

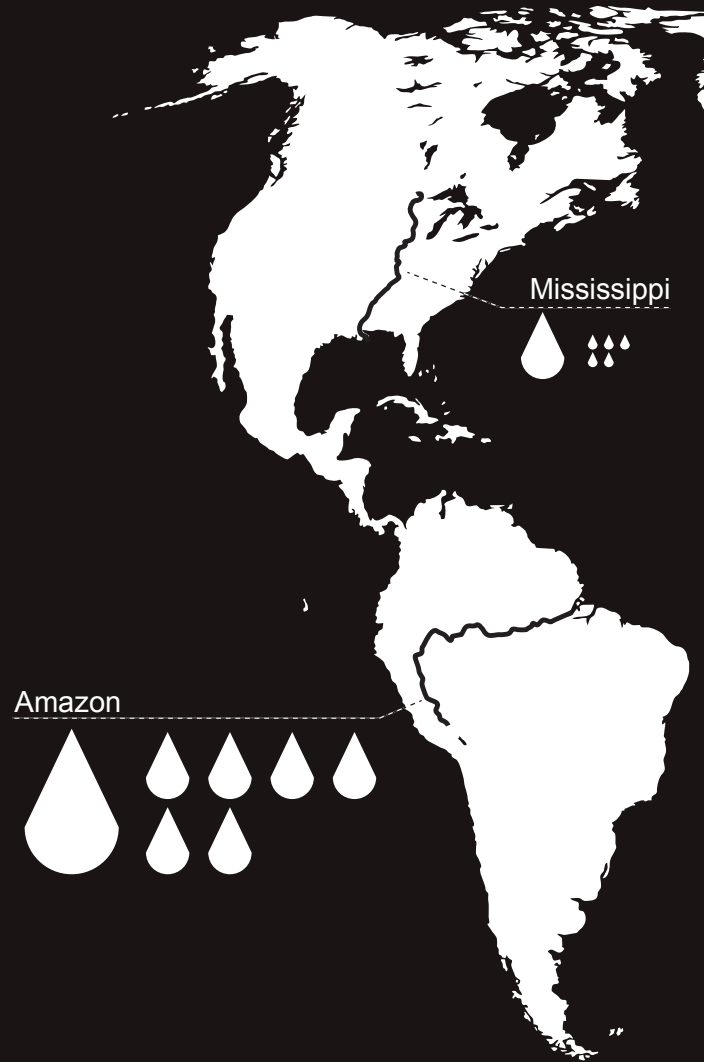
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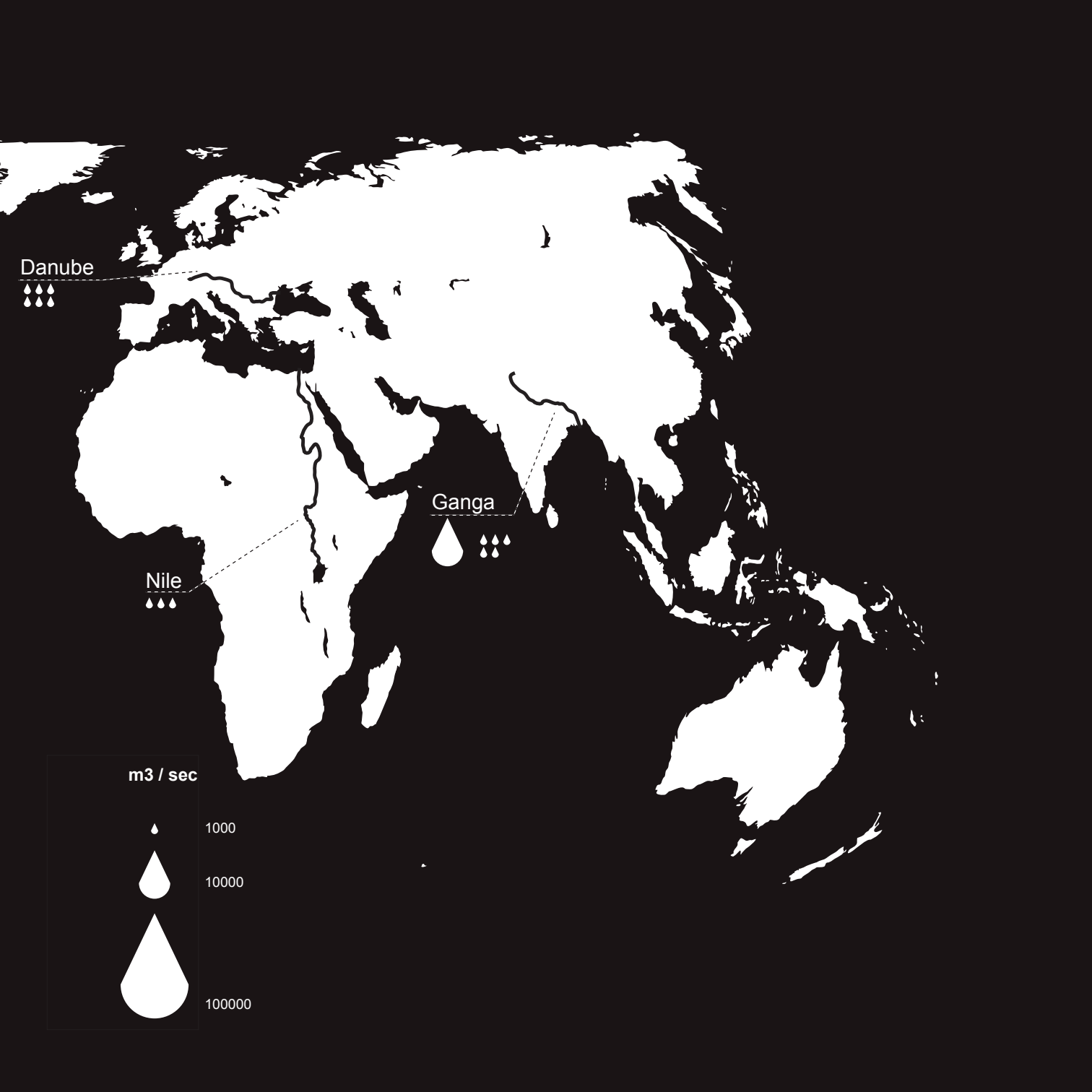
EGYPT & THE NILE

ENVIRONMENT AND SECURITY

ZOÏ REPORT 2 / 2012

Size of main rivers
mean annual discharge





Danube



Ganga



Nile



m³ / sec



1000



10000



100000

Egypt



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Introduction: Egypt, the Gift of the Nile

Without doubt, the Nile is the greatest of all rivers. The Nile is considered the world's longest river, but it is not its length that makes it great, nor the volume of water it carries. The Nile's volume is comparable to the Rhine,¹ just 2 per cent of the Amazon's volume, or 15 per cent of the Mississippi's. What distinguishes the Nile is the role it has played in nurturing Egyptian civilization since the dawn of history, and the broader impact it has had on all human civilization – and on our imagination.

Running north from the Great Lakes of central Africa, the White Nile meets the Blue Nile – which originates in the Ethiopian highlands – near the Sudanese capital, Khartoum. From there the river crosses desert until it reaches Cairo, the Egyptian capital, where it branches out to form the Nile Delta, the most fertile land in all of Africa, thanks to the silt deposited by the river. From al-Atbara River north of Khartoum to the Mediterranean Sea, the Nile flows 2,700 kilometres without receiving any tributaries. Without the Nile, northern Sudan and Egypt would be no more than a desert, and ancient human civilizations would not have emerged. Herodotus, visiting Egypt in the fifth century, was puzzled when he was told that the Nile flooding in the summer was caused by the melting of snow, which he did not believe to exist in the heat of the Nubian desert. The Greek historian is famous for his expression: “Egypt is the gift of the Nile”, an expression that has dominated the imaginations of visitors to Egypt ever since.

The fortunes of Egypt have been intimately associated with the quantity of Nile waters. Pharaonic dynasties of the past thrived and prospered when the Nile waters were regular. When the river flooded it

washed away plantations and villages, causing death and havoc. But the worst happened when drought came in successive years: “With the river's diminution, the pharaohs' authority dissolved into feudal anarchy, and banditry, wanton destruction, and civil war plagued the land ... Without water, neither the competent nor the corrupt could govern, and Egypt disintegrated into precincts ruled by warlord officials.”²

Throughout history Egyptians lacked knowledge about the source of the Nile, and the reasons its flow fluctuated. They roughly knew the Nile came from the south, and that the river crossed Ethiopia, but they did not know more. Herodotus thought it originated in Libya and flowed across Ethiopia to reach Egypt. In the second century, Roman Emperor Nero sent two centurions on expedition to seek the source of the Nile. In the same era, Greek-Egyptian scientist Ptolemy projected the source of the Nile as originating from the Moon Mountains, which he placed south of the equator. In 1839, Mohammad Ali, the ruler of Egypt, sent another expedition that could not overcome the great physical barrier of the Sudd – the huge marshlands of South Sudan. This lack of knowledge made the Egyptians afraid and distrustful of their southern neighbours, especially the emperors of Abyssinia. The desire to discover the source of the Nile motivated expeditions until several adventurers finally reached the heights of Ethiopia and Rwanda and mapped the springs where the Nile's journey begins. The ancient fear of low river flow continues in our age of scientific knowledge, even after the construction of the High Dam in Aswan, which was meant to end the fluctuation of the river flow and to provide Egypt and its cotton fields with foreseeable and reliable quantities of water.

¹ Robert O. Collins, *The Nile*, Yale University Press, New Haven, 2002, page 11.

² Collins, *op. cit.*, page 19.

According to the latest measurements, the Nile travels 6,718 kilometres starting from Rukaraa, a tributary of the Kagera River in Rwanda,³ before entering the Mediterranean. The White Nile is the longer of the two branches, and pours out of Lake Victoria where year-round rainfall maintains its year-round flow. The Blue Nile flows in a flush in the rainy season of the Ethiopian highlands, from June to September, and caused the floods observed by Herodotus. The White Nile is a fast-flowing river with several picturesque falls before it enters Lake Albert bordering Uganda in the east and Congo to the west, and then moving northwards to South Sudan and the great swamps of the Sudd where the river is known as Bahr al-Jabal, the Mountain River. In the Sudd the river slowly loses its force as it spreads around the marshes, and over half its water evaporates. The surface area of the marshes is variable, depending on rainfall in central Africa and the amount of water the White Nile brings each year. The Sudd, with thick papyrus and aquatic plants growing on its surface, and rich oil deposits underneath, remained a barrier to human exploration until Sir William Garstin succeeded in 1905 to travel as far as Bahr al-Jabal. It was he who suggested digging a bypass canal, known as the Garstin Cut, and later revived as the Jongeli Canal, a project that Sudan wanted to realize in the 1950s, before the country succumbed to years of fraternal wars.

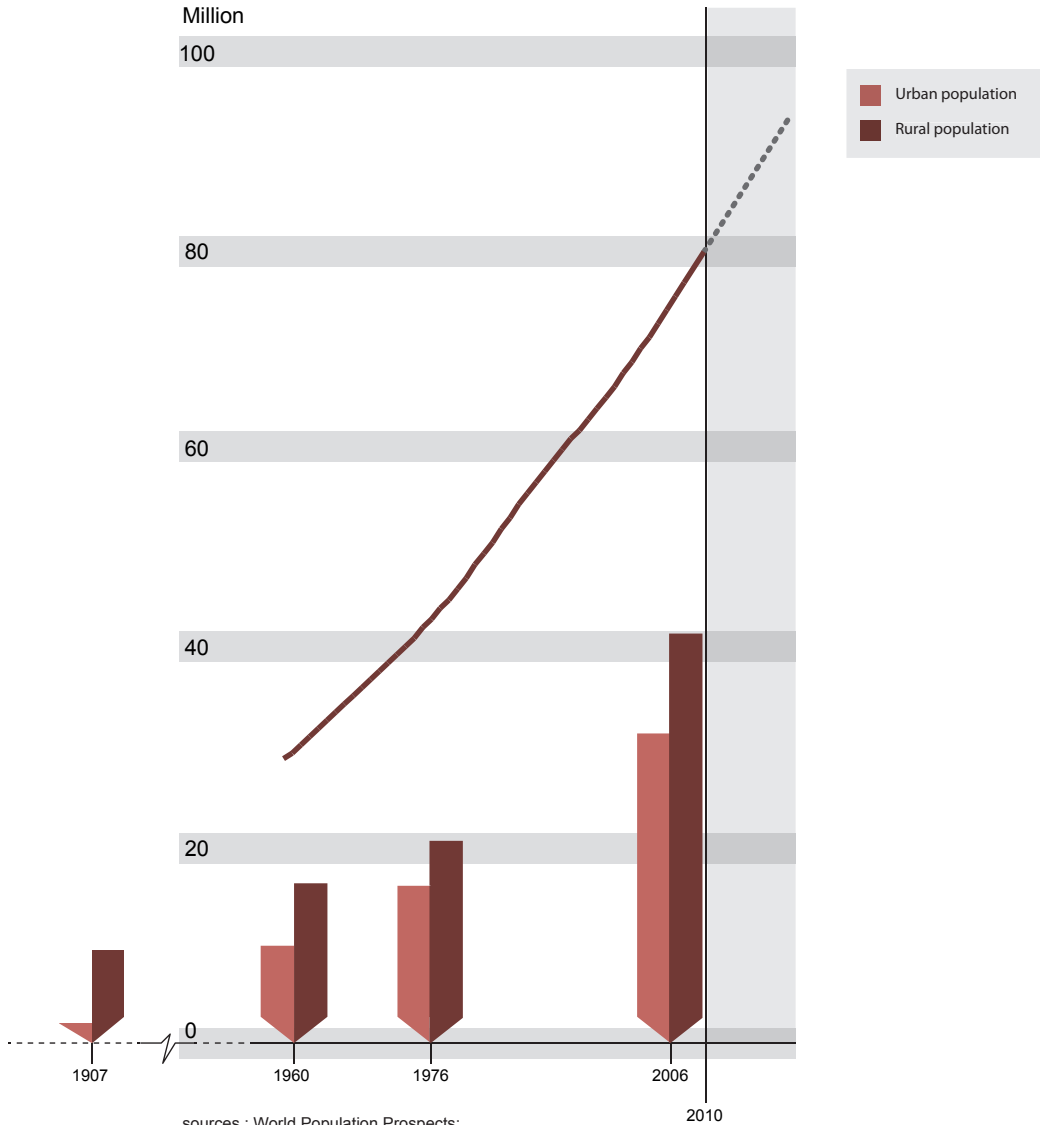
The Blue Nile originates at Lake Tana in Ethiopia, and flows 1,400 kilometres before reaching Khartoum and joining the remnants of the White Nile. The rainfall collected in the Ethiopian highlands supplies much of the Nile flow north through northern Sudan and Egypt, bringing life, sediments as well as some anxiety to Egypt. North of Khartoum the Nile takes an S-shape and goes through six cataracts, the last one being to the south of Aswan. From there on, and for 1,200 kilometres, the Nile is navigable until it reaches the Delta and the Mediterranean.

Regular articles in the Egyptian media express fear and anxiety over the fate of Nile waters. In recent years there have been many declarations that any threat to Egypt's water rights was a matter of war and peace. Following the 2011 revolution and the overthrow of Hosni Mubarak, the discourse has shifted to accusing the ancien regime of ignoring relations with the Nile basin countries, leading to failures in foreign policy. In post-revolutionary Egypt, there is hope that the past errors can be corrected. Whatever the case, one should not forget that those fears are not new but intimately linked to the history of Egypt, and to the magical powers of the Nile and its mysterious sources. This past heritage and mass psychology built through historical experience adds new realities to the modern challenges – environmental limits, population growth and increasing demand for food and energy – that need contemporary answers.

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3 Henri J. Dumont, "A Description of the Nile Basin, and a Synopsis of its History, Ecology, Biogeography, Hydrology, and Natural Resource, in Henry J. Dumont (ed.) *The Nile, Origin, Environment, Limnology, and Human Use*, Springer, 2009, page 2.

Egypt population trends and projections

absolute population and urban / rural population



sources : World Population Prospects:
The 2008 Revision | United Nations Population Division



Diplomacy and Development

Two international agreements regulate the Nile water regime. The first was signed in 1929 between Egypt and the British Empire at a time when much of the Nile basin was under British rule. The second was signed in 1959 by Egypt and Sudan. It confirmed Egypt's historical rights to Nile waters, and allocated 55.5 billion cubic metres of water annually to Egypt, and 18.5 billion cubic metres to Sudan.⁴ The 1959 agreement permitted Egypt to construct the High Dam, and Sudan to construct the Rosaries Dam on the Blue Nile and the Khashm el-Girba Dam on the Atbara River (this later to provide irrigation for the Nubian population displaced from the banks of the Nile due to the construction of the High Dam).⁵

In the 1950s, Ethiopian Emperor, Haile Selassie, objected in numerous diplomatic correspondences sent to both Cairo and to Western nations concerning the funding of the High Dam project, insisting on Ethiopia's rights to the Nile waters that were collected on its own territory. Addis Ababa also objected to the 1959 agreement between Egypt and Sudan, and considers the agreement not binding on Ethiopia.

What was largely a theoretical conflict based on principles of sovereignty and water rights has acquired some urgency of late. Nile basin states increasingly look to the Nile as a source for their economic development

and as a crucial factor in their ability to feed their growing and malnourished populations. In 1999 the Nile Basin Initiative (NBI)⁶ was launched by nine countries sharing the river basin, aiming to achieve equitable use of – and benefit from – their common resources. Supported by international donors such as the World Bank, the Initiative encourages the African countries to find negotiated solutions to the controversy of Nile water-sharing, and to develop common economic development projects.

In 2009–2010 the NBI entered a turbulent period. After years of negotiations, Egypt refused to sign the draft agreement without adding two points – that its current share of Nile waters would not be questioned, and any project upstream would receive Egyptian agreement before realization. The NBI summit held on April 13, 2010, in Sharam al-Sheikh in Egypt failed to find a solution that satisfied all parties. Egypt insisted on its “historical rights” and asserted that international agreements were on its side, while upstream countries accused Egypt of dragging out the negotiations. Soon after the failure of NBI, four Nile basin countries (Uganda, Rwanda, Tanzania and Ethiopia) announced a new initiative, the Cooperative Framework Agreement, which by March 2011 had the signatures of eight upstream countries, but not those of Sudan and Egypt.

4 The 1959 agreement assumed the total annual Nile flow at Aswan to be 84 billion cubic meters, divided between Egypt (55.5 bcm) Sudan (18.5 bcm) and 10 evaporation estimated to be 10 bcm.

5 “Agreement between Republic of the Sudan and the United Arab Republic for the full utilization of Nile waters signed at Cairo, 8 November 1959”, is available at: <http://www.fao.org/docrep/W7414B/w7414b13.htm>

6 See the official web site of the NBI: <http://www.nilebasin.org/newsite/>

The Egyptian side argues that the Nile basin collects some 1,660 billion cubic metres of rainfall annually, of which only 85 billion cubic metres flow into Egypt. Moreover, the Nile is the exclusive source of water for Egypt, and provides over 95 per cent of the country's total freshwater resources. Therefore, any development projects in upstream countries can and should be done without threatening Egypt's water quota as defined by the 1959 agreement, and upstream countries instead of losing time in negotiating over Egypt's share should concentrate their efforts on developing other sources.⁷ The 55.5 billion cubic metres of water that is Egypt's annual share of Nile waters is, in the words of Mahmoud Abu Zied, former Egyptian minister of Public Works and Water Resources, "only six to eight per cent of total rainfall over the Nile Basin. Much of the rest is lost, some through evapotranspiration – the consumption by plants – while yet more seeps into the ground creating ground water... The main issue for downstream countries is that any developments upstream should not impact on rights."⁸

Egyptian officials and the public are weary of foreign intervention in Nile affairs. They particularly fear Israeli intervention and influence in the Horn of Africa, which they see as part of Israeli policy to put pressure on Egypt.⁹ In addition, the global increase in food and

energy prices has created a new "scramble for Africa",¹⁰ with major countries such as China, Korea, India and Saudi Arabia – among others – investing in agricultural projects and leasing land in Africa, including in Ethiopia. Unregulated and market-driven, these investments increase the competition for resources in the Nile basin, including the demand for water and energy.

Ethiopia, on the other hand, argues that 86 per cent of the Nile is collected on Ethiopian soil, that the country does not receive a proportional benefit, and that consequently its population periodically suffers from hunger as a result of drought and crop failure.¹¹ Ethiopia currently produces 400 MW of hydropower, but its potential is estimated at 6 GW,¹² for which it needs important infrastructure development and the construction of a number of dams. The need for food production increases to the south: some 5 per cent of Egypt's population is under-nourished, 20 per cent of Sudan's population, and over 50 per cent of Ethiopia's population.¹³

Pressure for a basin-wide agreement increased with the beginning of construction of what Ethiopia calls "The Great Millennium Dam" in April 2011. The planned dam is the biggest of its kind on the African continent, and will be followed by three other major dams in

7 See, for example, the argument of May al-Shafe'i, "Miyah al-neel fi mun'ataf tariikh bayn duwal al-manba' wa dawlatay al-msab", (Arabic: Nile waters in historic crossroads between upstream countries and the two downstream countries), al-Hayat, May 12, 2010: <http://international.daralhayat.com/internationalarticle/140302>

8 Fatemah Farag, "Managing turbulent waters", al-Ahram Weekly, 16-22 September, 1999: <http://weekly.ahram.org.eg/1999/447/spec3.htm>

9 Mahmoud Juma, "Israeel touthir al-qalaqel bih'awd al-neel" (Arabic: Israel is causing worries in the Nile basin), al-Jazeera, June 18, 2009 : http://www.aljazeera.net/NR/exeres/4BC1105F-EC7A-46ED-96AB-B533C94D7C32.htm?wbc_purpose=Basic

10 Lester R. Brown, "When the Nile Runs Dry", New York Times, June 1, 2011: http://www.nytimes.com/2011/06/02/opinion/02Brown.html?_r=2

11 Kamal Idris, "Wazeer al-kharijiya al-ethyobi: laysa min al-'adl an nuntej 86%min miyah al-neel wayamoot muwatinuna biljafaf" (Arabic: Ethiopian foreign minister: It is not just that we produce 86% of Nile waters and our citizens die of draught", al-Sharq al-Awsat, November 13, 2010: <http://aawsat.com/details.asp?section=4&issueno=11673&article=595084&feature>

12 Henri J. Dumont, op. cit., page 17.

13 Simon A. Mason, Tobias Hagmann, Christine Bichsel, Eva Ludi, and Yacob Arsano, "Linkages Between Sub-national and International Water Conflicts: The Eastern Nile Basin", in Facing Global Environmental Challenge, Hans Günter Brauch et al (eds.), Springer, Berlin, 2009, page 333.

Ethiopia. The Great Millennium Dam will be constructed at the lower basin of the Blue Nile at a cost of €3.3 billion, and will produce 5.25 MW of electricity, tripling Ethiopian power generation capacity and enabling Ethiopia to export electricity to neighbouring countries.¹⁴ The reservoir is projected to have a capacity of 63 billion cubic metres. Ethiopian Prime Minister, Meles Zenawi, said that because of Egyptian and Sudanese pressures, international financiers are wary of the project, forcing the country to rely on its own resources by raising taxes and issuing treasury bonds.¹⁵ Many in Egypt fear that this and other projected dams upstream will retain water not only for power generation, but also for irrigation projects that would reduce the quantities of water flowing northwards. “Egypt and Sudan fear that any development upstream will reduce their share of the Nile waters,” according to Rami Lotfi, an environmental expert in Cairo who is preparing a dissertation on NBI.¹⁶

For three decades politicians in Egypt held bellicose positions against the upstream countries that question the current international agreements on the allocation of Nile water. In 1978, President Anwar Sadat warned upstream countries against touching his country’s share of the Nile waters: “We depend upon the Nile 100 per cent in our life, so if anyone, at any moment thinks of depriving us of our life, we shall never hesitate to go to war.”¹⁷ Such threatening remarks have

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14 The figures are from: “Great Millennium Dam Moves Ethiopia”, from the official web site of Grand Millennium Dam : <http://grandmillennium-dam.net/great-millennium-dam-moves-ethiopia/>

15 News Dire, “Despite Controversy, Ethiopia Goes ahead with \$4.8B Grand Millennium Dam”, June 15, 2011: <http://www.newsdire.com/news/1864-despite-controversy-ethiopia-goes-ahead-with-48b-grand-millennium-dam.html>

16 Author interview with Rami Lotfi, Cairo, June 23, 2011.

17 Quoted in: Patricia Kameri-Mbote and Kithure Kindiki, “Water and Food Security in the Nile River Basin: Perspectives of Governments and NGOs of Upstream Countries”, in *Facing Global Environmental Challenge*, Hans Günther Brauch et al (eds.), Springer, Berlin, 2009, page 655.

continued right up to the 2011 revolution in Egypt. After the revolution, the mood among Egyptian intelligentsia seems to have changed. Many among them accuse the Mubarak regime of not having paid enough attention to the African nations, the source of the Nile waters. “Who lost the Nile!!” asked one angry commentator.¹⁸ “Egypt was indifferent towards African countries,” said Omar Elbadawy, a water engineer who follows the Nile discussions. “This was a failure of our diplomacy.”¹⁹ These observers consider the inability to reach a negotiated agreement with the upstream countries to be one of the major failures of the old regime. Many experts also consider the NBI format to be unfavourable, since it forced Egypt – the downstream country – to oppose projects of the upstream states, thus creating opposition between Egypt and Sudan on one side, and the upstream countries on the other. “Egypt should have sought bilateral solutions, rather than joining the initiative,” said one expert in Alexandria. The emergence of South Sudan as a sovereign state adds to the uncertainty over the agreement to share Nile waters by the basin countries.

Today, Egypt uses all of its 55.5 billion cubic metres of Nile water available under the 1959 agreement, but in some regions of the Delta water is scarce at the end of irrigation canals, and the local population is dissatisfied. Moreover, “Nile water is not reaching the Mediterranean, only drainage water is released,” according to Alaa Yassin, professor of hydraulics at Alexandria University.

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18 Wafqi al-Madani, “Man al-masool ‘an dhaya’ al-nee!!”, (Arabic: Whos is responsible for the loss of the Nile!!) al-Wafd, June 7, 2011 : http://www.alwafd.org/index.php?option=com_content&view=article&id=59156

19 Author interview with Omar Elbadawy, Cairo, June 25, 2011.



Basin of Karnak temple linked to Nile water, Luxor
Photography: © Yann Demont



The High Dam

The Aswan High Dam was built to solve the centuries-old problems of Egypt and to transport the country into modernity: to control the fluctuation of river flow and flooding in summer and low river flow in winter; to provide storage in years of low water availability, thereby ensuring a constant water source for extended irrigation; and to harness hydropower to industrialize and modernize Egypt.

The High Dam is built near an earlier construction known as the “Low Dam”, which was completed in 1902 at the former first cataract of the Nile. Planning for the High Dam started two years after the coup d’état of the Free Officers Movement, and construction took a decade from 1960 until its opening in 1970. The High Dam is the major achievement of Gamal Abdel Nasser, and its story is closely linked with the high drama of Cold War competition, the Czech arms deal, the Suez Canal nationalization and war, and the rivalry between the Soviets and the Americans for influence in the former European colonies. Eventually, Soviet funding and technical cooperation enabled Egypt to realize this major project.

Construction of the High Dam raised concerns among archaeologists worldwide that the Nubian Monuments would be inundated. Under the leadership of UNESCO, a rescue operation was initiated. Thanks to international technical and financial solidarity, the temples of Abu Simbel and Ramses II, located 230 kilometres south of Aswan, were cut into pieces of about 20 tonnes each and transported to a safe location. But other places of archaeological value – Buhen fortress and the Sudanese town Wadi Halfa – were left under the waters of the new lake. Over 70,000 Sudanese Nubians were forcefully relocated to Khashm al-Girba in north-east Sudan.

The High Dam is a major engineering achievement, protecting Egypt from yearly floods and low water, providing energy and enabling the Nasser-Nuba reservoir to hold the equivalent of twice the yearly discharge at Aswan. But today there is a debate about the long-term benefits or harm caused by the High Dam. Sediments transported by the Nile are captured by the High Dam and by numerous other dams. As a result the fertility of Nile Delta is being affected. Professor Mohammad Ismail Ibrahim, dean of the Faculty of Science at Alexandria University, summarizes: “After the construction of the High Dam, we notice the disappearance of planktons in the sea, as a result of which sardines have also disappeared. Now, Egyptian fishermen have to adventure to shores near Libya and as far as Somalia to catch fish, posing numerous problems for them. Moreover, the Delta is sinking by over 1 millimetre annually. This is a result of a natural process that was compensated for in the past by the sediments brought by the Nile. Plus, the quality of agricultural lands is being degraded leading to low productivity and peasants abandoning their land and moving to cities.”²⁰ One of the direct consequences of the construction of the dam, and the lack of silt deposits is the dramatic increase in synthetic fertilizer utilization, which, in turn, is an additional source of pollution of land and water in the Delta up to the Aswan Dam.

²⁰ Author interview with Mohammad Ismail Ibrahim, Alexandria, June 26, 2011.

Other voices defend the Dam and its benefits. Alaa Yassin of Alexandria University, who considers the benefits brought by the construction of the High Dam to surpass its side effects, says, “All the negative impacts of the High Dam were known before its construction. The benefits are evidently much higher than the losses caused: it guarantees that Egypt can take out of the reservoir 55 billion cubic metres of water annually, while before we lived one year with floods, and the next with drought.”²¹

The dam has security systems to remove excess water. In 1978 Egypt started constructing the Sadat Canal and later the Mubarak pumping station to take excess water from Nasser Lake to Toshka Valley situated to the north-west. Here, the Egyptian government and foreign (mainly Saudi) investors are developing a new project to cultivate 2,300 square kilometres through land reclamation, thus making the area a home to three million people – a “second Nile Valley”. The project is to be completed by 2020, although many experts consider it a failure.²² The project presumes that water availability will remain constant; otherwise the project is not sustainable as the desert heat guarantees continuous high levels of evaporation.

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21 Author interview with Alaa Yassin, Alexandria, June 26, 2011.

22 See Louise Sarant, “Scientists warn Egypt against Corridor of Development”, al-Masry al-Youm, April 19, 2011: <http://www.almasryalyoum.com/en/node/405993>

The Nile Delta

The Nile Delta is the most fertile land in Africa. Geologically, it is a recent formation, dating back 8,000 years to the formation of the Ne Nile (the modern Nile).²³ The Nile transports rich silt from the Ethiopian highlands, and recent studies estimate that annual deposits in the Delta region total some 36 million tonnes.

The Nile Delta, home to half of Egypt's 80 million people, is threatened by environmental degradation. The construction of the High Dam has stopped the flow of silt north of Aswan, resulting in deteriorating land quality, and contributing to the gradual sinking of the Delta. The most immediate problem in the Delta is that Nile water north of Cairo is heavily polluted. "I don't think there is transboundary water quality problem," says Tarek Genena, a water specialist in Cairo. "As we go north the water quality gets worse, and it becomes problematic from Cairo on and in the Delta. The sources of pollution are industrial, municipal, agricultural and solid waste."²⁴ The pollution of the lakes of the Delta region, especially Maryut Lake to the south of Alexandria where a number of petrochemical industries are based, have reached alarming levels – dead fish regularly appear on the water surface.

According to United Nations estimates, Egypt is witnessing the most severe loss of agricultural land, at 3.5 acres per hour, in the fertile Delta region.²⁵

23 Collins, op. cit., pages 122-123.

24 Author interview with Tarek Genena, Cairo, June 23, 2011.

25 Metwali Salem, "UN report: Egypt sustains severe land loss to desertification and development", al-Masry al-Youm, June 17, 2011: <http://www.almasryalyoum.com/en/node/468902>

Already, 12 to 15 per cent of the surface area of the rich Nile Delta agricultural land has been lost to salinization and galloping urbanization.²⁶ This is enormous damage in a country that is 96 per cent desert, and has built a civilization through irrigation and agriculture. The tempo of illegal construction – which constitutes over half of all building in Egypt – dramatically increased in 2011 as police control weakened in the wake of the overthrow of the Mubarak regime.

The Delta is also threatened by sea level rise induced by climate change. The Intergovernmental Panel on Climate Change projects in a 2007 report that the sea level could rise between 30 centimetres and 1 metre this century. The Nile Delta is one of the most endangered regions: A one-metre rise could cause the displacement of six million people, and disrupt up to 60 per cent of Egypt's agricultural production.²⁷ Climate change could also influence rainfall patterns and water availability in Egypt and the Nile basin countries. Climate models project an increase in temperature and hence an increase in evaporation while at the same time projecting a decrease in rainfall.²⁸

26 Shafiq al-Asadi, "Delta al-neel tafqid bayn 12 wa 15 fi al-mia min aradiha al-zira'iya", (Arabic: Nile Delta is losing between 12 and 15 per cent of its agricultural land), al-Hayat, October 18, 2009: <http://international.daralhayat.com/internationalarticle/67310>

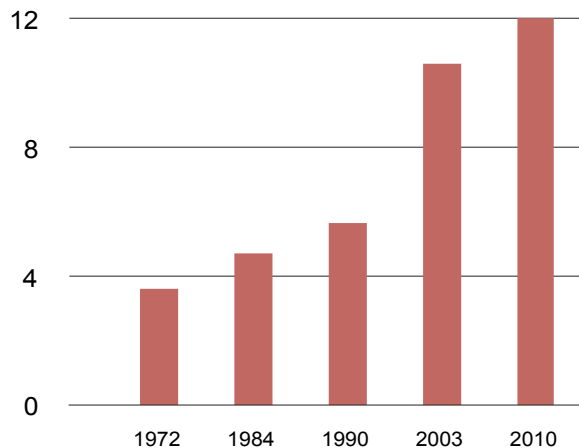
27 Mohamed El-Raey, "Coastal Areas", in Arab Environment: Climate Change, Impact of Climate Change on Arab Countries, Mostafa K. Tolba and Najib W. Saab (eds.), 2009, page 55.

28 Declan Conway, "From headwater tributaries to international river: Observing and adapting to climate variability and change in the Nile basin", Global Environmental Change, Volume 15, (2005), pp. 99-114.

The problems of the Delta and, more generally, irrigated land in Egypt is not just environmental, but also socio-political. Agricultural land was controlled by a handful of families from the time of Muhammad Ali Pasha up to the time of independence. The Egyptian peasantry (fallah') lived in miserable conditions, exploited by the rich landowners. Under Nasser, most land was taken by the state and distributed to the poor peasantry. As Sadat succeeded Nasser the laws on land reform were reversed, and under Mubarak former owners could reclaim their land, often leading to violent clashes between police and villagers forced to abandon what had been their land for several decades.²⁹

Urbanization of the Nile Delta

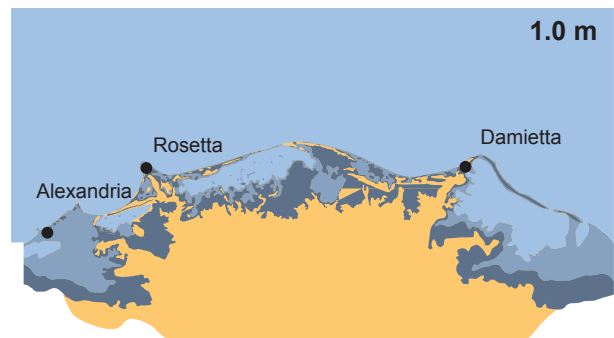
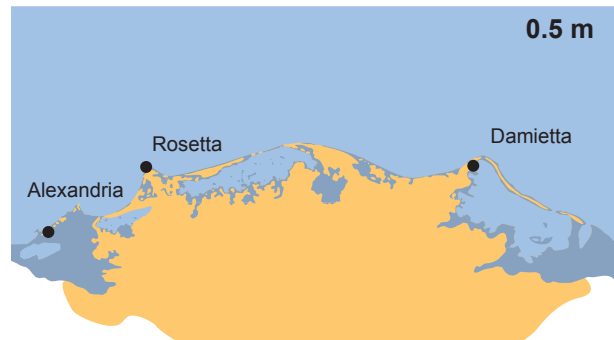
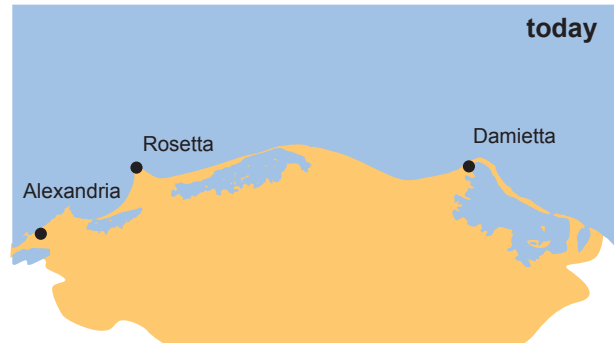
Percentage of urban area



Sources : Land-use change and adaptation in the Nile Delta region, Mahmoud Medany, Samar Attaher & Ayman F. Abou-Hadid, Central Laboratory for Agricultural Climate (CLAC), 2010

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²⁹ Ray Bush, "The land and the people", in Egypt: The Moment of Change, Rabab El Mahdi and Philip Marfleet (eds), Zed Books, 2009.

Potential impact of sea level rise : Nile Delta



Map produced by Yann Demont, Zoë Environment Network, August 2011
 Sources: Otto Simonett, UNEP, 1989

Conclusions: The Environment-Security Link

On the global scale, Egypt is not the most water-poor country. The region has several other countries, including Jordan and Yemen, where the rapid degradation of natural resources is increasingly becoming an element of instability.³⁰

Egypt has 80 million people, the vast majority of its territory is desert, and it depends on a single, transboundary river as its only source of water. The country imports half of its food, and cannot increase its food imports without major financial and economic consequences. It is exposed to global food price hikes, a problem that exploded in 2008 and continues to be a major burden on food-importing countries. The Middle East has increased its food imports over several decades and now imports more than half the food it consumes – more per capita than any other region. Egypt spends 7 per cent of its GDP on food and energy subsidies.³¹ And the continuous increase of food prices over the last four years add strain to a tense social situation in Egypt.

Did the changing climate ignite the Arab Spring?³² Did failures of Egyptian agriculture and the global increase in food prices accelerate the fall of the Mubarak regime? The causes of the wave of revolt sweeping across the Middle East and North Africa are complex and multiple, but it is difficult to ignore the

role played by the impoverished classes in giving a social base to a political revolt. In the words of Waheed Abdel Majeed, the director of al-Ahram Centre for Political Studies, “The common denominator in the Arab revolutions is human dignity. Poverty is not the common denominator between Egypt and Libya and Tunisia. Poverty has been present for many years. But humiliation is felt by many Arab citizens. And in all those countries there were attempts at dynastic rule, which was realized in Syria, and was planned in others. Only after the start of rebellion on the street, did the poor join in. The social factor entered the revolution in its last days, and brought it closer to success.”³³

The forces exerting pressure on the social stability of Egypt are daunting – a population increasing by 1.7 million per year, the increasing prices of food imports, desertification and the degradation of soil and water quality in the Delta, and the increasing demands of upstream countries for what they view as their fair share of the Nile. Environmental security and the preservation and just distribution of basic resources are the keys to peace and stability.

30 For an environment-security assessment of Jordan, see Vicken Chertian, Jordan, Environment and Security, Zoi report, Geneva, 1/2011: <http://www.cimera.org/pdf/Jordan-Environment%20and%20Security.pdf>

31 Heba Saleh, “Arab states act to restrain food costs”, Financial Times, January 12, 2011.

32 Sarah Johnstone and Jeffrey Mazo, “Global Warming and the Arab Spring”, Survival, Vol. 53, Issue 2, April-May 2011, pp. 11-17.

33 Author interview with Waheed Abdel Majeed, Cairo, June 27, 2011.



Bridge over the Nile, Luxor
Photography: © Yann Demont



Did the changing climate ignite the Arab Spring?¹ Did failures of Egyptian agriculture and the global increase in food prices accelerate the fall of the Mubarak regime? The causes of the wave of revolt sweeping across the Middle East and North Africa are complex and multiple, but it is difficult to ignore the role played by the impoverished classes in giving a social base to a political revolt. In the words of Waheed Abdel Majeed, the director of al-Ahram Centre for Political Studies, “The common denominator in the Arab revolutions is human dignity.”

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¹ Sarah Johnstone and Jeffrey Mazo, “Global Warming and the Arab Spring”, *Survival*, Vol. 53, Issue 2, April-May 2011, pp. 11-17.



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