Will the water in the Nile Basin be sufficient for the growing population of the region? Irrigation and dams can increase agricultural output and food security. Yet more and more of the best agricultural land is being used to produce industrial crops for consumption in other countries.

Lack of water, industrial cropping and food security

Text by Terje Oestigaard

He White and the Blue Nile meet in Khartoum in Sudan to form the River Nile, the world’s longest river, which drains approximately one-tenth of the African continent. In 2050, it is expected that the total population in the Nile Basin’s 11 countries will be 10 times higher than it was in 1950. More than half of the expected 860 million people will live in the river basin. In developing countries, agriculture accounts for up to 95 per cent of water use. The major threat to food production in the future will not be lack of arable land, but water scarcity.

Irrigation is crucial to enhancing food security. In sub-Saharan Africa, subsistence farmers predominately dependent on rainfed agriculture are suffering the most from hunger, even though, paradoxically, they produce food. Globally, about 20 per cent of cultivated land is irrigated and produces 40 per cent of the world’s food. Irrigated agriculture generally generates more than double the income of rainfed agriculture, but, depending on choice of crops, can generate much more. Thus, irrigation enhances both food security and capital accumulation.

Dams provide a steady and reliable supply of water for irrigation. Erratic rainfall patterns, which may become more marked as climate change leads to increased droughts and floods, can be countered by dams, which store waters for timely release during the cultivation season.

In 1958, Egypt’s President Nasser described the importance of the forthcoming Aswan High Dam, which was inaugurated in 1971, in the following lofty terms:

“For thousands of years the Great Pyramids of Egypt were foremost among the engineering marvels of the world. They...
ensured life after death to the Pharaohs. Tomorrow, the gigantic High Dam, more significant and seventeen times greater than the Pyramids, will provide a higher standard of living for all Egyptians.

The dam was constructed to store the equivalent of two annual Nile floods, thereby turning the river into what has been called a “giant irrigation canal,” as well as providing and securing energy needs. Also important, when Ethiopia and other Nile countries suffered from drought and famine, Egyptian farmers could continue to cultivate as before, since the water supplies they needed were secured by the Aswan High Dam.

In practice, dams are also one of the few options African countries have to deal with the consequences of climate change. Africa releases only four per cent of the globe’s carbon emissions, but the impact of climate change is expected to hit Africa hard, with both more droughts and more floods.

The construction of dams is, nevertheless, controversial for a number of reasons. Although dam building has been fundamental to the development of the West, India and China, environmentalists raise strong concerns about their ecological impacts and many donors are reluctant to support large-scale dam building on the African continent. Building dams along the Nile and using the water for irrigation and energy is also a controversial issue for other reasons.

In the Nile Basin, Egypt and Sudan signed the agreement For the Full Utilisation of the Nile Waters in 1959, whereby they divided the water between themselves without inviting upstream countries to the ne-

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This agreement hindered those countries in developing hydropower plants and huge irrigation schemes. In 2010–11, the Cooperative Framework Agreement changed this hegemony. In terms of the agreement, all the Nile Basin states may use the water resources, but in an equitable and reasonable manner intended to prevent the causing of significant harm to other states. However, Egypt and Sudan oppose this new agreement.

Dams for hydropower are less problematic than dams intended to store water for irrigation, because to produce electricity the water has to be released downstream in order to power the turbines. Irrigation schemes, however, draw down the water, and increased irrigation development in upstream countries will reduce the overall water flow to Sudan and eventually Egypt.

The total irrigation potential of the Nile Basin is 8 million hectares, of which some 5.5 million are currently irrigated, predominately in Sudan and Egypt. Since 85 per cent of the Nile water comes from Ethiopia, the irrigation potential of Ethiopia is significant but hardly developed. Many uncertainties remain regarding the feasibility of the future planned irrigation projects in the Nile Basin as a whole, but in the long-term these projects may involve 10.6 million hectares and about one and a half times the water that actually flows in the Nile. Consequently, not all these plans can go ahead. In addition, improved rain harvesting techniques for agriculture may also reduce the overall volume of water reaching the Nile, since the run-off will be less.

Dams will be important for increasing agricultural production and enhancing domestic energy security. Yet, another challenge is that more of the best agricultural and irrigated land is not used to produce food for domestic consumption, but industrial crops for international energy needs. It is estimated that Ethiopia has granted more than 3 million hectares and Sudan (including South Sudan) about 4.9 million hectares to foreign investors, mainly for biofuel and other agricultural products.

This has been called "land-grabbing" and there has been recent recognition that behind every "land-grab" there is a "water-grab." With the Nile waters becoming an ever scarcer resource with high population growth, will those waters be used to produce food for the peoples of the basin states or energy and goods for the global market?