

Mini role play: pressure on water in Nile River Basin

Groups:

- Ministry for agriculture in Egypt
- Hydropower developers in Ethiopia
- International Nile delta environmental NGO
- Irrigation department of Sudan

Fact sheet:

Nile:

- Shared by eleven countries, including Ethiopia, Sudan and Egypt
- 80% of the water originates from Blue Nile, i.e. Ethiopia and Sudan
- Nile agreement in 1959 increased water allocations to both Egypt and Sudan— Egypt's water allocation was raised from 48 billion cubic meters to 55.5 km³/yr and Sudan's from 4 billion cubic meters to 18.5 km³/yr, leaving 10 km³/yr to account for seepage and evaporation. No allocation to e.g. Ethiopia although most of the water originates from there.

Egypt:

- Total discharge to Egypt 55.5 km³/yr, being 97% of their total available water resources. Of this 0.2 km³/yr goes directly to sea, other is used mainly for irrigation while 11.8 km³/yr reach sea from agriculture return flows.
- At the moment Egypt is approximately 80% self-sufficient in terms of food production. Heavily dependent on irrigation.

Current development:

- Ethiopia is building one of the world largest dams, the Grand Ethiopian Renaissance Dam, to its border with Sudan. Dam would be able to store 74 km³ of water. Although the dam would not consume water (except evaporation), but its filling would have significant impact on downstream water flows. Dam developers want to fill the dam in three years. Egypt does not agree. Ethiopia ensures that they would not use water for irrigation, but pressure is large to do it.
- For Sudan, the dam would mean more stable discharge and thus potential to increase its irrigation water consumption. However, they are already using their quota.
- Egypt is not pleased on the development, and wants the upstream countries halt their plans.

Table 1: basic facts of the target countries. Sources: UN population prospect 2017 (population), World Bank (access to electricity), LPJmL mode, as in hands-on week 3 (food production)

| | Population (millions) | | | Electricity (% of pop) | Food crop production (kcal/cap/day) |
|----------|--------------------------|------|------|---------------------------|----------------------------------------|
| | 1960 | 2017 | 2050 | 2016 | 2010 |
| Egypt | 27 | 98 | 153 | 100% | 1'316 |
| Sudan | 8 | 41 | 80 | 39% | 1'119 |
| Ethiopia | 22 | 105 | 191 | 43% | 643 |