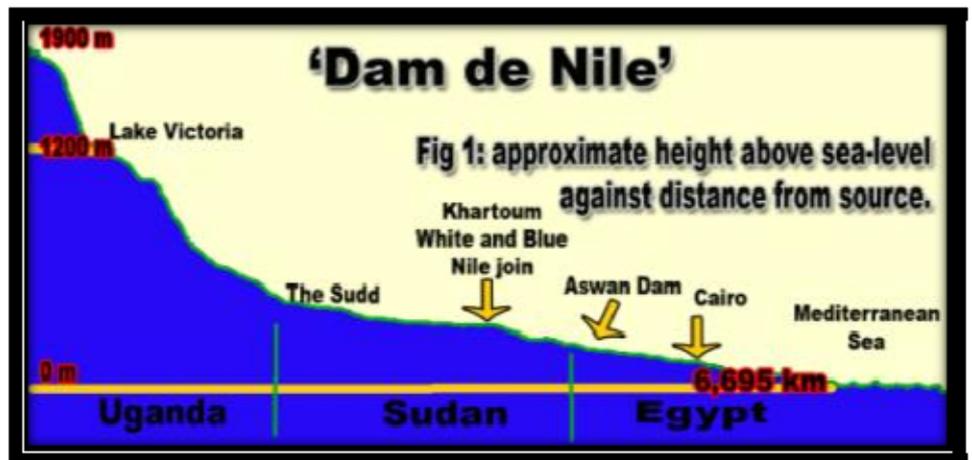


## The River Nile: 4 - Dam de Nile

The White Nile is a large resource for Uganda providing us with; water to drink, water to irrigate, hydro-electric power, a physical boundary between kingdoms, fish and other foodstuffs, a transport medium, scenic beauty, focus for tourism, and most importantly an outlet for Lake Victoria. But if for instance, the Nile drained from the south of Lake Victoria, Uganda would survive.

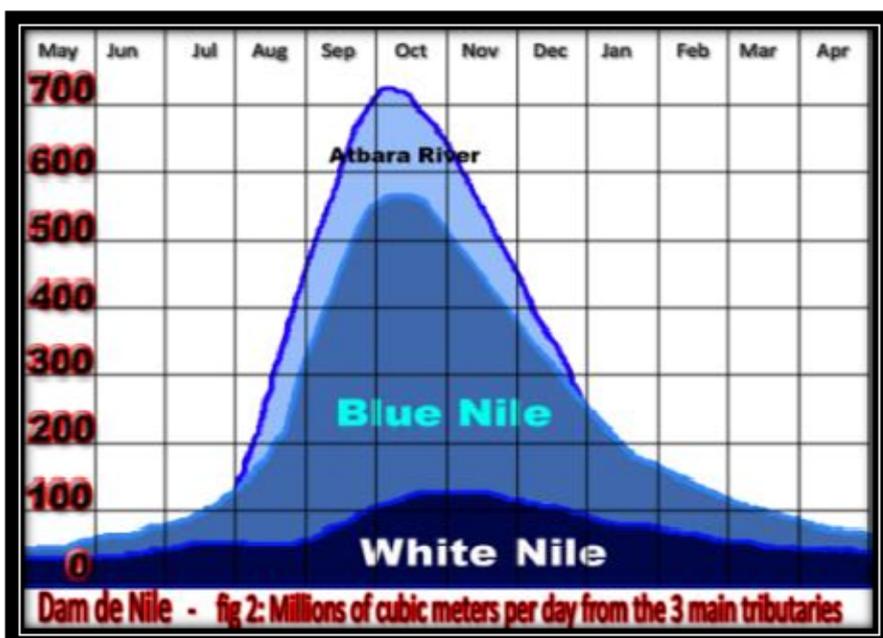


The Nile becomes increasingly important the farther north it flows into Sudan and Egypt. It brings water to these regions which lie in Earth's greatest desert, the Sahara. In spite of its great length and large drainage basin (3,000,000 square kilometres or about 10% of Africa), it carries relatively little water. Also, while most other great rivers join with large streams as they approach the sea, very unusually, after the confluence of the Atbara and over the second half of the Nile's journey to the sea, no water is added while substantial amounts are lost to evaporation.

The Nile provides Uganda's best options for viable hydro-electric power on a national scale – a clean and *relatively* cheap source for some of the energy required to drive development through the 21<sup>st</sup> Century. In addition to existing dams and the soon to be completed Bujagali Dam, there is a possibility for more dams to utilise the potential energy generated in the drop from Lake Victoria to the Ugandan border. See Fig 1.

The Greek historian, Herodotus, wrote that Egypt is the "Gift of the Nile", a sentiment that has carried through time. The Nile allows Egypt to continue today as one of the largest and most powerful nations of Africa and the Middle East; its gifts of water and rich Ethiopian mud nurtured a civilization that flourished for almost 3000 years before the Roman Empire began. Understandably Egypt is concerned when any changes occur upstream.

The Nile is made up of the White Nile system and the Blue Nile-Atbara system. The White Nile maintains a constant flow over the year, doubly buffered; first because of storage in Lakes Victoria and Albert and secondly because of variation in evaporative losses in the Sudd, the world's largest freshwater swamp. The Blue Nile-Atbara system is a completely different. In the winter, when little rain falls in the highlands, the Atbara and Blue Nile dry up. But in the summer, when moist winds from the Indian Ocean cool as they climb up the Ethiopian highlands, bringing torrential rains to Ethiopia. See Fig 2.



Lake Victoria provides the first reservoir, hopefully to remain at a stable height. This being the case, the outflow is dictated by nature, noting that "*The environmental impact of climate change is nowhere more apparent than in the Nile River Basin*". A source of disagreement amongst the Nile's nine riparian countries is the 1929 Treaty negotiated by Britain which places the balance of power over use of the river firmly in the hands of Egypt.

Major dams on the Nile are; Roseires Dam, Sennar Dam, Aswan High Dam, Owens Falls/Nalubale and shortly Bujagali Dam. This

is a 'good' dam in that it has minimal impact on the flow, never more than a few hours delay and small surface area so little evaporation.

Contrasting this is the much larger Aswan High Dam which when finished in 1970 ended the summer floods and their renewal of the 400 million tons of fertile soil annually. The reservoir is known as Lake Nasser in Egypt and Lake Nubia in Sudan and was designed to provide Egypt with a reliable source of water for irrigation and hydroelectric power, reducing losses to the sea. The huge surface area (3rd largest) in one of the hottest climates in the world results in great losses through evaporation. Most importantly however, the dam is in Egypt.

As we move into the 21st century, attention on how to best use 80 cubic kilometres of water that the Nile annually transports from Equatorial Africa across the Sahara to the Mediterranean Sea will receive extra importance and can be a potential source of conflict if not managed well.