



High-Level Conference on:

Water for Agriculture and Energy in Africa: the Challenges of Climate Change

Sirte, Libyan Arab Jamahiriya, 15-17 December 2008

National Investment Brief

EGYPT

[DRAFT FOR REVIEW BY GOVERNMENT]

EXECUTIVE SUMMARY:

Egypt is self-sufficient in almost all agricultural commodities with the exception of cereals, oils and sugar; however, these exceptions make Egypt one of the world's largest food importers. Egypt portrays a low level of under-nourishment with only 3% of the population being undernourished. The situation has not changed significantly from 1990-92, benchmark period of the WFS and the MD, to 1999-2001, the last period available. Egypt's strategy entails poverty reduction and equity considerations directed at lowering poverty rates from 21% to 18% of total population.

About 50 percent of agriculture holdings in Egypt have an area less than 0.4 ha (1 feddan). Land suitable for agriculture is a constraint in Egypt. As a result, conscious effort is being made to reclaim land from the desert and convert it to suitable agricultural use. The Government plans to reclaim a minimum of 150,000 feddans of land (63,000 ha) annually. The country's plan is to bring to cultivation a total of 1.38 million ha from the desert area up to the year 2017. This would be achieved through mega projects such as the South Valley Development project of which the Toshka and East Oweinat are considered the most important phases.

The River Nile is the main source of water for Egypt, with an annual allocated flow of 55.5 km³/yr under the Nile Waters Agreement of 1959. Internal renewable surface water resources are estimated at 0.5 km³/yr. This brings total actual renewable surface water resources to 56 km³/year. Internal renewable groundwater resources are estimated at 1.3 km³/yr. The overlap between surface water and groundwater being considered negligible, the total actual renewable water resources of the country are thus 57.3 km³/yr. The Nubian Sandstone aquifer located under the Western Desert is considered an important groundwater source, but this is fossil groundwater. Estimates of the potential of non-renewable groundwater in the eastern and western deserts, mainly from the Nubian Sandstone aquifer, vary from 3.8 km³/yr to 0.6 km³/yr. The main source of internal recharge is percolation from irrigation water in the Valley and the Delta.

Egypt's water strategy focuses on supporting increase in irrigation water availability primarily through: i) increasing the efficiency of water use and simultaneously minimising water loss through the upgrading of water delivery and drainage systems, and ii) improved drainage water reuse programs; in addition to improving water services to users.

In Egypt, 99.8% of the cropland is irrigated. The area equipped for irrigation in 2002 was reported at 3 422 178 ha out of an estimated irrigation potential of 4 420 000 ha. Egypt's Mediterranean coast and the Nile Delta have been identified as vulnerable to sea level rise. The energy sector is the main source of GHG emissions because Egypt is 92% dependent on fossil fuels (oil and natural gas). The agricultural sector is the second largest GHG source, mainly from enteric fermentation and rice cultivation.

The government's development agenda is presented in its Long-Term Development Vision 2022 within which 5-year medium-term plans and annual plans are implemented. The last five-year plan covered the period 2002-2007. The main elements of this strategy are: (i) enhancing balance of payments and augmenting job opportunities; (ii) deepening and modernisation of the

1. CONTEXT

1.1 AGRICULTURE AND FOOD SECURITY

Agriculture

In 2007, Egypt's GDP (Gross Domestic Product) was estimated at US\$ 128 billion. The agricultural sector accounted for 14.07 percent of GDP and employed about 30 percent of the labour force, of which 49 percent were female.

Smallholdings characterize Egyptian agriculture; about 50 percent of holdings have an area less than 0.4 ha (1 feddan). Farmland urbanization represents a serious threat to agriculture in Egypt, despite the prohibition to construct any buildings on farmland without a licence from the Ministry of Agriculture and Land Reclamation and the serious penalties that violators face. Although the total area of the country is about 1 million km², most of it is desert; land suitable for agriculture represents less than 4% and is a major constraint. As a result, conscious effort is being made to reclaim land from the desert and convert it to suitable agricultural use.

The cultivated area was slightly more than 3.5 million ha in 2005, with an average cropping intensity of 176 percent. There are three growing seasons in Egypt. Most crops are grown both in the Delta and the Valley, with the exception of rice (Delta mainly) and sugarcane (Valley). The main winter crops are wheat and clover or berseem (*Trifolium alexandrinum*). Minor winter crops are, amongst others, pulses, barley and sugar beet. The main summer crops are maize, rice and cotton, the latter being the most important Egyptian export crop. In 2002, yields were 6.4 t/ha for wheat, 8.1 t/ha for maize, 9.4 t/ha for rice and 2.6 t/ha for cotton.

Irrigation and water control

In Egypt, 99.8 percent of cropland was irrigated in 2002. Even the small, more humid area along the Mediterranean coast requires supplementary irrigation to produce reasonable yields. Irrigation potential is estimated at 4 420 000 ha whereas the total area equipped for irrigation in 2002 was reported at 3 422 178 ha, with 85 percent in the Nile Valley and Delta.

Surface irrigation was practiced on 3 028 853 ha in 2000, while 171 910 ha were under sprinkler irrigation and 221 415 ha under localized irrigation. Surface water was the source for 83 percent of the irrigated area in 2000, while 11 percent (361 176 ha) of the area was irrigated with groundwater in the provinces of Matruh, Sinai and New Valley. The remaining 6 percent (217 527 ha) was irrigated with mixed sources. The power irrigated area in 2000 was estimated at 2 937 939 ha.

The irrigation system in the old land of the Nile Valley is a combined gravity and water lifting system. Downstream of the High Aswan Dam, there are seven barrages to facilitate abstraction. The irrigation system in the new lands (reclaimed areas) is based on a cascade of pumping stations from the main canals to the fields, with a total lift of up to 50 m. Surface irrigation is banned by law in the new reclaimed areas, which are located at the end of the systems, and are more at risk of water shortage.

In addition to the older developments in the oasis of the New Valley, which pump water from the Nubian Sandstone aquifer, new large irrigation schemes are under development in the southwestern part of the country at Al Oweinat; in 2003 about 4 200 ha were under cultivation and there were plans to extend the project to several times that area.

Rainwater harvesting is practiced in about 133 500 ha in Matruh and North Sinai where the average rainfall is between 220 and 250 mm.

The average cost of irrigation development is about US\$800/ha for localized irrigation of orchards and about US\$1 200/ha for localized irrigation of vegetable or field crops. Mobile sprinkler irrigation costs about US\$800/ha and stationary sprinkler irrigation costs about US\$1 800/ha.

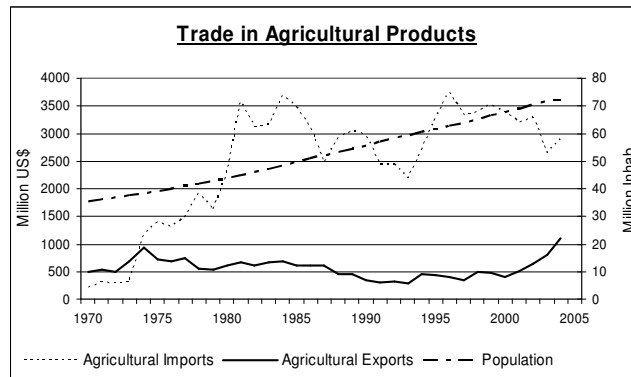
Food security

Egypt is self-sufficient in almost all agricultural commodities with the exception of cereals (wheat, wheat flour, and yellow maize), oils and sugar; however, these exceptions make Egypt one of the world's largest food importers. Agricultural imports in 2004 included 4.4 million tonnes of wheat and wheat flour, 2.4 million tonnes of yellow maize, 1.2 million tonnes of vegetable oils and 0.3 million tonnes of sugar. Egypt portrays a low level of undernourishment; 3 percent of the population is undernourished. The situation has not changed significantly from 1990-92, benchmark period of the

WFS and the MD, to 1999-2001, the last period available. There is about the same undernourishment in Egypt as in North Africa but there is less than in the Near East and North Africa.

Food and agriculture trade and import balance

The agricultural imports bill in the country has rapidly increased (see figure below) putting a substantial burden on the country's foreign exchange resources. It was more than twofold that of imports in the early seventies, but the balance became negative and the gap continuously widened since the mid-seventies. The total imports bill reached 2 905 million US\$ in 2004 against only US\$ 1 110 million for exports. Cereals contributed the largest share of the import bill, with 49%, and wheat alone accounted for approximately 32.6% of the total. On the other hand, in 2004 the main export crops were 183 736 tonnes of cotton, 836 940 tonnes of rice, 176 000 tonnes of potatoes and 37 000 tonnes of citrus.



1.2 WATER RESOURCES AND HYDROPOWER

The River Nile is the main source of water for Egypt, with an annual allocated flow of 55.5 km³/yr under the Nile Waters Agreement of 1959. Internal renewable surface water resources are estimated at 0.5 km³/yr. This brings total actual renewable surface water resources to 56 km³/year. Internal renewable groundwater resources are estimated at 1.3 km³/yr. The overlap between surface water and groundwater being considered negligible, the total actual renewable water resources of the country are thus 57.3 km³/yr. The Nubian Sandstone aquifer located under the Western Desert is considered an important groundwater source, but this is fossil groundwater. The main source of internal recharge is percolation from irrigation water in the Valley and the Delta.

All drainage water in Upper Egypt, south of Cairo, flows back into the Nile and the irrigation canals; this amount is estimated at 4 km³/yr. Drainage water in the Nile Delta is estimated at 14 km³/yr. Treated domestic wastewater in 2001/02 was estimated at 2.97 km³/yr. There are several desalination plants on the coasts of the Red Sea and the Mediterranean to provide water for seaside resorts and hotels; total production in 2002 was estimated at 100 million m³. Estimates of the potential of non-renewable groundwater in the eastern and western deserts, mainly from the Nubian Sandstone aquifer, vary from 3.8 km³/yr to 0.6 km³/yr; the latter estimate is defined as an indicator of exploitability over a period of time, where the time is not given.

Total water withdrawal in 2000 was estimated at 68.3 km³. This included 59 km³ for agriculture (86 percent), 5.3 km³ for domestic use (8 percent) and 4.0 km³ for industry (6 percent). Apart from that, 4.0 km³ were used for navigation and hydropower.

Groundwater extraction in 2000 was 7.043 km³ comprising:

- 6.127 km³ from the Nile Basin (seepage waters),
- 0.825 km³ from the eastern and western deserts, i.e. mainly the Nubian Sandstone aquifer,
- 0.091 km³ from shallow wells in Sinai and on the north-western coast.

Reuse of agricultural drainage water, returned to the rivers, in irrigation amounted to 4.84 km³/yr in 2001/02. Of the 2.97 km³/yr of treated wastewater, 1.5 km³/yr is reused for irrigation, while the rest is pumped into main drains where it mixes with drainage water and is then used for irrigation. Treated wastewater is usually used for landscape irrigation of trees in urban areas and along roads.

Aswan High Dam is the major hydropower station in Egypt. Under the 1959 Nile Waters Agreement between Egypt and Sudan, Egypt's share of the Nile flow is 55.5 km³/yr. The agreement was based on the average flow of the Nile during the 1900-1959 period, which was 84 km³/yr at Aswan High Dam. Average annual evaporation and other losses from the Aswan High Dam and reservoir (Lake Nasser) were estimated at 10 km³/yr, leaving a net usable flow of 74 km³/yr, of which 18.5 km³/yr was allocated to Sudan and 55.5 km³/yr to Egypt. If conditions permit the completion of the development projects on the Upper Nile, Egypt's share in the Nile water will increase by 9 km³. This amount includes 1.9 km³ and 1.6 km³ respectively from the first and second phases of the Jonglei canal project in southern Sudan. Two other projects in the upstream swamps are expected to provide 5.5 km³.

1.3 CLIMATE CHANGE

Egypt's Mediterranean coast and the Nile Delta have been identified as vulnerable to sea level rise. A recent study concerning fresh water resources in Egypt, including vulnerability assessment concluded that the impact of climate change on the Nile Basin could not yet be predicted, but that there are indications that the impacts will be significant and severe. Any decrease in the total supply of water, coupled with an expected increase in consumption due to the high population growth rates and the rise in the standards of living, will have drastic impacts.

All climate change scenarios considered resulted in simulated decreases in wheat and maize yields: climate change may bring about substantial reductions in the national grain production. As for cotton, it is clear that seed cotton yield will be increased gradually to arrive at its maximum by the year 2050 due to the expected impact of climate change (i.e. when temperatures increase +2C and +4C) under the normal CO₂ concentration. If climate change adversely affected crop production, Egypt would have to increase its reliance on costly food imports.

As for Greenhouse Gases inventory, it is estimated that the total GHG emissions of Egypt in 1990 were equal to 116,608 Gg of CO₂ equivalent using the 1995 Global Warming Potential (GWP) of the IPCC, while the net emissions equal to 106,708 Gg of CO₂ equivalent. The energy sector is the main source of GHG emissions because Egypt is 92% dependent on fossil fuels (oil and natural gas). The agricultural sector is the second largest GHG source, mainly from enteric fermentation and rice cultivation; followed by industrial emissions of CO₂, mainly from the steel and cement industries. Methane is the main GHG produced from the waste management sector as a result of anaerobic bacterial decomposition of organic matter in landfills and open dumps. As in most countries, CO₂ is the main GHG emitted in Egypt, while methane is the second major GHG. Egypt's large and dense packed population makes the country extremely vulnerable to climate change.

2. NATIONAL STRATEGIES FOR WATER, AGRICULTURE AND ENERGY

2.1 POLICY CONTEXT

The government's development agenda is presented in its **Long-Term Development Vision 2022** within which 5-year medium-term plans and annual plans are implemented. The last five-year plan covered the period 2002-2007. The document reiterates government's determination to continue the strategy of private sector-led growth and modernisation of the Egyptian economy and its integration into the global economy. The main elements of this strategy are: (i) export promotion to enhance balance of payments and augment job opportunities; (ii) deepening and modernisation of the industrialisation process focusing on capital goods and high value production in accordance with Egypt's competitive advantage; (iii) reducing unemployment and focusing on employment-oriented, labour-intensive techniques and promotion of small and medium sized enterprises; (iv) directing development towards desert land and correcting spatial imbalances; (v) poverty reduction and equity consideration; and (vi) gender equality and women's participation in the development process. The fifth five-year plan is underpinned by key goals and expected outcomes summarised in:

- Attaining an annual average real GDP growth rate of 6.2% during the plan period;
- Increasing the investment rate from 16.9% of GDP in 2000/2001 to 20% by 2007;
- Raising the saving rate to reach 17.3% of GDP by 2006/2007;
- Reducing the domestic resource gap (budget deficit) from 6.5% of GDP in 2001/02 to 2.5% by 2006/07;

- Reducing the trade deficit from EGP 38.8 billion in 2001/02 to EGP 34.8 billion in 2006/07 by boosting exports at an average annual growth rate of 13% against 5.3% for imports;
- Achieving a current account surplus of EGP 4263 billion (3.4% of GDP) in 2006/07
- Creating 750,000 job opportunities per annum between 2002 and 2007.

Egypt's expanding population and agricultural expansion have continued to place increasing pressure on the country's limited water resources. All agricultural production in Egypt depends on irrigation from the Nile and a major limitation to increased production is the limited and irregular supply of irrigation water of sufficient quality. Policies are being simultaneously put in place to encourage private sector investment in agriculture and related industrial and commercial activities. The **water sector strategy** would focus on increasing irrigation water availability primarily through: i) increasing the efficiency of water use and simultaneously minimising water loss through the upgrading of water delivery and drainage systems, and ii) improved drainage water reuse programs.

Area expansion through **land reclamation** is an important contributing factor to enhance agricultural production. The Government plans to reclaim a minimum of 150,000 feddans of land (63,000 ha) annually. The demand for agricultural products is increasing due to population growth and the need for more export earnings. The country's plan is to bring to cultivation a total of 1.38 million ha from the desert area up to the year 2017. This would be achieved through mega projects such as the South Valley Development project of which the Toshka and East Oweinat are considered the most important phases.

Export promotion strategy is to enhance the trade balance by boosting export revenues to surpass import payments and expand high value manufacturing exports, including technology-intensive products, within Egypt's comparative advantage. The strategy involves increasing production of high value agricultural products for export, including fresh and frozen vegetables, medicinal and floral plants and capturing lost markets for cotton and open up new ones. It aims at providing export-oriented industries with effective marketing, transportation, financial services, market/technology information services and other incentives. Overall, the plan aims at an annual increase of 13% in commodity exports and 7.3% annual increase in services exports to 2006/07.

The Government has been directing agriculture development towards desert land and the policy has given further impetus to agricultural growth and development along with the accompanying export growth. It will also lead to better quality of life for the citizenry. The policy strategy can also be seen in the context of redirection of urban growth towards desert land as a means of alleviating poverty.

The strategy entails **poverty reduction and equity considerations** directed at lowering poverty rates from 21% to 18% of total population and narrowing the urban-rural income gap to 10% or less so as to curtail urban migration and improve rural living conditions. Social development is geared towards improving social services, including reducing the illiteracy rate, and improving the quality of health services to international standards at reasonable cost for low income groups.

The strategy in the **energy sub-sector** would aim at expanding the infrastructure that is needed to support the fast growing sectors of the economy. While power generation is being undertaken partly by the public sector and partly by the private sector, the Government intends to keep the transmission system in the public domain. The Government has also embarked on a rural electrification program to supply power to low-income rural communities. Internally generated funds, grants and soft loans are being used for this purpose. The strategy in the energy sub-sector focuses on providing support for the expansion of power generation capacity and the improvement of the electricity transmission network to partly meet the electricity demand in the short-to-medium term and thereby contribute towards making available sufficient and reliable power to the various consumers including the households, agriculture, business and industries to improve the quality of life of the population and promote economic growth.

To contribute to addressing **climate change** issues, in 1995, Egypt started to develop the National Climate Change Action Plan. This plan aims to integrate climate change concerns into national planning processes and programs by enhancing policy dialogue, raising national awareness, and building national capacity to deal with climate change, and designing priority policies and measures to mitigate and adapt to possible impacts of climate change. Moreover, Egypt is implementing a Joint Programme supported by the Global Environment Fund (GEF) and aimed at helping the country align its climate risk management and human development efforts in pursuing the achievement of MDGs in the face of climate change and the predicted serious threats to the country. The Joint Programme will

serve to reduce poverty and mitigate risk by combining mitigation and adaptation under one integrated Climate Risk Management (CRM) banner, two complementary approaches: 1) Mainstreaming GHG mitigation into national policy and investment frameworks, including increased CDM financing opportunities; 2) Enhancing the country's capacity to adapt to climate change. The JP will also build awareness and capacity of key decision makers and development actors to support the systematic integration of climate change as a new variable in key policy, regulatory, institutional and operational frameworks and implement pilot projects.

2.2 INVESTMENT ENVELOPE

The investment envelope for the short, medium and long term is presented in the Table below and expressed in million US dollars. These figures are based on CAADP investment projections, World Bank water investment needs assessment, and estimates by FAO based on recent agriculture and water strategies.

INVESTMENT ENVELOPE FROM CAADP				
Time scale	Type of investment (million US\$)			
	Small scale water control	Rehabilitation of irrigation	Large scale	Total
Short-term	35	529	240	805
Medium-term	22	1235	1439	2696
Long-term	11	235	2957	3204
Total	69	2000	4636	6705
Area	33	1000	927	1960

MODIFICATION TO THE INVESTMENT ENVELOPE				
Time scale	Type of investment (million US\$)			
	Small scale water control	Rehabilitation of irrigation	Large scale	Total
Short-term				210
Medium-term				604
Long-term				800
Total				1614
Area				

2.3 PROJECT PORTFOLIO

Section 3 presents recently achieved, active and pipeline projects related to the above investment envelope. In addition to recently implemented projects for a total cost of nearly US\$ 1.5 billion there are currently ten on-going projects for a total cost of more than US\$ 813 million and two pipeline projects for an estimated cost of US\$ 800 million.

In addition to the above projects, the country's plan is to bring to cultivation a total of 1.38 million ha from the desert area up to the year 2017. This would be achieved through mega projects such as the South Valley Development project of which the Toshka and East Oweinat are considered the most important phases.

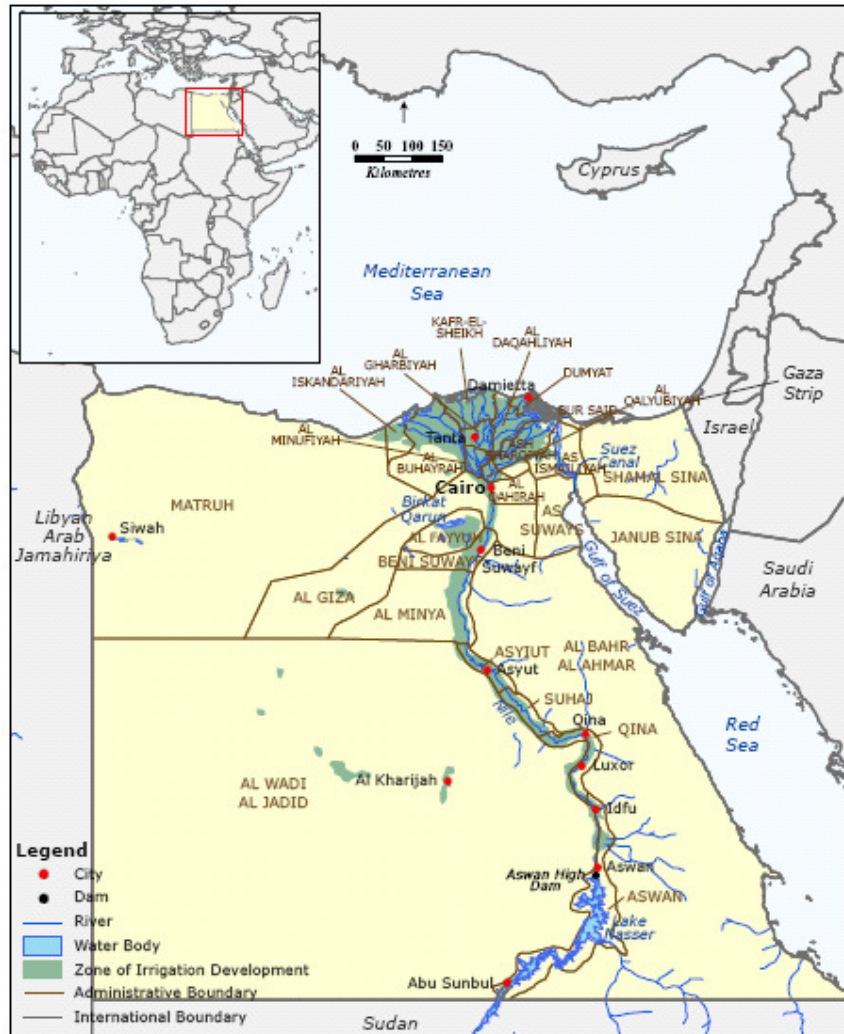
3. PROJECT PROFILES (ON-GOING AND PROJECTED)

Project title	Funding Partners	Lifeline	Total Budget	Description
I. PROJECTS RECENTLY IMPLEMENTED				
Matruh Resource Management	IBRD/IDA	1993-2002	US\$ 22 million	Aim at improving the livelihoods of disadvantaged rural people living in the Matruh Governorate, reducing incidence of poverty and increasing incomes
Second Matruh Resource Management	IBRD, IFAD, LC, GOE	2003-2005	US\$ 39.799 million	Improve livelihoods of disadvantaged rural people in Northwest Coastal zone, reducing incidence of poverty, and increase incomes
Egypt-Private Sector and Agriculture Development	IBRD, IDA, GOE	1999-2005	US\$ 600 million	Support the Government of Egypt's continuing policies of encouraging broad-based private-sector-led growth
Sohag Rural Development	IDA, IFAD	1998-2008	US\$ 50 million	Promote the sustainable development of Sohag rural villages through the participatory approach
Pumping Stations Rehabilitation III	IBRD, KfW, GOE	1998-2007	US\$ 120 million	Improve efficiency of pumping stations O&M and reliability of delivery of irrigation water and evacuation of drainage water; strengthen planning and operation and maintenance capability
Irrigation Improvement Project	IBRD, IDA KfW, NL	1994-2006	US\$ 182.3 million	Increase agricultural production and farmers income by improving irrigation infrastructure, facilitating more equitable distribution of water, and improved on-farm water management
Agricultural Modernization Project	IBRD, IDA, FS	1994-2001	US\$ 268.8 million	Increase agricultural productivity and rural income, streamline Principal Bank for Development and Agricultural Credit's (PBDAC) organization and facilitate participation of commercial banks in financing rural investments
National Drainage Project	IBRD, IDA KfW, NL	1991-2000	US\$ 160 million	Increase agricultural productivity by evacuating excess water and salts; improve institutional planning and the implementation capacity of drainage subsector
II. ON-GOING PROJECTS				
West Delta Water Conservation and Irrigation Rehabilitation	IBRD, FS LFO	2008-2011	US\$ 145 million	Improving the livelihood and increasing income of people in the West Delta regions
Eastern Nile Flood Prevention and Early Warning Project - Phase 1	NBITF	2007-2010	US\$ 4.08 million	
Kureimat Solar Thermal Hybrid Project	IBRD	2007-2008	US\$ 50 million	Reduce greenhouse gas emissions from anthropogenic sources by increasing the market share of low greenhouse gas emitting technologies
El Tebbin Power	IBRD	2006-2011	US\$ 259.6	Assist the GOE in enhancing the provision of energy supply in a sustainable manner and strengthening sector performance
Natural Gas Connection	IBRD	2008-2013	US\$ 75 million	Support GOE's program of switching consumption of liquefied petroleum gas for natural gas
National Drainage II	IBRD	2001-2008	US\$ 50 million	Increase the agricultural productivity of about 0.8 million feddans of irrigated land by improving drainage conditions
Integrated Irrigation Improvement and Management	IBRD, KfW, NL	2006-2014	US\$ 120 million	Aims at increasing efficiency of irrigated agriculture water use and services in the project area.
East Delta Agricultural Services	WB	1999-2008	US\$ 14.4 million	Improve agricultural production and farm incomes for about 29,000

				low income families in the project area through provision of essential infrastructure and agricultural support services
East Delta Newlands Agricultural Services	IDA, IFAD LC	1997-2008	US\$ 91.2 million	Aims to facilitate the settlement and increased agricultural production of about 26000 farm families on 130000 Feddans of newly developed lands in the East Delta.
Climate Change Risk Management in Egypt	GEF/Spain	2008-2011	US\$ 4 million	help Egypt align its climate risk management and human development efforts in pursuing achievement of MDGs in the face of climate change and predicted serious threats to country
III. PIPELINE PROJECTS				
Upper Egypt Integrated Governorates Development	IBRD	N/A	US\$ 200 million	No funding details available for this project
Ain Sokhna Power Project	IBRD	N/A	US\$ 600 million	No funding details available for this project

EIB: European Investment Bank; FS: Foreign Sources; GEF: Global Environment Facility; GOE: Government of Egypt; IBRD: International Bank For Reconstruction and Development; IDA: International Development Association; IFAD: International Fund For Agriculture Development; JBIC: Japan Bank For International Cooperation; KfW: Kreditanstalt für Wiederaufbau (Reconstruction Credit Institute), Germany; LC: Local Communities; LFO: Local Farmer Organizations; NBITF: Nile Basin Initiative Trust Fund; NL: Netherlands

ANNEX 1: MAP OF WATER CONTROL IN EGYPT



ANNEX 2: COUNTRY STATISTICS

Country and population			
Area of the country	2005	100145	1000 ha
Cultivated area as % of the total area of the country	2005	3.5	%
Total population	2005	74033	1000 inhab
• of which rural	2005	58	%
Population economically active in agriculture	2005	8599	1000 inhab
• as % of total economically active population	2005	30	%
• female	2005	49	%
• male	2005	51	%
Economy and Development			
Gross Domestic Product (GDP) (current US\$)	2007	128095	million US\$/yr
• value added in agriculture (% of GDP)	2006	14.07	%
• GDP per capita	2007	1697	US\$/yr
Access to improved drinking water sources			
Total population	2006	98	%
Urban population	2006	99	%
Rural population	2006	98	%
Water Resources and management			
Average precipitation	2007	51.4	10 ⁹ m ³ /yr
Total actual renewable water resources	2007	57.3	10 ⁹ m ³ /yr
Dependency ratio (transboundary rivers)	2007	96.9	%
Total actual renewable water resources per inhabitant	2007	774	m ³ /yr
Total dam capacity	2003	169	10 ⁹ m ³
Total water withdrawal (including secondary and non-conventional water)	2000	68.3	10 ⁹ m ³ /yr
• as % of total actual renewable water resources	2000	11.89	%
Total freshwater withdrawal (surface water and groundwater)	2000	54.3	10 ⁹ m ³ /yr
• as % of total actual renewable water resources	2000	94.8	%
IRRIGATION AND DRAINAGE			
Irrigation potential	2007	4420	1000 ha
Water Management			
Area equipped for irrigation: full control - total	2002	3422.178	1000 ha
Equipped lowlands	2002	0.000	1000 ha
Total area equipped for irrigation	2002	3422.178	1000 ha
• Area equipped for irrigation as % of cultivated area	2002	99.9	%
• Annual increase rate		0.6	%
• Power irrigated area as % of area equipped for irrigation	2002	85.8	%
• Area actually irrigated as % of area equipped for irrigation	2002	100	%
Non-equipped cultivated lowlands and flood recession	2002	0.000	1000 ha
Total agricultural water managed area	2002	3422.178	1000 ha
• Agricultural water managed area: as % of cultivated area	2002	100.0	%
• Drained cultivated area as % of total cultivated area		85.91	%
Typology of irrigation schemes			
Small-scale schemes (<ha)			1000 ha
Medium-scale schemes (- ha)			1000 ha
Large-scale schemes (>ha)			1000 ha
Irrigated crops			
Wheat	2002	1029.180	1000 ha
Rice	2002	650.026	1000 ha
Barley	2002	96.201	1000 ha
Maize	2002	827.949	1000 ha
Sorghum	2002	156.155	1000 ha
Potatoes	2002	82.588	1000 ha
Sweet potatoes	2002	8.388	1000 ha
Other roots and tubers	2002	3.001	1000 ha
Sugar cane	2002	135.815	1000 ha
Sugar beets	2002	64.596	1000 ha
Pulses	2002	164.013	1000 ha
Vegetables	2002	472.062	1000 ha
Bananas	2002	24.165	1000 ha
Citrus	2002	145.421	1000 ha
Cotton	2002	296.693	1000 ha
Fodder	2002	1195.903	1000 ha
Soybeans	2002	5.914	1000 ha
Groundnuts	2002	59.241	1000 ha
Sunflower	2002	15.493	1000 ha
Sesame	2002	30.284	1000 ha
Flowers	2002	26.055	1000 ha
Other annual crops	2002	219.303	1000 ha
Other permanent crops	2002	318.669	1000 ha
ENERGY INDICATORS			
Energy Production	2005	76.04	Mtoe
Net Imports	2005	-13.35	Mtoe
TPES	2005	61.30	Mtoe

- TPES/Pop	2005	0.83	toe/capita
- TPES/GDP	2005	0.51	toe/thousand 2000 US\$
- TPES/GDO (PPP)	2005	0.21	toe/thousand 2000 US\$ PPP
Electricity Consumption	2005	90.73	TWh
- EC/Pop	2005	1226	kWh/capita

ENERGY SUPPLY AND CONSUMPTION (2005)*								
	Coal	Gas	Crude oil	Petroleum products	Hydro	Other Renewable & Waste	Others	TOTAL
Production	20	40406	33020	0	1087	1505	0	76038
Imports	1174	0	3147	3124	0	0	14	7459
Exports	-300	12641	0	-7768	0	-22	-81	-20812
International Marine Bunkers	0	0	0	-1382	0	0	0	-1382
Stock Changes	0	0	0	-5	0	0	0	-5
Total Primary Energy Supply (TPES)	895	27765	36167	-6030	1087	1484	-67	61301

* in thousand tonnes of oil equivalent (ktoe) on a net calorific value basis.

REFERENCES

- AQUASTAT - FAO's Information System on Water and Agriculture.
<http://www.fao.org/nr/water/aquastat/main/index.stm>
- NEPAD, FAO. 2004. National Medium Term Investment Programme.
<ftp://ftp.fao.org/docrep/fao/007/ae415e/ae415e00.pdf>
- The commercial import/Trade and Food Security (IFS) database, FAOSTAT, 2004.
<http://faostat.fao.org/site/342/default.aspx>
- The World Bank. Country information. (Egypt-ArabRep.ataglance.pdf)
http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2006/08/14/000160016_20060814091949/Rendered/PDF/30295.pdf.
- African Development Bank Country information
www.afdb.org/portal/page?_pageid=473,30722152&_dad=portal&_schema=PORTAL
- Trends in Hunger Reduction for the Monitoring of the WFS and MDG targets, FAO Statistics
www.fao.org/ES/ess/mdg_kit/cy_level.asp#07
- FAOSTAT
<http://faostat.fao.org/site/535/default.aspx#anchor>
<http://faostat.fao.org/site/550/DesktopDefault.aspx?PageID=550#anchor>
- UNCCD, 1999. National Communications (Initial National Communication on Climate Change)
<http://unfccc.int/resource/docs/natc/egync1.pdf>
- World Bank - Project Database.
web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,menuPK:115635~pagePK:64020917~piPK:64021009~theSitePK:40941,00.html