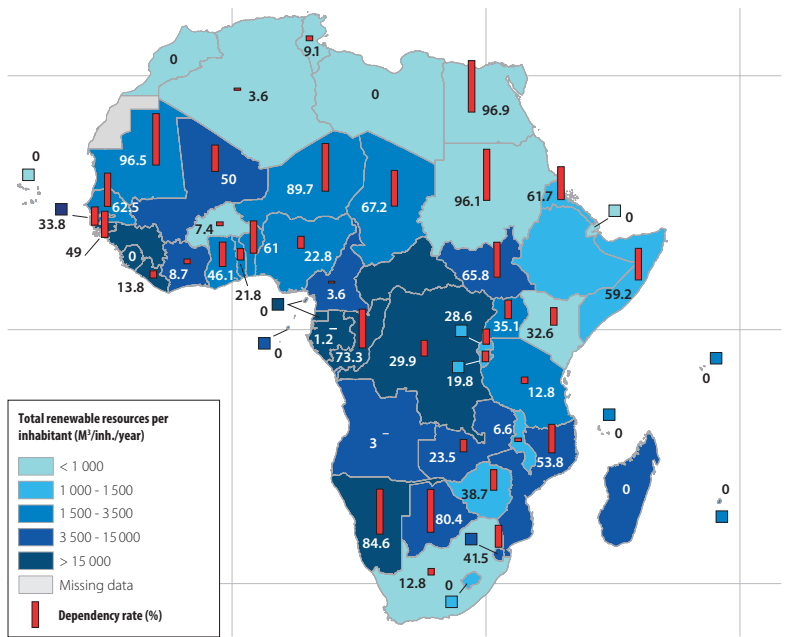


M33. Total availability and dependence on water resources

(See note page 69)

Source FAO Aquastat 2016



M34. Water consumption and use and transboundary watersheds

Source FAO Aquastat, FAO Corporate Document Repository

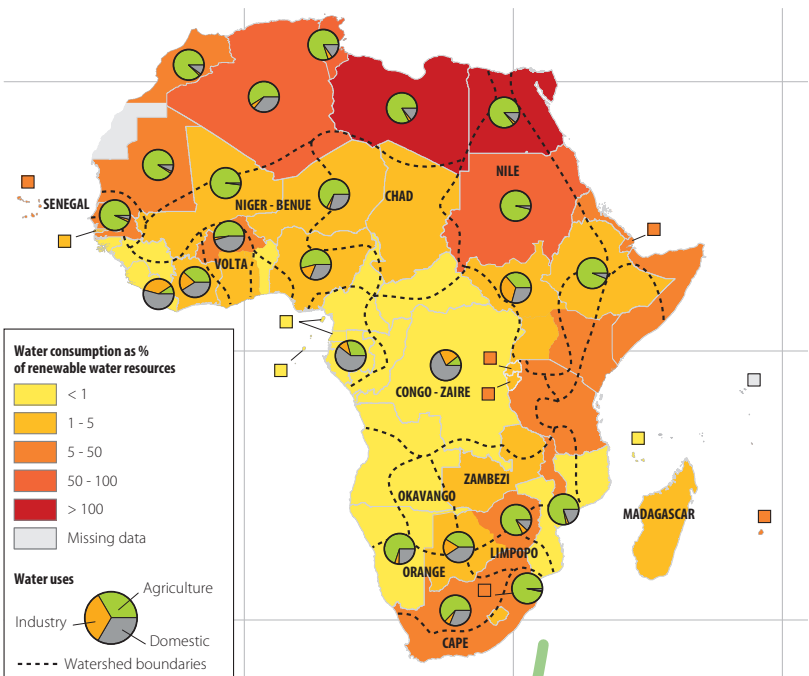
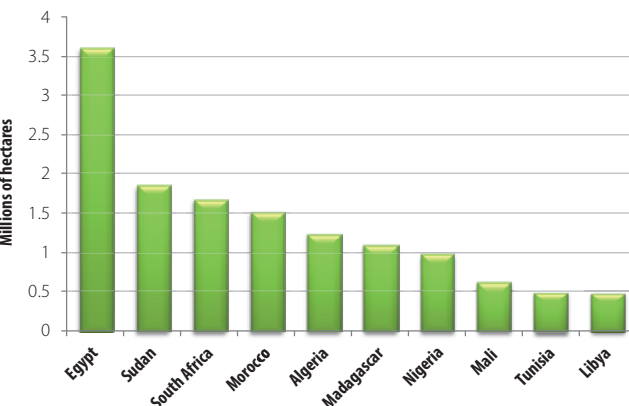


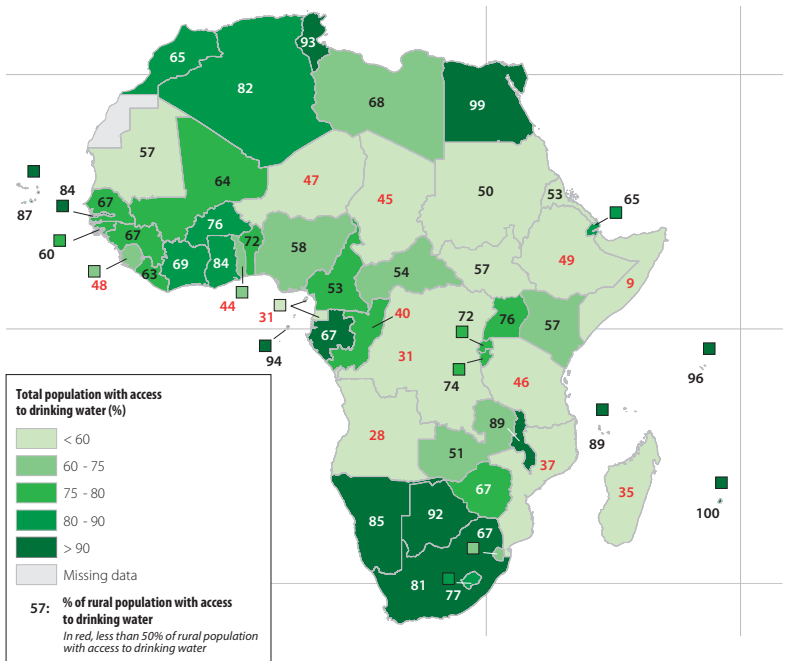
Fig. 18. Main countries of irrigation

Source FAO Aquastat 2016



M35. Access to drinking water

Source FAO Aquastat 2016



## BLUE GOLD AND ITS CHALLENGES: WATER STRESS IN AFRICA

***There are many challenges related to water in Africa: providing safe drinking water for all; developing food production without depleting water resources; and implementing water- and energy-saving irrigation techniques, among others. These challenges can only be met by mobilising human, financial and technical resources in order to make the necessary investments and to maintain them over time.***

### • Uneven distribution of water resources

Africa has many different types of climate and a wide range of population densities. This results in major differences in total per capita water availability. Another important parameter is the dependency ratio, which expresses the percentage of renewable water resources originating outside the country: this ratio is high on average (60% or more) and peaks ( $\approx 80\%$ ) in countries such as the Republic of the Congo, Botswana and Namibia; but the most spectacular ratios are seen in Egypt and Sudan, where they reach nearly 100%, highlighting the fact that these countries are almost entirely dependent on water from large rivers entering from upstream countries.

Surface water is not available everywhere all year round. Outside the equatorial zone, most watercourses are seasonal and dams are needed to regulate them. Water comes primarily from large rivers and only the land immediately adjacent to these rivers can be easily irrigated. Making better use of water in order to irrigate

more land implies large water infrastructure projects and the major constraints inherent in the management of vast irrigated areas.

### • Water consumption marked by agricultural uses

Arid and semi-arid countries consume a significant proportion of their renewable water resources. Egypt and Libya epitomise this, consuming respectively all and six times more than their available water, which is only possible in Libya through massive pumping of non-renewable groundwater. Most of the water consumed is used for irrigation. Water distribution between household, industrial and agricultural uses differs greatly in humid regions, which have very little irrigated agriculture.

The North African countries alone consume half of all water used on the continent. If we include Nigeria, South Africa, Sudan and Madagascar, we see that just nine of the 53 African countries account for a total of 80% of all water consumed on the continent.

Many of the countries that have developed irrigation are also those that have to import water on a massive scale in order to meet their dietary needs. This dependence drives them to further extend and intensify their irrigated agriculture, at the risk of creating water crises. To tap into new water resources, they resort to pumping from aquifers, but at a rate significantly higher than their recharge rate (almost zero in the Sahara). This produces energy requirements and lowers the water table, thereby threatening the future of these aquifers. In order to protect water resources,

water-saving irrigation techniques are being developed, such as drip irrigation in North Africa, which may be subsidised.

### • Potential conflicts

Some countries are major agricultural water users and depend on other upstream countries. There is already tension over water use and new disagreements could emerge in response to economic dynamics and policy choices, but also and perhaps especially as a result of ongoing climate change that could reduce water availability and increase evaporation, depending on the country.

This tension is supposed to be managed by international treaties and river basin organisations such as the Nile Basin Initiative. But in 2013, the construction of the Renaissance Dam in Ethiopia led to Egypt's withdrawal from the basin organisation and the escalation of tensions. An Egypt-Sudan-Ethiopia agreement signed in 2015 helped to relieve pressure, but there is still a latent divide between water "supplier" and "consumer" countries.

The conjunction of a resource shared by several countries and a high level of resource use in one of these countries is a major risk factor for the emergence of water conflicts: in addition to the Nile, this situation could also occur for the Senegal, Niger and Limpopo rivers and their riparian countries.

### • Poor access to safe water in rural areas

According to the World Health Organization, the minimum water requirement to meet basic human needs (drinking, cooking and personal hygiene) is 25 litres per capita per day. But higher quantities (50 l/capita/day) are needed to also cover the other basic needs (laundry and household hygiene). However, more than half of African countries consume on average less than 50 l/capita/day for domestic uses, and a quarter

consume less than 25 l.

Access to safe drinking water for African people is equally alarming: in many countries, 40% of the population has a round-trip of more than 30 minutes to the nearest source of drinking water (the UNICEF reference standard). The situation is even worse in the countryside, where up to 80% of people have no access to safe water.

Paradoxically, the countries with the largest water resources are among those with the lowest levels of drinking water coverage, especially in rural areas. Conversely, the North African countries and some Southern African countries, where far less water is available, have almost 100% drinking water coverage. Large water resources do not therefore necessarily imply that people actually have access to these resources.

To provide rural populations with access to drinking water, investment is needed in infrastructure and organisations, and effective, sustainable governance is required. More generally, better water resource management implies major investments in order to both improve water supply and to manage demand. At river basin level, many countries are making considerable efforts to set up basin agencies and, more locally, user associations with the goal of achieving decentralised water governance. Water management at the most appropriate local level should guarantee greater efficiency, equity and local stakeholder involvement in decision-making..

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