

Sudan Irrigation Minister: Build Infrastructure, Use Water Resources

Kamal Ali Mohammed, Minister of Irrigation and Water Resources, Republic of Sudan, was interviewed on Jan. 23, 2011 in Khartoum, by Lawrence Freeman. A referendum had just taken place in southern Sudan, Jan. 9-15, but the results were not yet known. It led to the creation of a separate Republic of South Sudan, which will become an independent country on July 9.

Sudan is Africa's largest country in area, with 2.3 million square kilometers (before the secession of the South), which is slightly more than one quarter the size of the United States. Sudan's population is approaching 40 million, and it shares with Egypt, what is considered to be the longest river in the world, the Nile.¹ But as **Figures 2 and 3** show, the far north of the country is a desert, while the South receives much more rain, and in some areas, is indeed a tropical rainforest.

Sudan as a whole has been self-sufficient in basic food requirements in the past, and its agricultural potential is enormous: Fully 40% of the land area is fertile and arable. Studies have shown that if Sudan's full potential were reached, it could provide over 1 billion tons of food, enough to feed North Africa and the Horn. Yet in 2002, only 16% of that area was actually being cultivated. The seasonal lack of rainfall can create acute food shortages, especially in central Sudan.

Water resources are abundant, but their variability presents a life-and-death issue. The average annual rainfall is 416 millimeters, but that ranges between 25 mm in the North and more than 1,600 mm in the South. Rain-fed agriculture in the Central-South region is seasonally limited, because the dry season lasts about eight months. The flow of the Blue Nile fluctuates according to seasonal rainfall in the Ethiopian highlands, while the White Nile loses almost half of its water into the Sudd swamp.

1. This discussion draws on two articles by Hussein Askary, which provide additional background and analysis: "Defying Britain's Genocide System: Sudan's Great Project in Agriculture," *EIR*, July 18, 2008, and "Sudan's Economic Accomplishments Become Casus Belli for British Empire," March 13, 2009.



Sudanese Media Center

Kamal Ali Mohammed, Minister of Irrigation and Water Resources, Republic of Sudan

All of this underlines the urgency of developing water infrastructure systems, which is what *EIR*'s Freeman discussed with Minister Kamal.

Freeman: "Could you tell us what kinds of infrastructure projects are now being planned, or are already in the works for Sudan in the areas of water, energy, transportation?"

Kamal: "Our water resources in Sudan comprise our share of the Nile waters, which we share with Egypt; and also, we have groundwater, aquifers, and rainfall. The amount of rainfall on average is 1,100 billion cubic meters per year, and our share of the Nile River is 18.5 billion cubic meters. Egypt takes 55.5 billion cubic meters. . . . We have three big rivers—the Gash River and the Barka, flowing down from Eritrea, and the Kor Abu Hable in Kordofan."

The government has undertaken various projects to improve water management, including building dams and irrigation systems. One of the largest of the projects is the Gezira Scheme, at the place where the northward-flowing Blue Nile and the White Nile join, becoming the Nile (see Figure 15 p. 59, a map showing infrastructure

FIGURE 1
Sudan



projects in Egypt and Sudan). The Gezira Scheme is the world's largest farming operation under a single management, and once provided a substantial foreign exchange and government revenue.

At the Gezira Scheme, Amal said, "the main crops are cotton, sorghum, wheat and vegetables. And in the late 1980s, we constructed the Rahad Scheme on the Blue Nile, an area of 300,000 acres, also for cotton, ground nuts, and sorghum."

A second major project has been the construction of the Merowe Dam, said Kamal, "for hydroelectric power, and for improving, vertically and horizontally, the irrigation projects along the main Nile, with an installed capacity of 1,250 megawatts per hour. It was inaugurated last year, and now it is operating, and providing us with hydropower, and we built interconnection lines to the national grid."

Freeman: "I was able to visit the Merowe Dam in April 2009, and I was quite impressed and excited, because I thought that was one of the best development projects I've seen in Africa in a while. Are there other projects being thought about on that level, or slightly less than that level, over the next five to ten years?"

In reply, Kamal pointed to a number of projects, including the expansion of the Roseires Dam, to increase

FIGURE 2
Sudan: Desert in the North, Rainforest in the South



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its storage capacity from 3 billion cubic meters to 7.7 billion cubic meters; construction of a new dam and irrigation project, over 400,000 acres, along the Atbara River; the Sebaloka Dam along the main Nile; and the Dal project, about 80 km south of Lake Nubia.

Projects like these will double Sudan's total hydroelectric capacity, from less than 2,000 MW per hour to almost 5,000 MW, over the next ten years.

By contrast, Freeman noted, neighboring Ethiopia is going through a much larger hydropower expansion, 30-40,000 MW. Some of the relevant rivers feed into the Blue Nile.

Water in South Sudan

Asked whether the secession of South Sudan would cause a conflict over water between North and South Sudan, or with Egypt, given that the source of the Nile is in the South, Kamal said "definitely not." "The South had already started with us to utilize the Nile waters. There are 23 irrigation projects in the South, in Upper Nile State, an area of some 90,000 acres already. And after the first peace agreement in 1972, we sat down

together to draw up a list of priorities. We need about 40 million cubic meters for our arable land bordering the Nile, but we have a share of 18.5 billion. . . . We made studies on all the potential projects on the Nile in South and North Sudan.”

But many of the projects could not be built, because of the war in the South, which is now over.

Freeman: “Do you foresee future increased cooperation between the two countries, if they do secede?”

Kamal: “As far as the Nile water is concerned, it is only the White Nile that goes through the South. They have nothing to do with the Blue Nile. They have nothing to do with the Atbara River.”

“The White Nile, as you know, flows down from the equatorial lakes, from Lake Victoria, Lake Kyoga, and Lake Albert, in the East African countries—Kenya, Uganda, Tanzania, Rwanda, Burundi, and Congo—which contribute to the flow, flowing to South Sudan, and in southern Sudan, 50% of the water that comes from these countries is lost in the swamps.

“Also, we have the Sobat River, flowing from the Ethiopian plateau, and also there are 8 billion cubic meters lost in the swamps of Machar and Sobat: 8 billion in the Sobat, 14 billion from the Bahr al-Jebel/Bahr al-Ghazal, and another 14 billion from the Bahr al-Ghazal, which do not reach the White Nile. Out of 14 billion, only about half a billion flows down the White Nile.

“The amount of water arriving between Malakal and Aswan, is about 25 billion cubic meters—the Nile water agreement with Egypt is reckoned at Aswan—but about 21% of that is lost, by evaporation and seepage and so on. So the amount reaching Aswan is only about 19 billion.

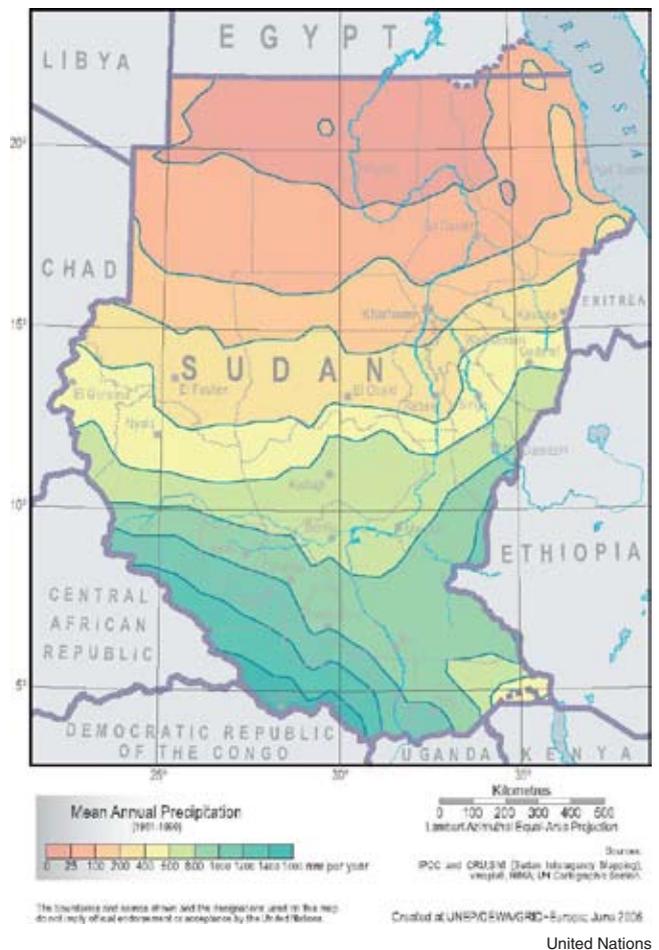
“Egypt, according to the 1959 Nile water agreement, gets three quarters, and Sudan one quarter. So out of this 19 billion [that comes from the White Nile], between us and the South there is only about 4.9 billion cubic meters. . . .

“I am just telling you that the share between the South and the North is limited to the White Nile.”

The Jonglei Canal

Freeman: “The Nile River in its totality, probably about 80 billion cubic feet, some of it’s lost to evaporation, and then it’s divided. Clearly, the Nile River is not big enough for the needs of the nine countries—I estimated 400 million people—that use the Nile River basin. One thing that could be done is the Jonglei Canal, which would increase that. But even that will not be enough. So how do we get more water into the entire region?”

FIGURE 3
Sudan’s Mean Annual Precipitation



“One proposal from Mr. LaRouche, from our organization, is that we create a new Nile River by desalinating an equivalent amount. That we have nuclear power desalination plants take out the saltwater from the Red Sea and the Mediterranean Sea.”

Kamal replied that the Jonglei Canal had been two-thirds completed, before work was stopped in 1983 because of the war. The planned length is 360 km, and 265 km have been dug. “This phase of the canal would accrue about 4 billion cubic meters, to be shared equally between Sudan and Egypt. And if you go along with the other projects, you can also reclaim 4 billion cubic meters from the Sobat and Machar, and you can also reclaim about 7 billion from Bahr al-Ghazal.”

He explained how John Garang, who became the leader of the Sudan People’s Liberation Army (SPLA, 1983-2005) in the South, had wanted to write his PhD dissertation on the Jonglei Canal project. Kamal was

the director of the project at that time. “He came to me and was attacking the Jonglei Canal, on the basis that this project would have no benefit for the inhabitants of the area. When he said that, I told him that a development council had been established, headed by Abel Alier, who was head of the government of the South at that time, with six ministers from the South and four ministers from the North. They agreed to the construction of the Jonglei Canal, on the condition that it should have projects beneficial to the area.

“And so, projects were demarcated—community services, drinking water supplies, schools—and he learned that the canal would be navigable. When he had a look at the projects in the area, he changed his mind.”

Garang “had a program for economic development, social development, how the foreign policy of the country is going to be, and so on. But he had to stop all the activities [because of the war]. The main activities were three: 1) work on the Juba Airport, to modernize it; 2) the Jonglei Canal; and 3) Chevron oil exploration.”

Asked about claims that the Jonglei Canal would significantly change the weather pattern in Southern Sudan, and maybe Ethiopia as well, Kamal replied that he had made a thorough study of rainfall patterns in the

area. Between 1961 and 1979, the flow of water from Lake Victoria to the South was doubled, thereby doubling the swampland. But average rainfall did not change, so the area of the swamp had nothing to do with the effect of rainfall.

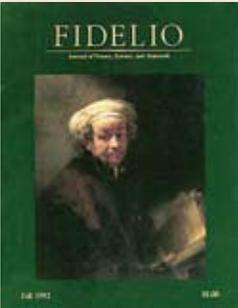
This conclusion was endorsed by a Dutch consulting firm (financing for the project was supposed to come from the government of the Netherlands). Initially the Dutch Parliament said “No,” saying there would be negative environmental impacts: Rainfall would be affected, etc. “So they formed a team of experts from Holland, who came and worked with us. The results were that there would be no negative environmental impact, nothing negative about the rainfall in the area, and so the Parliament approved the financing of the project.”

Freeman: “Do you think it’s going to be completed now, with Northern Sudan being separated, so it will be up to Southern Sudan at this point? Northern Sudan would then have an interest in helping Sudan develop the Jonglei Canal, no?”

Kamal: “The government of the South, established after the 1972 agreement, approved the project. Now, the new government—we don’t know if they are going to approve the project or not.”

FIDELIO

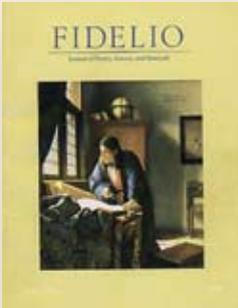
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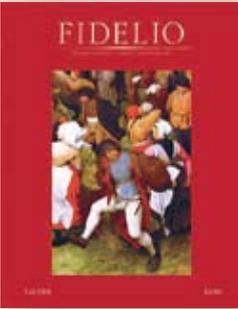


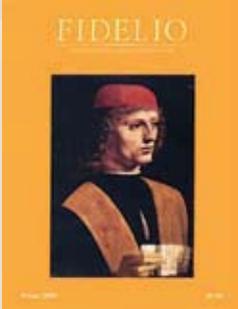
From the first issue, dated Winter 1992, featuring Lyndon LaRouche on “The Science of Music: The Solution to Plato’s Paradox of ‘The One and the Many,’” to the final issue of Spring/Summer 2006, a “Symposium on Edgar Allan Poe and the Spirit of the American Revolution,” *Fidelio* magazine gave voice to the Schiller Institute’s intention to create a new Golden Renaissance.

The title of the magazine, is taken from Beethoven’s great opera, which celebrates the struggle for political freedom over tyranny. *Fidelio* was founded at the time that LaRouche and several of his close associates were unjustly imprisoned, as was the opera’s Florestan, whose character was based on the American Revolutionary hero, the French General, Marquis de Lafayette.

Each issue of *Fidelio*, throughout its 14-year lifespan, remained faithful to its initial commitment, and offered original writings by LaRouche and his associates, on matters of, what the poet Percy Byssche Shelley identified as, “profound and impassioned conceptions respecting man and nature.”







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