

Egypt

Institutional Arrangements

The Ministry of Water Resources and Irrigation (MWRI) is the key institution for water resources management in Egypt. Since the water resources system in Egypt is almost totally dependent on a one-river system, being the Nile, a somewhat centralized control on its management at the national level is needed. The Irrigation Directorates then have an important role in water distribution, irrigation system protection, and water pollution prevention at the sub-national level.

The National Water Research Centre (NWRC) with its 12 Research Institutes represents the research arm of MWRI which perform policy-oriented and applied research including modelling of dam operation, crop water requirements in different agro-ecological zone, groundwater potential, hydraulic impacts of structures, sedimentation regimes, drainage water quality management, and others. NWRC includes also a Strategic Research Unit (SRU), and a Central Laboratory for Environmental Quality Monitoring (CLEQM).

The Planning Sector of the MWRI is responsible for the overall water resources planning in Egypt. The Nile Waters Sector, and the Aswan High Dam Authority of MWRI are respectively responsible for trans-boundary water management, and the management of the Aswan High Dam. The Egyptian Public Authority for Drainage Projects is responsible for the construction and management of the public-owned agriculture drainage systems. The Egyptian Public Authority for Shore Protection is responsible for the coastal shore protection.

Table 1.1 Key institutions involved in the water sector of Egypt

Constitutional function	Organisational function	Operational function
Ministry of Water Resources and Irrigation (MWRI)	Nile Water Sector, MWRI	Irrigation Directorates at sub-basin level, MWRI
Ministry of Agriculture and Land Reclamation (MALR)	Planning Sector, MWRI	EPADP Drainage Directorates at sub-basin level, MWRI
Ministry of State for Environmental Affairs	Strategic Research Unit, National Water Research Centre (NWRC), MWRI	Irrigation Improvement Sector, MWRI
Ministry of Housing & Urban Development (MHUD)	Reservoirs & Grand Barrages Sector, MWRI	Holding Company for Water Supply and Sanitation
Ministry of Electricity & Energy (MoEE)	Egyptian Public Authority for High Aswan Dam, MWRI	Egyptian Electricity Holding Company
Ministry of Finance	Egyptian Environmental Affairs Agency (EEAA)	Irrigation Advisory Services
Ministry of Economic Development	Nile Research Institute, NWRC	Land Reclamation Directorate
Ministry of Investment	Hydraulic Research Institute, NWRC	Nile Protection Sector, MWRI
Ministry of Local Development (MoLD)	Water, Land, & Environment Research Institute, ARC, MALR	Agricultural Development Companies
Ministry of Foreign Affairs	District Water Boards	Water users Association and Branch Canal Water Users Associations

The Irrigation Department within MWRI includes several sectors including the Reservoirs and Grand Barrages Sector, which is responsible for the management of all barrages, reservoirs and

major water structures. The Irrigation Sector is responsible for the management of public owned irrigation systems up to the level of the tertiary units. Informal irrigation groups manage the private owned tertiary irrigation systems.

The Irrigation Improvement Sector is responsible for the improvement of water use efficiency and water savings in the branch canals and tertiary irrigation systems, and currently concentrates its efforts on the downstream command area of the Nile Delta. It includes Irrigation Advisory Services, which together with the On-farm Water Management Section of the Ministry of Agriculture and Land Reclamation provides managerial and technical support to the water users organizations. The Horizontal Expansion and Projects Sector is responsible for any new public owned irrigation infrastructure required for delivering surface water for the newly developed land areas. The Ground Water Sector is responsible for the control and regulation of groundwater use through assessing potential and issuance of well drilling licences.

The Water Quality Unit of MWRI works on policy issues, monitoring systems, indicators and reporting mechanisms related to water pollution and protection of the water resources quality. It also works on pilot small-scale wastewater treatment and disposal systems in rural areas to protect the irrigation and drainage systems from pollution.

The responsibility for water quality and environmental protection is shared with other ministries. The Ministry of State for Environmental Affairs is responsible for the environmental political and governance function. Its Egyptian Environmental Affairs Agency (EEAA) is responsible for the operational function and the implementation of Law 4/1994 for the protection of the environment and its resources including water. Law 4 for the environment includes direct reference to Law 48/1982 for the protection of water resources, which is administered by MWRI. The Ministry of Housing, Utilities and New communities is responsible for the governance and organizational function of planning and investment in the Water Supply & Sanitation sector, while the Holding Company for Water Supply and Sanitation with its subsidiary companies are responsible for the operation and maintenance of the drinking water and sanitation infrastructure.

The hydrological hierarchy dictates a limited mandate for the governorates in the field of water resources management. The governorate level is responsible for physical planning and drinking water supply and sanitation services in coordination with the Ministry of Housing and the Water Supply and Sanitation Companies.

The Land Reclamation Sector of the Ministry of Agriculture and Land Reclamation (MARL) and private sector investors are responsible for the development of the tertiary level (Farm Level) irrigation infrastructure in the new land reclamation areas.

The Ministry of Electricity & Energy is responsible for the governance and organizational function in the electricity sector. The Egyptian Electricity Holding Company is responsible for the operational function and has five member companies involved in generation, one in transmission and nine in distribution and billing of electricity.

The Ministry of Economic Development & the Ministry of Finance has the mandate of prioritising national budget allocation to the different ministries and governorates. The Ministry of Investments promotes private sector investments in the water sector, however the interest of private investors is currently limited to land reclamation initiatives.

The Ministry of Local Development oversees activities at the governorate Level. The Ministry of Foreign Affairs is responsible for the bi- and multilateral relations between Egypt and other countries.

An inter-ministerial committee, assisted by a technical committee, and a secretariat within the MWRI has been formed to oversee the implementation of the National Water Resources Plan (NWRP). On the other hand, a High-Committee on Water has recently been formed and headed by the Prime Minister including Ministers of Water Resources & Irrigation, Foreign Affairs, Internal

Affairs & National Security, & Defence. The mandate of the committee is to decide on key political issues related to water.

Trans-boundary treaties and agreements

There have been several colonial and post-colonial bi-lateral and multi-lateral transboundary treaties and agreements related to the use and management of the waters of the Nile Basin. The following table provides a list of these treaties and agreements.

Table 1.2 Trans-boundary treaties in Nile Basin

Date	Treaty basin	Signatories	Treaty Name
August 5, 1994	Lake Victoria	Kenya, Tanzania, Uganda	Agreement to initiate program to strengthen regional coordination in management of resources of Lake Victoria
July 1, 1993	Nile	Egypt, Ethiopia	Framework for general co-operation between the Arab republic of Egypt and Ethiopia
May 18, 1981	Kagera	Burundi, Rwanda, Tanzania, Uganda	Accession of Uganda to the agreement for pertaining to the creation of the organization for the management and development of the Kagera river basin
August 24, 1977	Kagera	Burundi, Rwanda, Tanzania, Uganda	Agreement for the establishment of the organization for the management and development of the Kagera river basin
November 8, 1995	Nile	Sudan, Egypt	Agreement between Egypt and Sudan the government of the united Arab Republic and the government of Sudan
July 16, 1952	Nile	Egypt, Great Britain and Northern Ireland	Exchange of notes constituting an agreement between the government of the United Kingdom of Great Britain and Northern Ireland and the government of Egypt regarding the construction of the Owen Falls dam in Uganda
January 19, 1950	Nile	Egypt, Great Britain on behalf of Uganda	Exchange of notes constituting an agreement between the government of the united Kingdom of Great Britain and Northern Ireland on behalf of the government of Uganda and the government Egypt regarding cooperation in meteorological and hydrological surveys in certain area of the Nile basin
December 5 1949	Nile	Egypt, Great Britain on behalf of Uganda	Exchange of notes constituting an agreement between the government of the United Kingdom of Great Britain and Northern Ireland and government of Egypt regarding the construction of the Owen Falls dam, Uganda
May 31, 1949	Nile	Egypt, Great Britain	Exchange of notes constituting an agreement between the government of the United Kingdom of Great Britain and Northern Ireland and the government of Egypt regarding the construction of the Owen Falls dam, Uganda
December 7, 1946	Nile	Egypt, Great Britain	Exchange of notes constituting an agreement between the government of the united Kingdom of Great Britain and Northern

Date	Treaty basin	Signatories	Treaty Name
			Ireland and Egypt regarding the utilization of profits from the 1940 British government cotton buying commission to finance schemes for village water supplies
November 22, 1934		Belgium; Great Britain	Agreement between the United Kingdom and Belgium regarding water rights on the boundary between Tanganyika and Ruanda - Urundi
May 7, 1929	Nile	Egypt; Great Britain	Exchange of notes between his Majesty's government in the United Kingdom and the Egyptian government in regard to the use of the waters of the river Nile for irrigation purposes
December 20, 1925	Lake Tana	Great Britain, Italy	Exchange of notes between United Kingdom and Italy respecting concessions for a barrage at Lake Tana and a railway across Abyssinia from Eritrea to Italian Somaliland
December 13, 1906	Nile	France, Great Britain, Italy	Agreement between Great Britain, France and Italy respecting Abyssinia
May 9, 1906	Nile	DR Congo, Great Britain	Agreement between Great Britain and the independent state of the DR Congo, modifying the agreement signed at Brussels 12 May 1894, relating to the spheres of influence of Great Britain and the Independent State of the DR Congo in East and Central Africa
May 15, 1902	Nile	Ethiopia, Great Britain	Treaties between Great Britain and Ethiopia, relative to the frontiers between Anglo- Egyptian Sudan, Ethiopia, and Eritrea
March 18, 1902	Nile	Ethiopia, Great Britain	Exchange of notes between Great Britain and Ethiopia
April 15, 1891	Nile	Great Britain, Italy	Protocol between Great Britain and Italy for the demarcation of their respective spheres of influence in Eastern Africa

Source: UNEP (2002), Atlas of International Freshwater Agreements

There are two other on-going multi-lateral agreements being negotiated by the Nile basin countries which are of major importance to the NBI-DSS. These are:

- Agreement on the Nile River Basin Cooperative Framework; and
- Protocol for Data Sharing.

Issues identified by key stakeholders

The following are some of the key water resources related issues that were identified by the stakeholders in the respective countries of the Nile Basin. These issues were categorized into structural and institutional issues.

- Structural Issues
 1. Need to increase water conservation capacity to cope with potential increased variability in extreme events of high floods and droughts

2. Need to supplement Egypt's share of the Nile water through cooperation with the Nile Basin Countries
 3. Optimal use of the available Nile Water resources through minimizing the water losses and obtaining the highest value of crops per water drops
 4. Better Assessment of the potential Nile Water resources and Upper Nile water losses savings potential through cooperation with the Nile Basin Countries
 5. Need to improve flood forecasting & drought prediction through sharing of historical and real-time hydrological & meteorological data with Nile Basin countries
 6. Water quality degradation in terms of health impacts, water born diseases, use of POPS, saltwater intrusion, and sediment transport
 7. Increased energy demand, hydropower inter-connection opportunities with Upper Nile Basin countries, and potential to use carbon credits upstream in Joint hydropower project.
 8. Socio-economic and environmental impacts of planned projects
 9. The effect of climate change on Nile Basin countries' water resources.
- Institutional Issues
1. Need for increased public awareness and local responsibility in coping with water scarcity and in preventing water pollution;
 2. Better communication of water distribution policies to water users organizations for effective planning demand management by individual agricultural water users;
 3. Expediting the process of institutionalizing the legal framework for water users organization and participatory irrigation management of public owned irrigation and drainage systems