

Environmental Impact Assessment for Projects in the Nile Basin Countries

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Abstract

Environmental Impact Assessment (EIA) is a key aspect of many large-scale planning applications. It is a technique which is meant to help in understanding the potential environmental impacts of major development proposals. Unfortunately, the process and the outcome of EIA can be complex and confusing, leaving local communities unsure as to how a development might affect them.

The objective of this research is to provide a strategic environmental framework for the environmentally sustainable development of the Nile River Basin, to improve the understanding of the relationship between water resources development and environmental conservation in the Basin, and to provide a forum to discuss development paths for the Nile with a wide range of stakeholders. Focusing on transboundary issues provides the riparian countries with a major opportunity to make significant progress towards their economic and environmental goals in ways that have proved difficult to achieve independently.

In addition, the paper analyzes some EIAs carried into Egypt, which share the Nile as a common environmental resource with the other Nile basin countries, and discusses how improvements of guidelines and unification of legislation can improve cooperation among these countries.

Finally, the paper recommends an EIA process revision to be implemented for effective EIA practice in the Nile Basin Countries.

Keywords: Nile Basin Countries, Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA), Environmental Management Plan (EMP), Mitigation Measurements

Introduction

The Nile Basin Countries “*Egypt, Sudan, South Sudan, Ethiopia, Uganda, Kenya, Tanzania, Burundi, Rwanda, the Democratic Republic of Congo, and Eritrea (which participates as an “observer”)*” cover an area of 3.17 million km², which represents about 10 percent of the African continent.

Five of these countries are among the poorest in the world. The Nile Basin is home to approximately 200 million people, while 370 million live within the ten riparian States. The Nile region is characterized by high population growth and significant development challenges. At 6,825 km, the Nile is generally regarded as the longest river in the world (Encyclopedia Britannica). It has two main tributaries: **1) the White Nile**, originating from the Equatorial Plateau of East Africa, and **2) the Blue Nile**, with its source in the Ethiopian highlands. Other significant tributaries are the Atbara and the Sobat, both originating in the Ethiopian highlands. All tributaries begin their journeys in relatively humid areas, with an annual rainfall of 1 200 to 1 500 mm. The downstream stretch of the river flows northwards to the Mediterranean through the Sahara Desert. The Blue Nile flows are highly seasonal, the White Nile waters have a steady flow and contribute only 10 to 20 percent of the total Nile runoff. Lake Nasser, a major reservoir on the Sudan-Egypt border, provides inter-annual regulation for Egypt.

The Nile waters play a vital role in the socioeconomic development of the Nile Basin States. Agriculture is the dominant economic sector in most Nile riparian’s, and reliable access to water remains key to increasing agricultural productivity, providing employment, and raising the standards of living of the people residing in the basin. The Nile also represents a vast resource for hydropower generation.

The Nile region is plagued by environmental degradation, armed strife, drought and famine especially in south Sudan. Weak institutions, low financial capacity and inadequate infrastructure conspire to perpetuate poverty. The Nile waters are seen to have great potential as a lever for social and economic development. Collaborative and sustainable development of the shared water resources can attract investment and assist in alleviating poverty. High demographic growth rates and accelerating environmental degradation narrow the window of opportunity for reversing the negative trends in the region.



Source: World Bank
Figure 1. Map of the Nile Basin

Environmental Impact Assessment EIA

The environmental impact assessment (EIA) was first required by the U.S. National Environmental Policy Act, which required environmental impact assessment of all major development projects to determine their potential for adverse effects on the environment. The EIA took a pro-active, preventive approach to environmental management, rather than relying solely on environmental remediation and mitigation. Later the concept found its way into international conventions and has garnered broad acceptance as an effective means to prevent environmental degradation as a result of development projects. Although EIA provisions have not been applied to agricultural development projects, expansion of the application of EIA has

been recommended as one way to reduce adverse impacts of irrigation expansion, including degradation of river basins (Postel 1996).

The first three stages of the impact assessment process—screening, preliminary assessment, and scoping—are extremely important in determining the extent and focus of the impact assessment required. The purpose of screening is to decide whether or not a project requires assessment and, the level assessment necessary required. Past experience shows that certain types of projects are unlikely to have serious adverse environmental impacts. Other types have the potential to cause significant impacts and routinely require a comprehensive EIA. The extent of EIA depends on the scale and complexity of the project and the nature of the local environment. Within each riparian country, guidance to assist with the screening process may take several forms: screening criteria such as size, cost, or location of the project; lists of projects that do or do not usually require an EIA; and checklists of project and environmental conditions that may require further investigation. The types of projects that generally require an EIA include those that involve:

- *Significant change in renewable resources uses*
- *Substantial change in farming or fisheries practice*
- Screening criteria needed to include potential for air, water, and solid hazardous waste discharges.

Strategic environmental assessment.

A Strategic environmental assessment (SEA) is a proactive tool for planning, policy making, and environmental management. It is employed at a higher level and at an earlier stage of management than traditional EIAs. A SEA creates a framework to focus on environmental impact assessment, environmental management, and environmental monitoring.

The SEA Directive applies to a wide range of **public** plans and programs (e.g. On land use, transport, energy, waste, agriculture, etc.). While a few countries have attempted to codify SEA techniques, the limited practical experience available illustrates a range of goals, tools, techniques, and SEA processes.

This process has recently evolved in response to the shortcomings of project-specific EIAs as follows:

- *To focus project-specific EIAs by ensuring that issues are addressed at the appropriate level of policy, plan, or program.*
- *To improve the assessment of cumulative impacts, particularly of policies and large projects that stimulate secondary and many small developments.*
- *To facilitate the application of sustainability principles and guidelines focusing on the maintenance of a chosen level of environmental quality rather than minimizing individual impacts.*

Comparing SEA and EIA: EIAs tend to focus on mitigating the impacts of proposed activities rather than justifying them and determining the appropriate setting. EIA is used reactively to assess specific development proposals. SEAs and EIAs usually apply to different stages of planning and policy making (SEAs earlier, EIAs later) and to different levels of decision-making (SEAs at the policy and planning level, EIAs at the individual project level). This has been referred to as a “tiered approach,” as shown in Figure 2

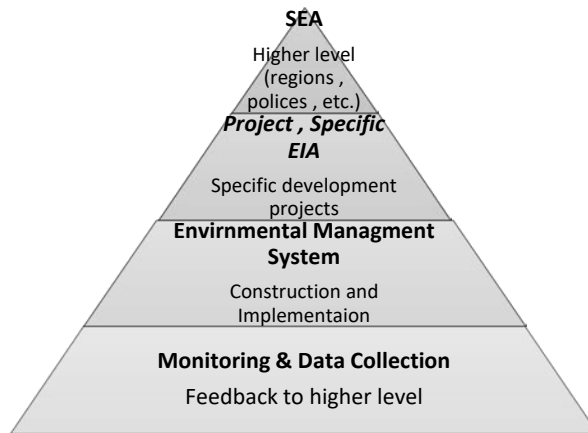


Figure 2. SEA’s Tiered Approach to Create a Framework to Focus on EIA. Environmental Management, and Monitoring

Forces Affecting Environmental Change in the Nile Basin Counties

The Nile Basin nations enjoy economic progress alongside poverty and conflict. A remarkable similarity of environmental problems exists throughout the Basin. The principal problems include deforestation, overgrazing, desertification, pollution from sewage and industrial waste discharge, and loss of habitat. Three main forces underlie the environmental stresses that led to these problems: *(i) population growth, (ii) economic growth, and (iii) ill-advised government policy responses.*

Population growth and distribution in the Basin are dominated by an overall increase in human numbers as well as by a shift toward greater urbanization. The eleven NBI countries together constitute 40 percent of Africa’s population and will experience a substantial increase in human numbers over the coming decades. The Nile Basin’s population will increase disproportionately in urban areas. In four countries—Burundi, Ethiopia, Rwanda, and Uganda—the urban population will double as a percentage of the total. The consequences of this population redistribution will be profound for water management. Urban populations generally consume more water per capita for domestic and industrial use than rural populations. Overall demand for water, therefore, can be expected to increase.

Table 1 and Figure 3: show United Nations Population Estimates for Nile Basin Countries in 2025: Comparing 1995 Population to: Low, Medium, and High for 2025 (in thousands), it is noticed that Egyptian population is the highest since 1995, although the expected studies estimation showed that Ethiopian population will highly increase.

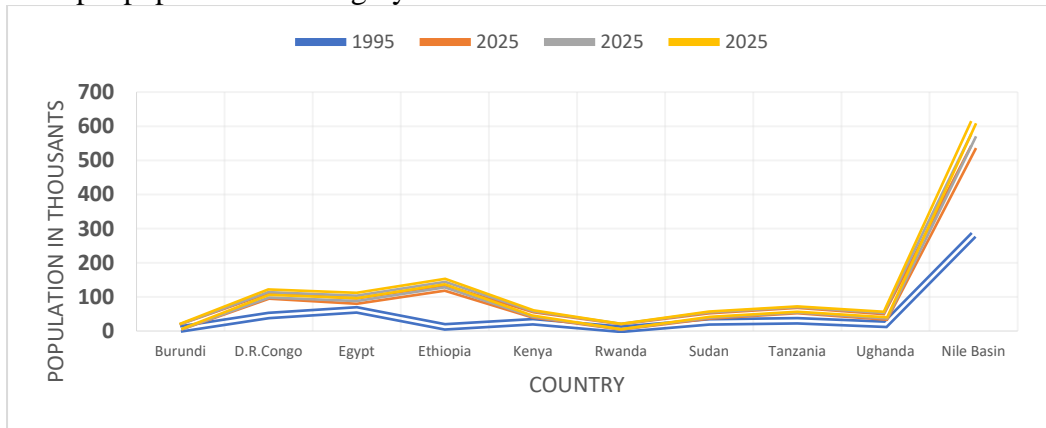


Figure 3: Comparing 1995 Nile Basin Population with Low, Medium, and High Expected Population for 2025

Table 1: United Nations Population Estimates for Nile Basin Countries in 2025: Comparing 1995 Population to: Low, Medium, and High for 2025 (in thousands)

Country	1995 Standard	2025 Low	2025 Medium	2025 High
Burundi	6.0645	11.986	12.341	13.209
D. R. Congo	45.453	102.760	105.925	114.132
Egypt	62.096	87.577	95.766	103.979
Ethiopia	12.245	125.993	136.288	145.072
Kenya	27.150	47.245	50.202	53.129
Rwanda	5.184	12.454	12.981	13.431
Sudan	26.707	44.226	46.850	49.356
Tanzania	30.026	60.309	62.436	64.557
Uganda	19.689	41.165	44.983	48.304
Nile Basin	281.944	539.959	574.276	611.934

Source: United Nations, Department of Economic and Social Affairs, Population Division 1998.

Sustainable Development of the Nile Basin

The Nile Basin is environmentally sensitive. Stretching from the Equator to the Mediterranean Sea, the Nile is a principal flyway for migrating birds that nest along its many marshes, lakes, and tributaries. Its wetlands, forests, and open lands are home to a broad array of flora and fauna. Its natural beauty has attracted tourists for centuries. But increasing population and limited water supply have put stress on both the people of the

Basin as well as the environment table 2 shows Select Environmental and Natural Resource Attributes of the Nile Basin.

Table 2. Select Environmental and Natural Resource Attributes of the Nile Basin

Indicator	Nile Basin	Unit	Reference
Basin area	3,254,555	Km ²	Revenge at al, 1998
Basin Population (UN 1995)	143,200,120	Millions	Revenge at al, 1998
Basin Population density	44	People/km ²	Revenge at al, 1998
Available per capita water	587	CM/year	UNPD, 1999
Major Dams	7	Each	World Bank, 2000
Number of fish species	343	Each	Revenge at al, 1998
Threatened fish species	4	Each	Revenge at al, 1998
Number of mammal species	338	Each	WRI 1999
Threatened mammal species	18	Each	WRI 1999
Protected Areas	5	Percent	Revenge at al, 1998
Wetlands (including rivers and lakes)	6	Percent	Revenge at al, 1998
Arid area	30	Percent	UNDP 1999
Forest	2	Percent	Revenge at al, 1998
Cropland	15	Percent	UNDP 1999
Irrigated Cropland	5	Percent	Revenge at al, 1998
Shrub	4	Percent	UNDP 1999
Grassland	42	Percent	UNDP 1999
Loss of Original Forest	91	Percent	Revenge at al, 1998
Deforestation Rate	6	Percent	Revenge at al, 1998
Eroded area	5	Percent	Revenge at al, 1998
Urban Area	1	Percent	World Bank, 2000

Source: World Bank

Nile Basin Environmental Impact Assessment (EIA) Process and Practice Screening

The use of lists and thresholds remains the most common screening approach in countries possessing enabling legislation and regulations. All Nile Basin countries have categorized different projects depending on the severity of potential impact on the environment.

EIA Report

The review stage of the EIA process is an important quality control feature, because it helps to ensure that information on the environmental impacts of the proposed activity is sufficient before it is used as a basis for decision making (Fuller, 1999). Various methods can be employed to ensure objectivity and effectiveness of EIA review. These include the use of an environmental impact statement (EIS) review criteria, the accreditation of EIS review consultants, the setting up of an independent review body, the

involvement of consultants, public consultations, and the publication of review results (Ahmad & Wood, 2002; Badr, 2009).

In general, all the Nile Basin countries' laws and statutes specify the content of the EIA report in different ways. All of them state that the report should describe the proposed project, its specific purposes, the affected environment, and environmental and health impacts, including impacts on the human and cultural environments. The report is also required to provide an examination and evaluation of alternative solutions that might avoid or at least reduce and mitigate some or all of the adverse environmental impacts identified. With regards to review of the EIA report, each of the EIA systems uses one or more of the review methods in its review process.

The report is reviewed by the Director of Environment whose recommendations are then reviewed by the EIA committee (ROM, 2002). The regulations of Egypt are not specific regarding public participation in the EIA process. Though not mandatory in Egypt, sectoral guidelines specify public participation for full EIA (EEAA, 2009).

In none of the countries reviewed are EIA consultants certified by a regulatory agency, as is the case in the UK and Canada. New EIA regulations in Egypt (Law No. 9 of 2009) and South Africa (DEA, 2010a) require certification/accreditation of environmental practitioners, but they are yet to be implemented.

In recognition of these deficiencies, the high level meeting of the African Ministers Conference on Environment (AMCEN) held in Durban, South Africa in June 1995 identified priorities for immediate action in capacity building for EIA in Africa adapted to the local needs and capacity.

To meet this target, the Capacity Development and Linkages for Environmental Assessment in Africa (CLEAA) was formed in 2000. CLEAA initiated the development of an Environmental Assessment and Management Capacity Building Strategy for Africa. Since then CLEAA, working alongside sub-regional nodes such as SAIEA and international partners, has initiated several capacity building activities on the continent (IUCN, CLEAA & ECA, 2007). It was envisaged that, by 2017 African countries would have the capacity for employing environmental assessment and management tools to promote sustainable development (ECA, 2005). In evaluating the quality of EIA reports, all countries, jurisdictions provide for specified EIA report content and review process.

The Nile Transboundary Environmental Action Project is carried out by NBI, this project came into existence after the Nile basin Countries carried out a participatory Nile Basin Transboundary Environmental Analysis that identified various environmental concerns related to water resources (World Bank, 2003b). The environmental concerns identified included, deforestation that has led to losses of biologically important

habitats, high rates of soil erosion leading to sedimentation of rivers, lakes, and reservoirs; localized water pollution arising from agriculture, industry, mining and domestic effluent; proliferation of aquatic weeds, particularly water hyacinth and wetland land reclamation.

Multilateral and bilateral financial institutions environmental safeguards ,Investment banks like African Development Bank (AfDB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), Japanese Bank for International Cooperation (JBIC), World Bank (WB) have environmental safeguards to ensure that financing of projects is not only based on the precautionary principle, preventative action rather than curative treatment but sustainable development . Although their operational policies and requirements vary in certain respects, the development banks follow a relatively standard procedure for the preparation and approval of an EIA report. Borrowing countries are responsible for the preparation of the EIA, and this requirement possibly more than any other has influenced the introduction and development of EIA in many developing countries. The EIA should examine project alternatives and identify ways of improving project selection, siting, planning, design and implementation by preventing, minimizing, mitigating and compensating for adverse environmental impacts.

Environmental Management Plans (EMPs), Impact Monitoring and Mitigation Measures

EMPs are mandatory in all jurisdictions studied. A plan detailing all likely environmental and other effects of the development and mitigation measures is required in all countries. In Egypt EMPs are required for all categories of projects. Regular compliance monitoring of environmental impacts is a mandatory requirement of Egyptian environmental legislation for projects in operation.

In all African countries EMPs not adequately funded and/or not integrated into project work plans (ECA, 2005). The African Experts Workshop on effectiveness of EIA systems held in Ethiopia in April 2007 recommended that governments, donors and partners make adequate financing of mitigation plans and implementation of EMPs, a condition for environmental approvals (IUCN et al., 2007).

Follow-up monitoring of impacts once the project is in operation is mandatory in all jurisdictions. Proponents are required to keep written records of the environmental impact of their activities. In Egypt, Environmental Management Units (EMUs) and regional offices of the EEAA undertake periodic follow-up inspections checking compliance with environmental standards (EEAA, 1996).

There is a general lack of post-decision monitoring once the proposed development is approved. However, in practice monitoring usually takes place in response to environmental complaints or major disasters that arise. Moreover, monitoring is costly and requires well-trained personnel to conduct it effectively (El-Fadl& El-Fadel, 2004). The information management system of many developing countries, including the ones reviewed, makes it difficult to access accurate information to establish environmental baselines. This increases subjectivity of environmental impact decisions since they are not based on rigorous scientific analysis (ECA, 2005).

None of the countries reviewed have any provision in law or an administrative measure aimed at incorporating experiences and lessons learned during the EIA process into existing processes. Generally, there is an absence of an independent regulatory body, outside the competent authority, to assess the overall effectiveness of the EIA system. This deficiency assumes the prevailing systems are sufficient, creating a closed-loop situation. Since EIA is a human-managed process it is crucial that feedback is obtained by monitoring the whole EIA system. Therefore ,it is important to consider developing sets of sound environmental quality norms and standards to support EIA implementation where the EIA process reveals a weakness or lack of definition of an environmental quality standard.

Factors Important in Project Appraisal

Watersheds and sub-basins of the Nile are well-defined systems that are the logical focus of natural resource management. Watersheds facilitate analysis and our understanding of land and water relationships. Integrated watershed management maintains that understanding the welfare of people and their use of watershed units creates a cumulative effect of improving the condition of the sub-basins and, subsequently, the condition of the overall Nile , Table 7 represent the Percentage of Population with Access to Safe Water, Adequate Sanitation, and Health Services , and it is noticed that all NB countries need more care about access to sanitation especially in rural areas , also there is a gap between accessibility to water and sanitation which increase a health hazards .

Table 8 shows a Current Status of Water Quality Control Policies and Legislation of the Nile Basin Countries it is obvious that most of NB countries need surface water monitoring program although most of countries have a water quality management legislations.

Most Nile Basin countries have environmental legislation governing water quality and the protection of the environment, although many have yet to establish ambient water quality standards Table 4 shows the Current

Status of Legislative Requirements for Environmental Impact Assessment for Nile Basin Countries.

There appears to be few links between discharge permitting and in-stream standards. While some major point sources are subject to environmental permitting, such requirements do not apply throughout the Basin. The approaches used in each country generally follow norms established in the international community. The same holds true for environmental impact assessment (EIA) requirements. Every riparian country has an EIA policy if not yet a law Table 3 represents the Environmental Threats in the Nile Basin by Category, also Table 5 shows Major Industrial Activities in the Nile Basin, and Table 6 shows the Main Environmental Threats in the Nile Basin

The respective countries approach is close enough in principle that they could serve as building blocks to base common environmental goals and objectives for management of the Nile River system. Monitoring and data archiving represents an important element in effective transboundary environmental management. Although environmental information can be sensitive because many countries believe such information affects national security interests. Sharing the knowledge gained by monitoring and evaluating environmental information is nevertheless critical to understanding upstream-downstream linkages and working toward improving the health and productivity of the Basin. There is less sensitivity about sharing knowledge than sharing data.

An excellent network of universities exists in the Nile Basin, which could form the basis for a consortium of networked environmental monitoring and analysis centers.

Table 3: Environmental Threats in the Nile Basin by Category

Land Degradation Deforestation Overgrazing Riverbank and shoreline Degradation Loss of fertility	Water degradation Siltation Wetland destruction Nutrients loads Urban and industrial wastes Eutrophication Disease
Biodiversity Loss Bird species Fish species Large animal’s species Exotic species and weeds Domesticated plant species	Natural and Man-Made Disasters Flood Drought Refugee displacement Accidents and spills

Table 4: Current Status of Legislative Requirements for Environmental Impact Assessment for Nile Basin Countries

Country	Status of EIA requirements in legal and policy framework	Dedicated institutional arrangement	Irrigation and agricultural expansion included in provisions
Burundi	Accepted in policy, legal framework under development	No	No
D.R.Congo	Specific legislation for EIA	No	No
Egypt	EIA requirements as part of law No.4	Ministry of Environment	No
Ethiopia	legal framework under development	No	No
Kenya	Recently adapted environment legislation	Ministry of Environment	Yes
Rwanda	legal framework under development	No	No
Sudan	legal framework under development	No	No
Tanzania	EIA provisions drafted, law not yet adapted	No	Yes
Uganda	EIA provision part of environment law	National Environment Management Agency	Yes

Source: In-country stakeholder interviews and national water, environment, and natural resource documents.

Table 5: Major Industrial Activities in the Nile Basin

Country	Industrial Activity
Burundi	Light industrial such as food processing, shoes, soap, clothing
D.R.Congo	Mineral processing, textile, food processing, cement, beverages
Egypt	Heavy industrials, cement, ferrous and nonferrous metals, tire manufacturing, petroleum refining, petrochemicals, cotton textile
Eritrea	Food processing, beverages, clothing, textile
Ethiopia	Food processing, beverages, textile, chemicals, metal processing, cement
Kenya	Small-scale manufacture of consumer goods, cigarettes, cement, oil refining, food, other agricultural processing
Rwanda	Agricultural processing, beverages, soap, shoes, furniture, textile, cigarette, cement
Sudan	Food and agricultural processing, cotton ginning, edible oils, sugar, distilling soap, shoes, cement, petroleum refining
Tanzania	Agricultural processing, mining, oil refining, cement, fertilizers
Uganda	Sugar, brewing, tobacco, cotton textile, cement, mining and mineral processing

Table 6 : Main Environmental Threats in the Nile Basin

Country	Principal Threats
Burundi	Deforestation, soil erosion, habitat loss, farming on marginal lands
D.R.Congo	Water pollution, deforestation, soil erosion, wildlife poaching
Egypt	Water pollution, air pollution, filling of wetlands, desertification, waterlogging and soil salinity

Ethiopia	Deforestation, overgrazing, soil erosion, desertification
Kenya	Water pollution, nonpoint pollution from farms, deforestation, desertification, soil erosion, sedimentation, encroachment on wet land and lakesides
Rwanada	Soil erosion, desertification, poaching, overgrazing, degradation from human resettlement
Sudan	Soil erosion, desertification, shortage of potable water, wildlife hunting
Tanzania	Deforestation, soil degradation, desertification, water pollution, poaching, shortage of potable water
Uganda	Drainage of wetlands, deforestation, soil erosion, encroachment into marginal lakeshore and riverine ecosystems, and protected areas point and nonpoint pollution.

Table 7: Percentage of Population with Access to Safe Water, Adequate Sanitation, and Health Services

Country	Access to Safe Drinking Water %			Access to Adequate Sanitation %			Access to Health Services %		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Burundi	93	54	59	60	51	51	100	79	80
D.R.Congo	89	26	42	53	6	18	40	17	26
Egypt	*	*	79	*	*	32	100	99	99
Ethiopia	91	19	25	97	7	19	*	*	46
Kenya	67	49	53	69	81	77	*	*	77
Rwanda	*	79	*	*	85	*	*	*	80
Sudan	84	41	60	79	4	22	*	*	70
Tanzania	73	29	38	96	84	86	*	*	42
Uganda	60	35	38	96	47	64	42	42	49

Source: World Bank, African Development Indicators 2000.

Table 8: Current Status of Water Quality Control Policies and Legislation of the Nile Basin Countries

	Burundi	D.R. Congo	Egypt	Ethiopia	Kenya	Rwanda	Sudan	Tanzania	Uganda
WRM Policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oversight agency	Ministry of Environment		Ministry of water resource and irrigation	Ministry of water resources	Ministry of Environment	Ministry of hydropower and water with support from Ministry of Environment and human settlements	Ministry of water resource - irrigation and Electricity	Proposed National Environment Management Agency	National Environmental Management Agency
Status of WQ Manage	Under development	Under development	Law No.48	Under development	Recently adapted environ	Water law under	Under development	New laws drafted	Laws adapted for

ment legislatio n					mental legislatio n, water law near adaptatio n	review		based on harmoni zation effort. Not yet adapted	environm ental Manage ment and water resources manage ment
Different ial surface water standards based on use designati on	No	No	Yes	Yes	Yes	No	No	In draft Law	Yes
Surface water quality monitori ng program	No	No	Yes	No	No	No	No	No	Yes
Environ mental uses considere d in water rights permittin g	No	No	No	No	No	No	No	No	Yes

Source: In-country stakeholder interviews and national water, environment, and natural resource document

Environment Details Requirement for Dam Projects along the Nile

- Examine details of land use as per Master Plan and land use around 10 km radius of the project site. Analysis should be made based on latest satellite imagery for land use with raw images. Check on flood plain of any river.
- Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/ villages and present status of such activities.
- Examine baseline environmental quality along with projected incremental load due to the project.
- Environmental data to be considered in relation to the project development would be
 - (a) *land,*
 - (b) *ground water,*
 - (c) *surface water,*
 - (d) *air,*
 - (e) *bio-diversity,*
 - (f) *noise and vibrations,*
 - (g) *socio economic and health.*

- Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area. Any obstruction of the same by the project
- Submit the details of the trees to be felled for the project.
- Submit the present land use and permission required for any conversion such as forest, agriculture etc.
- Submit Roles and responsibility of the developer etc. for compliance of environmental regulations under the provisions of EP Act.
- Ground water classification as per the Central Ground Water Authority.
- Examine the details of Source of water, water requirement, and prepare a water balance chart.
- Rain water harvesting proposals should be made with due safeguards for ground water quality.
- Examine soil characteristics and depth of ground water table for rainwater harvesting.
- Examine road/rail connectivity to the project site and impact on the traffic due to the proposed project.
- Present and future traffic and transport facilities for the region should be analyzed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.
- A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.
- Examine the details of transport of materials for construction which should include source and availability.
- Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.
- Submit details of a comprehensive Disaster Management Plan including emergency evacuation during natural and man-made disaster.
- Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- A complete study on the environmental impact of the project on the countries which could be affected (within construction / after construction, and within storage period).
- Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure.

Egyptian Environmental Impact Assessment Polices

Egyptian environmental Institutional Set-up

▪ **The Ministry of State for Environmental Affairs:**

In 1997, H.E. Nadia Makram Ebeid was assigned the responsibilities of Egypt's first full time Minister of State for Environmental Affairs, as stated by the Presidential Decree number 275/1997. Since then, the Ministry has played a central role within the Government of Egypt for the definition of environmental policies and the setting of environmental priorities, as well as designing, actively supporting and implementing initiatives within the context of sustainable development. This is carried out in close collaboration with national and international development partners.

The Egyptian Environmental Affairs Agency:

The Egyptian Environmental Affairs Agency, originally established in 1982, was restructured with new mandates by Law 4 /1994 for the protection of the environment. At its central level, EEAA presents the executive arm of the Ministry of State for Environmental Affairs. Regionally, it is currently in the process of establishing eight Regional Branch Offices (RBO's) throughout the country, as part of its strategy for decentralization of environmental management. The organization of EEAA into sectors and departments is a reflection of the lines of action necessary for environmental protection.

The National Environmental Action Plan

The preparation of the National Environmental Action Plan (NEAP) for Egypt, initiated in 1999, is currently entering its final phase. The primary aim of the NEAP is to provide support for the introduction of a participatory and demand-driven environmental planning process, favorable to sustainable development. The development of the NEAP, for the identification of environmental priorities, and initiatives, has been carried out through a consultative process involving key stakeholders from central and local government as well as interest groups and organizations.

Egyptian Environmental Impact Assessment System

Since its introduction in 1994, the Environmental Impact Assessment (EIA) system in Egypt has progressed significantly. Efforts by EEAA have led to steady improvements of all aspects of the EIA system, from preparation to review and decision making. The last two years have experienced a dramatic increase in the number of EIA studies passing through this system as well as an extension of the system to an increased number of local competent administrative authorities (CAA's), responsible for applying the legislative requirements for the conduct of EIA studies for the different projects and initiatives falling within their jurisdiction.

It entailed some modifications to the division between the three categories A, B, and C, varying in the severity of possible environmental impacts and the expansion of the lists of facilities in each category with the purpose of minimizing category errors. The development of sector-specific EIA forms has taken place. In 2000/2001, specific B category forms were developed for the petroleum and tourism sectors.

Table 9: Distribution of EIA's by Sector (Year 2000)

Sector	Total Number of EIA's	A Category EIA's	B Category EIA's	C Category EIA's
Industry	6873	167	6686	20
Services	2596	261	2335	----
Agriculture	403	6	397	----
Tourism	168	3	22	143
Energy/Petroleum (production, processing, transportation)	71	----	7	64
Communications	37	18	19	----
Infrastructure (roads, potable water, wastewater)	30	1	23	6
Health	25	----	25	----
Energy/Electricity	5	----	3	2
Housing and Reconstruction	2	----	2	----
Ports	1	----	----	1
Transportation	1	----	----	1
Others	103	24	79	-----
Total	10315	480	9598	273

Other activities include the development of specifications for the construction of mobile telephone towers. The Ministries of Communication and Health and the telephone networks operators collaborated to prevent possible adverse environmental and health impacts. Capacity building was also carried out with a focus on CAA's staff members.

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Infrastructure (roads, potable water, wastewater)	30	1	23	6
Health	25	----	25	----
Energy/Electricity	5	----	3	2
Housing and Reconstruction	2	----	2	----
Ports	1	----	----	1
Transportation	1	----	----	1
Others	103	24	79	----
Total	10315	480	9598	273

Conclusion and recommendations

- From the foregoing analyses, EIA may not directly reduce poverty, bring development or mitigate poor environmental management and performance for the continent. Some of the factors militating against sound environmental management including high population growth, illiteracy, and low level of environmental awareness need to be addressed.
- Local pressure on decision-makers to protect the environment is vital to bringing about accountability to the sector. An informed population is more likely to demand reducing the negative impacts of development activities. Using EIA as a decision-making tool to promote sound environmental management and sustainability would remain a mirage to the African continent.
- EIA report review and public participation are critical stages requiring the involvement and inputs from well-informed and interested stakeholders. Most EIA reports are big documents written in technical language unintelligible to most affected and interested stakeholders. Communities tend not to benefit from projects located in their area due to lack of knowledge, corruption, and lack of accountability. These handicaps could be redressed through community empowerment to enable them to understand and assess information. Communities should be empowered to ensure a more collective and meaningful participation in the impact assessment process.
- Public participation and consideration of alternative project designs better promote sustainable development if conducted at the project planning phase. It requires the elaboration of a comprehensive legal framework and guidelines at a more strategic level that is consistent with both local and national development priorities as well as investors' goals.
- The EIA Guidelines of the NB countries do not adequately address the practical methods of assessing the impact at every stage of the EIA process and as such leave a lot of discretion to the developer.

▪ In the NB countries, the EIA process is virtually the same which consists of three major steps: Screening, Scoping, EI Study and EI Review. The following are weaknesses to be addressed:

▪ The guidelines leave a lot of discretion to the developer in carrying out an EIA.

▪ They do not contain a description of the methods or tools to be applied when carrying out an EIA study at any stage of the process.

The following recommendations are proposed

▪ Continuation of the development of tools of analysis

▪ Development of Unified EIA Guidelines for Nile Basin countries that address above mentioned weaknesses in the EIA process.

▪ Trainings, for professionals in the Nile Basin countries

▪ Development Data Bases for monitoring and evaluating of environment in the Nile Basin countries

▪ The use of scientific tools for impact quantification can be complicated, time consuming and very costly process, yet the development of empirical models can be a very useful tool during the screening and mitigation stages of EIA, however this tool need the following:

▪ Monitoring of river engineering structures in the Nile basin countries to collect a database of environmental correlations between parameters and impacts, between size and impact, between uses and impacts, and between local conditions and impacts.

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