1 and 2 Ashmounein operation	22.5	7.79	2.60	392	1316	632	0.27	-	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Menya	12/6	Italian well at saft gharbeya.	25.5	8.14	0.56	240	438	210	0.18	-	<1/100	
		New chineese well at saft gharbeya	25.5	8.04	0.96	242	580	279	0.35	-	<1/100	
		Old well in azaka operation	22.8	8.14	1.50	180	443	211	1.26	-	<1/100	
		New well in azaka operation	22.9	8.63	2.80	182	652	314	0.36	-	13/100	
Samallout	14/6	Samallout operation well	23.6	7.60	0.50	204	543	260	0.15	-	<1/100	
		Deir Mowas network	22.6	7.78	0.44	200	558	266	0.11	-	<1/100	
		Badeiny operation well	22.4	7.65	0.42	240	684	332	0.13	-	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Beni Mazar	15/6	Ashrouba network (house)	24.5	7.77	0.81	300	884	432	-	-	<1/100	
		Well no 1, Berdona	23.9	7.78	1.53	260	790	380	-	-	<1/100	
		Well no. 2, Berdona	24.2	7.82	1.25	232	789	379	-	-	<1/100	
		A'edo operation well	24.5	7.60	2.20	120	977	472	-	-	<1/100	
Beni Mazar	18/6	Beni Ali operation well	19.4	7.59	5.62	484	1405	686	-	N/A	<1/100	i.c. due to increase in turbidity
		Beni Ali network (house)	18.4	7.77	4.71	496	1393	678	-	N/A	<1/100	
		Well no. 1 northern mawy, shalkam	18.7	7.52	0.37	200	710	341	-	N/A	<1/100	
		Mix of southern mawy wells (no. 2 & 3)	18	7.86	0.59	152	659	317	-	N/A	<1/100	
		Shalkam network	19.9	7.86	0.38	160	724	348	-	N/A	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Samalout	19/6	Abo Toheir operation well	21.6	7.347	0.13	278	632	303	-	N/A	3/100	
		Teiba operation well	19.4	7.55	0.19	256	957	463	-	N/A	<1/100	
		Network from Ibrahim rench	19.3	7.58	0.23	254	961	464	-	N/A	<1/100	
		Western well of Edmo operation	28.2	7.69	0.76	200	443	210	-	N/A	<1/100	
Menya	20/6	Edmo network	28.9	7.70	1.01	228	453	215	-	N/A	<1/100	
		Mahfouz rench operation	28.1	7.75	1.09	388	868	417	-	N/A	<1/100	
		Mahfouz rench network	28.8	7.76	3.24	280	856	410	-	N/A	<1/100	
Menya	23/6	Sand filter of Zahraa station	21.1	7.90	0.83	120	306	147	-	1.3	<1/100	
		Zahraa artesian station	19.8	7.83	3.46	400	1115	541	-	N/A	<1/100	
		A house near shaky	19.7	7.82	4.47	200	500	239	-	5	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Abo korkas	25/6	Southern well of noway rat operation	25.4	7.52	3.51	368	863	416	-	N/A	<1/100	
		Noway rat network	25.6	7.54	4.51	372	866	416	-	N/A	<1/100	
		Eastern well of Beni Hasan operation	26.1	7.53	3.89	260	759	364	-	N/A	<1/100	
		Mix of the two monumental wells of Beni Hasan	28.2	7.54	3.58	332	758	363	-	N/A	<1/100	
		Beni Hasan monuments network	26.2	7.49	4.01	352	759	364	0.3	N/A	<1/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Abo korkas	26/6	Eastern mensafees operation well	25.0	7.70	0.38	260	648	310	0.2	N/A	<1/100	
		A house from western mensafees network	25.6	7.76	0.16	260	653	312	0.4	N/A	<1/100	
		Beni Mohammed Sha'rawi operation well	25.6	7.68	2.50	360	880	425	0.4	N/A	<1/100	
		A house from Beni Mohammed Sha'rawy network	25.7	7.08	4.40	352	879	429	0.3	N/A	<1/100	
Beni Mazar	27/6	Abol Abbas Mosque	27.2	7.49	0.28	228	796	382	0.8	N/A	14/100	
		Berdona operation	26.0	7.69	1.77	272	791	380	-	N/A	13/100	

Markaz	*Date*	*Sample location*	*Temperature*	*pH*	*Turbidity*	*Hard water mg/L*	*Electrical conductivity*	*Dissolved minerals*	*Iron mg/L*	*Remained chlorine mg/L*	*Bacteriological examination*	*Final results*
		Allowed limits		***6.5-9.5***	***5.00***	***500***	***1500***	***1200***	***0.3-1.0***	***<3***	***<3/100ml***	
Abo koras	28/6	Eastern well of Mansheyet De'bes operation	26.1	7.40	1.07	320	838	402	-	N/A	<1/100	
		De'bes network	27.0	7.48	0.86	336	838	403	-	N/A	<1/100	
		Mix. of wells of northern Abo korkas station	27.0	7.63	0.38	192	467	248	-	N/A	<1/100	

Table (38) specifications and standards of the potable water and domestic use water

specification	*Max. allowed limit*
First: the natural specifications	
color	20 – 30 as a max. limit on the cobalt platinum scale
Taste	Acceptable
Odor	None
Turbidity	5 jackson units or equivalent for the filtered water, and 10 units for the ground and the mixed water.
PH	6.5 – 9.2
Second: non organic substances that affects its acceptance and the domestic use	
Dissolved substances at 120C	1200mg/liter
Iron	0.3mg/liter for the filtered water
	1mg/liter for the ground and the mixed water
Manganese	0.1 mg/liter for the filtered water
	0.5 mg/liter for the ground and the mixed water
Copper	1 mg/liter
Zinc	5 mg/liter
Total hardness	500 mg/liter
Calcium	200 mg/liter
Magnesium	150 mg/liter
Sulphates	400 mg/liter
Chlorides	500 mg/liter
Sodium	200 mg/liter
Aluminum	0.2 mg/liter
Calcified balance	+ / - 0.1
Third: chemical substances affecting public health	
Lead	0.5 mg/liter
Arsenic	0.5 mg/liter
Cyanide	0.5 mg/liter
Cadmium	0.005 mg/liter
Mercury	0.001 mg/liter
Chrome	0.05 mg/liter
Nitrates	10 mg/liter
Nitrites	0.005 mg/liter
Florides	0.8 mg/liter
Chlorine	20 microgram/liter
Decarb	10 microgram/liter
Drindideen	0.03 microgram/liter
Atrazin	2 microgram/liter
Pentazon	30 microgram/liter
Carbofeoran	5 microgram/liter
Chlordane	0.2 microgram/liter

specification	*Max. allowed limit*
Chlorotopheon	30 microgram/liter
D.D.T.	2 microgram/liter
Dipromochlorobrobane	1 microgram/liter
4.2D	30 microgram/liter
2.1 Dipromochlorobrobane	20 microgram/liter
3.1 Dipromochlorobrobane	20 microgram/liter
Hexachlorobenzene	1 microgram/liter
Izoptereone	9 microgram/liter
Lendan	2 microgram/liter
M C B A	2 microgram/liter
Menoxychlorine	20 microgram/liter
Menolachlorine	10 microgram/liter
Dermetreen	20 microgram/liter
Propanyl	20 microgram/liter
Semazene	2 microgram/liter
D.B	90 microgram/liter
Dichloroprobe	100 microgram/liter
Phenoprobe	9 microgram/liter
Microprobe	10 microgram/liter
2,4,5,T	9 microgram/liter
	In addition to the other organic substances determined In the standards approved by the Higher Committee of Water such as the disinfectants, total hydrocarbons Except benzene, chloroethan compounds.
Microbiological Standards	
Total no. of bateria	Not more than50 cell/cm at 37C for 24 hrs
Contamination proofs	Not more than50 cell/cm at 22C for 48 hrs 95% of the samples (during one year) are Totally free from colonic bacteria an the 100cm . any sample doesn't contain more Than 3 cells/100cm provide that such thing Is not repeated in two consecutive samples From the same source.
Biological examination	Samples are totally free from stool nodular Bacteria. Samples should be completely free from Protozoa and all disease-causing worm Stages, as well as greenish blue alga.
Radioactive substances	Derivatives of alpha (A) 0.1 microcury/liter
	Derivatives of Beta (B) 1 microcury/liter

Source/ population and health management in Menya

Table (45) Analyzation results of waste water samples 2005.

S	*Treatment station*	*Date*	*Temperature*	*pH*	*Precipitated substances*	*Dissolved substances*	*Suspended substances*	*Consumed active oxygen*	*Consumed chemical oxygen*	*Dissolved oxygen*	*Fats and oils*	*Total organic carbon*	*Ulphates*	*Remained free chlorine*	*Probable no. of clonic group for every 100 cm^3*
1	Abo korkas	14/5	28.4	7.27	0.1	996	40	33	48	4	7	-	0.3	1.1	3960
2	Menya	21/5	25.8	7.29	0.5	832	61	99	140	3.33	34	-	1	0.9	5683
3	Abo korkas	6/6	27.2	7.63	0.1	839	28	30	47	5	6	-	0.4	1	2990
4	Menya	13/6	26.4	7.63	1.2	825	84	105	193	0.46	13	-	0.4	0.8	5630
5	Abo korkas	21/6	27.2	7.51	0.2	778	29	29	54	5.52	9	-	0.4	0.5	3870
6	Menya	4/7	29.4	7.06	0.5	652	120	119	97	0.72	11	-	0.52	0.6	5090
7	Abo korkas	16/7	27.6	6.8	0.1	768	26	36	43	5.2	8	-	0.2	1	3250
8	Menya	19/7	27.3	6.8	0.5	658	120	88	140	1.06	11	-	0.52	0.6	5060
9	Abo korkas	1/8	29.8	6.23	0.1	750	36	30.6	33	5.27	7	-	0.3	0.7	2964
10	Menya	6/8	30.2	6.58	0.5	741	56	86	107	1.34	11	-	1.34	0.2	5185
11	Abo korkas	9/8	27.6	6.89	0.1	836	8	16	31	4.53	7	-	0.3	0.7	2732

Source : Potable and waste water company in menya.

Urban environment annex

Table (5-4-1) Land use in New Menya city

Activity	Area	Ratio
Residential area	1418 acres	41%
Services area	671 acres	12%
Green areas	871 acres	30,2%
Tourism areas	135 acres	4%
Technical areas	50 acres	1,6%
Entertainment areas	115 acres	3,7%
University areas	234 acres	7,5%
Total	**3200 acres**	**100%**

Source of information: New Menya city Agency

Table (5-4-2) Land use distribution in New Menya city (first stage)

Usage	Area	Ratio
Residential area	646	58%
Houses services areas	161,64	14,5%
Main roads for the city and neighborhoods	150	13,5%
Central services	97,55	8,8%
Green and entertainment areas	57,2	5,2%

Source of information: New Menya city Agency

Table (5-6-1) reading and writing rate (age+15) in Menya Governorate in 203

Markaz (Locality)		*Total in Markaz*	*Urban*	*Rural*	*Villages of Markaz*			
					MAX limit		*MIN limit*	
					%	*Village*	*%*	*Village*
Menya		67,7	85,6	56,8	80,8	Maqousa	26,0	Hahya
Abou Korkas		50,0	75,5	45,3	77,7	El Sahala	25,7	Saqiat Mousa
Odwa		46,3	57,8	45,1	60,6	Ba'en El Elem	26,8	Kaf Ma'ari
Beni Mazar		51,1	70,3	47,3	72,8	Husainia	12,2	El Salam
Dir Mawas		48,8	61,1	46,7	76,9	Nazlat Mohamed Samhan	28,8	Za'abara
Samallout		50,2	71,2	45,3	69,5	El Awaisa	26,5	Ibrahim
Mattay		53,9	69,7	49,8	64,7	Abou Shehta	24,7	Emag Hatab
Maghagha		52,0	74,0	46,3	66,8	Nazlat Belhasa	13,0	Sharouna
Mallawi		58,9	87,4	38,3	55,5	Arien Bahry	19,5	Shiek Sebika
Governorate	Urban	---	80,2	---	87,4	Malawi	57,8	Edwa
	Rural	---	---	46,7	80,8	Maqousa	12,2	Salam
	Total	55,5			67,7	Menya	41,3	Edwa

Source of information: results according to the indicators, in the Human development report annex for the governorate in 2005

Table (5-6-2) Total schools, classrooms and students in different stages in Menya governorate

Stage	*Number of schools*	*Number of classrooms*	*Number of students*		
			Boys	*Girls*	*Total*
KG	196	513	7767	6747	16209
Primary	1022	12796	304195	253355	575738
Pre secondary	438	4284	102343	76892	177068
Public secondary	73	1298	30000	23009	53564
Technical secondary 3/ 5 years	23	1529	39975	25574	67716
Commercial secondary 3/5 years	12	728	7404	24273	33708
Agriculture secondary	6	538	22140	65	22634
1 classroom	286	1395	51	8841	9344
Special education	27	154	977	379	1410
Total	2082	23235	514852	419135	957391

Source of information: Information Center in the Governorate

Agriculture annex

Table (6-1-1-1) Distribution of agriculture ownership in Menya governorate

Ownership categories	*Owners*		*Total area*		*Social levels*
	Number	*%*	*Area in acres*	*%*	
Less than 1 acres	169658	65%	85715	19,5%	Low 90%
1- less than 3 acres	65314	25%	114465	26,1%	
3- less than 5 acres	15114	5,7%	53675	12,3%	Medium 8,7%
5- less than 10 acres	7905	3%	52874	12,1%	
10 acres and more	3284	1,3%	131227	30%	High 1,3%
Total	261275	100%	437956	100%	

Source of information: Agriculture directorate, Information Center in Menya governorate

Table (6-1-3-1) Total area planted with main fruit in Menya governorate

Crops	*Planted area (acres)*	*Production (Ton)*
Grapes	19702	170481
Citrus	3878	25541
Mango	616	1899
Banana	1981	19998
Figs	408	2305
Guava	386	1837
Pomegranate	20	80
Apricot	15	24
Pears	8	26
Apple	144	8930
Peach	4	14
Olive	14	56

Source of information: Investment guideline, Agriculture directorate

Table (6-1-3-2) Total areas planted with main fruits in the Governorate in the year 2006

Products	*Inside the valley*		*Outside the valley*		*Total area in Acres*
	Ton	*Acres*	*Ton*	*Acres*	
Grapes	14	18907	3	506	19413
Citrus	10	3751	21	675	4397
Banana	5	1949	12	89	2038
Mango	12	550	11	637	1187
Figs	17	377	21	76	453
Guava	19	127	9	353	488
Pomegranate	11	9	12	94	104

Source of information: Agriculture Directorate in Menya

Table (6-1-3-3) Important medical and Aromatic herbals and planted areas in the governorate in 2002/ 2003

No	*Crops*	*Planted area in acres*	*Annual Productivity in Ton*
1	Black cumin	37	18
2	Chamomile	5	2
3	Cumin	2621	1409
4	Marjoram	1316	1195
5	Caraway	1393	887
6	Safflower	145	69
7	Basil	40	40
8	Coriander	13748	10303
9	Shamer	32	31
10	Anise	928	482
11	Mint	7	40

Source of information: Investment guideline, Agriculture directorate

Table (6-1-3-4) list for Medical and Aromatic herbals (inside and outside reclamation lands) in 2005/ 2006

No	*Crops*	*Planted area in acres*	*Annual Productivity in Ton*
1	Black cumin	11691	---
2	shamer	120	---
3	cumin	2155	---
4	Marjoram	1418	1649
5	Anise	1161	4
6	Mint	17	---
7	Caraway	1412	421
8	Black cumin	2	---
9	Safflower	30	180
10	Thyme	4	---
11	Basil	---	65

Source of information: Agriculture directorate

Industry annex

Table (6-3-2-1) Estimated cost for infrastructure establishment for the area

Activity	*Estimated cost (Million L.E)*	*Specialized and implemented finance (Million L.E.)*	*Future requirements (Million L.E.)*
Potable water	45	35,165	9,835
Sewage	45	22,97	22,70
Electricity	58	21,273	31,726
Paving roads	32	15,546	16,454
Administrative buildings	15	7,675	7,325
Telephones	Implementation at the expense of the National authority for wired cable and wireless communication		
Total	195	103,63	92,37

Source of information: Industrial area development Agency in Menya

Table (6-3-3-1) big industrial plants in the governorate

S	*Plant*	*Raw materials Used*	*Product*	*No. of workers*	*Wastes*	*Method of Disposal*	*Water sources*	*notes*
1	Sugar and Integrated industries Company in Abo Korkas	Sugar cane, beet	Sugar, alcohols, yeast	1540 worker	Vapors, Solvents Liquid flying Organic sub. (contaminated Water), solid Subs.(beet Pulp), cane Wastes, junk	Treated through the Industrial drain and Used in the organic Fertilizers industries. The pulp is dried and Pressed and used in Fodder. Cane wastes Is used as fuel or Organic fertilizer. The Junk is sold	Ibrahemia Canal	Industrial Drain: the Drain of the Factory goes To closed Circuits (cooling towers There is a Biological Treatment unit That holds 40m /hr only.
2	Middle Egypt Co. fo Spinning & Textile (Menya spinning Factory)	Cotton piles, Polyester piles, Acrylic piles	Spinning Threads for Textile industry	600	Dust, exhaust Worn out straps, iron, Tin, plastic, Wires	Electronically Operated air filters. It is collected in the Exhaust basemen, Then sorted and Pressed in piles	Pump station That works by 3 electrical Motors	No industrial Drainig
3	Nile Co. for cotton Ginning in Menya	Raw cotton, Soy bean, Cotton seed, Maize, Lime stone, Molasses	Oil, geeh, Fodder, tin Soap	456 Male 51 Female	Cotton seed Crust	Made as fodder and Sold	--	Branches: Geeh factory Tin factory Oxygen factory Fodder Factory
4	Industrial co. for Developing Sa'ed in	Textiles, Threads	Clothes for Export	300	Thread and Cloths Remains, Plastic	The cloths remains Are sold. The plastic Is dumped	Industrial Zone water Station	Private sector Absence of Industrial Drain

S	*Plant*	*Raw materials Used*	*Product*	*No. of workers*	*Wastes*	*Method of Disposal*	*Water sources*	*notes*
5	Iron and Steel factory In beni Khaled, Samallout (stone Quarry sector)	Lime stone	Cutting the lime Stone into pieces And sent to the Iron and steel Factory in Helwan	295	Milkozes P1 Dust	Dust is collected near The Nile and sprayed With water	The Nile	Absence of Industrial Drain. Business Sector
6	White cement Factory	Caoline sub., Lime stone, Sand, natural Substances	White cement	289	Liquid Subs. (sewage) Solid subs. (dust)	Waste water is treated Through analyzing Rooms, then gardens Irrigation. Filters are Used to collect dust That is used in Street pavement.	Beni Khaled Station	Some of the Dust is used in Glass industry Absence of Industrial Drain
7	Egyptian Co. for Cotton ginning	Raw cotton	Ginned cotton	250	Cotton seed Dust, worn Out belts	Dust is sucked. Cotton Seed is sold for Squeezers	Industrial Zone Water station	There is Industrial Drain.
8	Pepsi Cola factory In Samallout	Carbonated Water, sugar, Lemon, Caramel Phosphoric acid	Pepsi Cola, Mirenda, 7 up	248	Liquid, solid (broken glass Plastic, bottle cover	Treated and pass Through special Path ways. Solid Wastes are sold for Reuse	Artesian well	There is Industrial drain Liquid wastes Are treated and Used in Irrigation
9	Nasr Co. for drying Agricultural products	Onion and Garlic	Dried grated Onion, dried Grated garlic	200	Onion Peelings, Washing Water	The peeling Is sold as Fodder, and The water is Drained in Ibrahemia Drain	Artesian well	The co. follows The business Sector. The Production line Is composed of Four automated Satges.

S	*Plant*	*Raw materials Used*	*Product*	*No. of workers*	*Wastes*	*Method of Disposal*	*Water sources*	*notes*
10	Botagas packing Station in shousha Samallout	Botagas gas (ethylene)	Filling the Cylinders with gas	165	There are no Wastes	-----	Artesian well	The industrial Waste is the Cooling water And is used in Irrigating Gardens. Governmental Sector.
11	A factory in Maghagha	Onion, garlic, Tomato, Marjoram Min, Rocket, coriander	Dried onion, Dried garlic, Dried tomato, Dried plants	150	Onion Peeling, Drying wastes	Sold as cattle fodders, Or as fertilizer	Maghagha Water station	The industrial Wastes is Washing water That is drained In the water Paths
12	Cotton ginning Co. In Samallout	Cotton	Ginned cotton	36 full Time, 100 Seasonal	Cotton dust, Cotton seed dust	Dust is sucked. Seeds Are sold for Squeezers or as fodder	Ibrahemia canal	Absence of Industrial Draining and Presence of Sewage (business Sector)
13	Medicine preparing & Packing factory in Menya	Plant materials, Water, alcohols, Vaseline, Chemical substances	Ointments, Solutions Mixtures for Sugar testing in The blood	72	Damaged Glass packs	Sold as junk	Menya Station	Absence of Industrial Drain
14	El- Wadi Co. For cotton ginning	Raw cotton	Hair cotton	58	Cotton seed Dust	Dust is sucked. Seeds Are sold for Squeezers or as Fodder	Menya Station	Absence of Industrial Drain

S	*Plant*	*Raw materials Used*	*Product*	*No. of workers*	*Wastes*	*Method of Disposal*	*Water sources*	*notes*
15	Roots Co. for drying And processing Vegetables in Maghagha	Onion, garlic, Tomato, Cabage	Dried onion, Dried garlic, Extracting Aromatic Oils	50	Onion and Garlic Peelings and Other	Sold as fertilizers and Fodders	Industrial Zone Water station	The industrial Wastes is Washing water That is drained In the water Paths
16	Unified Co. for Cotton spinning in New Menya	Ginned cotton And threads	Cotton threads	36	Dust, worn Out belts	Dust is collected,and The belts are sold	Industrial Zone Water station	Absence of Industrial Drain
17	North Sa'ed Co. for Industry investment In new Menya	Raw cotton	Hair cotton	32	Cotton seed Dust, worn Out belts	Dust is sucked. Seeds Are sold for Squeezers or as Fodder	Industrial Zone Water station	Absence of Industrial Drain, but There is a Reservoir inside The factory
18	Cloths factory in new Menya	Fabrics	Cloths	20	Fabrics Left overs	Sold	New Menya Water Station	Absence of Industrial Drain (private Sector)
19	Mary macaroni factory In new menya	Flower, water, Salt	Various forms Of macaroni	16	Dust, Macaroni Fractions	Dust is sucked and The fractions are Sold as fodders	New Menya Water Station	Closed cooling Circuit as Industrial Drain (private Sector)

S	*Plant*	*Raw materials Used*	*Product*	*No. of workers*	*Wastes*	*Method of Disposal*	*Water sources*	*notes*
20	Tobacco factory in Mallawi	Tobacco	Tobacco smoke	19	Paper wastes Plastic	Delivered to the Cleanness workers And the water is Drained in a tank	Mallawi Station	Absence of Treatment units (private sector)
21	Mubarak factory for Macaroni	Flower, water, Salt	Various forms Of macaroni	15	Dust, Macaroni Fractions	Sold as fodders	Industrial Zone Water station	Closed cooling Circuit as Industrial Drain (private Sector
22	Fruit juice factory in Maghagha	Mango, apples, Oranges, guava Preservatives	Fruit juice Treated with Preservatives	15	Fruit juice Wastes	Sold as fertilizers	Maghahga Water station	Absence of Industrial Drain (private Sector)
23	Droy halawa Tehinia factory in Mallawi	Sesame, cane Honey, sugar, Preservatives Additives	Halawa tehenia And tehina	14	Sesame crust Water	The crust is sold as Fodder, and the Water is collected in A tank	Mallawi water Station	Absence of Treatment units (private sector)
24	Al-aseel fodder Factory in new Menya	Molasses, Crops, others	Fodders	14	There are no Wastes	--------	Industrial Zone Water station	Absence of Industrial Drain (private Sector
25	Zamzam tile factory In new menya	Cement, powder Stones, marble Fractions, color	Colored tiles	14	Zebda	Collected in a hole Outside the factory & Disposed in mountain	Industrial Zone Water station	Absence of Treatment units (private sector)

S	*Plant*	*Raw materials Used*	*Product*	*No. of workers*	*Wastes*	*Method of Disposal*	*Water sources*	*notes*
26	Taba macaroni factory In new Menya	Flower, water, Salt	Various forms Of macaroni	14	Dust, Macaroni Fractions	Sold as fodders	New Menya Water station	Closed cooling Circuit as Industrial Drain (private Sector
27	El-baraka fodder Factory in new Menya	Molasses, Crops, others	Fodders	13	There are no Wastes	--------	New Menya Water station	Absence of Industrial Drain (private Sector
28	El-za'eem fodder Factory in new menya	Molasses, Crops, others	Fodders	12	There are no Wastes	--------	New Menya Water station	Absence of Industrial Drain (private Sector
29	El-za'eem macaroni Factory in Beni Mazar	Flower, water, Salt	Various forms Of macaroni	13	Dust, Macaroni Fractions	Sold as fodders	Beni Mazar Water station	Closed cooling Circuit as Industrial Drain (private Sector
30	Tamba factory for Drying onion and Garlic in beni mazar	Onion, garlic	Dreid onion, Dried garlic	13	Treated water Onion peels	Sold as fodders	Beni Mazar Water station	Absence of Treatment units (private sector)
31	El-sa'd macaroni Factory in Mttay	Flower, water, Salt	Various forms Of macaroni	13	Dust, Macaroni Fractions	Sold as fodders	Mattay Water station	Closed cooling Circuit as Industrial Drain (private Sector

S	*Plant*	*Raw materials Used*	*Product*	*No. of workers*	*Wastes*	*Method of Disposal*	*Water sources*	*notes*
32	Etehad Co. for produ-Cing nails in new Menya	Iron	Nails	12	Iron Remainings	Collected and sold for Reuse	Industrial Zone Water station	Absence of Industrial Drain .
33	Fathi el douri rice Processor in Mallawi	Rice	Pure rice	12	Rice crust	By burning	Mallawi water Station	Absence of Industrial Drain
34	Integrated Co. for oils And soap in new Menya	Caustic soda, Chlorine, oils Raw materials	White laundry Soap	12	Liquid and Foamy on the Factory's Ground	Drained in a closed Tank	Industrial Zone Water station	Draining in a Tank
35	Unified Co. for pipes In new menya	Cement, sand, Stones	Concrete pipes	12	No wastes	-----	Industrial Zone Water station	Absence of Industrial Drain
36	Etehad Co. for pipes In Menya	Iron	Nails	12	Iron Remainings	Collected and sold	Industrial Zone Water station	Absence of Industrial Drain
37	Metal plates Formation factory In new Menya	Iron	Tin plates and Iron angles	11	Small iron Pieces	Collected and sold	Industrial Zone Water station	Absence of Industrial Drain
38	Concrete pipes factory In new Menya	Cement, sand, Stones	Concrete pipes	11	Pipes Fractions	Collected and thrown In the garbage	Industrial Zone Water station	Absence of Industrial Drain

S	*Plant*	*Raw materials Used*	*Product*	*No. of workers*	*Wastes*	*Method of Disposal*	*Water sources*	*notes*
39	Ne'ma macaroni factory	Flower, water, Salt	Various forms Of macaroni	11	Dust, Macaroni Fractions	Sold as fodders	Industrial Zone Water station	Industrial drain Is cooling Water (closed Circuit)
40	Sahara concrete pipes In new Menya	Cement, sand, Stones	Concrete pipes	11	Pipes Fractions	Collected and thrown In the garbage	Industrial Zone Water station	Absence of Industrial Drain
41	The modern Co. for Metallic industries in New Menya	Iron ore	Metallic Constructures	10	Small iron Pieces	Collected and reused	Industrial Zone Water station	Absence of Industrial Drain
42	Nefertiti halawa Tehenia factory in Abo korkas	Sesame, cane Honey, sugar, Preservatives Additives	Halawa tehenia And tehina	10	Sesame crust Water	The crust is sold as Fodder, and the Water is drained in The sewage	Abo korkas water Station	Absence of Treatment units (private sector)

Source/ safety and professional; health department in Menya