AFRICA is the “underdammed” continent. It is the least irrigated and electrified, yet it uses only 3% of its renewable water, against 52% in South Asia. So there is plenty of scope for an African dam-building boom. Ghana long ago dammed the River Volta, Egypt the Nile, Zambia, Zimbabwe and Mozambique the Zambezi. But there are new projects aplenty.

Sudan’s president, Omar al-Bashir, for instance, is so proud of the new Merowe dam in the north of his country that he made it a selling-point in his recent election campaign. Costing $1.8 billion, it will produce 1,250 megawatts and create a lake 174km (108 miles) long, above the Nile’s fourth
cataract. If all goes well, it may even fulfil an old dream to irrigate swathes of farmland in northern Sudan, while sending electricity to run the thirsty air-conditioners of Khartoum. And all without dirtying the atmosphere, once the dams have been built.

China is building most of Africa’s new dams out of its own pocket, with all sorts of hoped-for spin-offs. International Rivers, a lobby that tries to save rivers from dams it says are destructive, admits that the Chinese are much greener these days. China Eximbank cancelled a loan for a dam in Gabon on environmental grounds. Even so, political instability, graft and incompetence have meant that many African dams, once built, have failed to produce what was promised. The Inga I and II dams on the Congo river have generated a fraction of the power they were meant to. The technology is demanding. Seasonal rains produce muddy rivers, with higher sedimentation than northern countries’ dams filled with melted snow. That means a shorter lifespan and heavier maintenance. Angola has spent $400m overhauling its dams and transmission lines.

The standards set in 2000 by the World Commission on Dams, an independent body which brought together an array of experts from all sides of the argument and which recognises dams’ local costs as well as national benefits, are often ignored in Africa. Projects are rushed. Huge contracts are open to corruption. Engineering can be shoddy, leading to cost overruns.

The hardest bit is hydrology. Rainfall estimates are often wrong. Some countries must rent costly diesel generators to boost hydropower in years of drought. Climate change makes hydrology trickier still. Reservoir water sometimes falls too low to turn the turbines. Schemes to export power need to speed regional integration. Ethiopia and Egypt are again rowing over how to share the Nile waters.

The latest controversy surrounds Ethiopia’s colossal Gibe III dam. It is set to cost $2 billion and produce 1,800 megawatts, the same amount as South Africa’s Koeberg nuclear reactor. Ethiopia
says it wants to dam itself into becoming an industrial country that exports electricity, rebranding itself “the water tower of Africa”, a title that should perhaps be shared with Congo and Guinea. Survival International, which lobbies for tribal people’s rights, says the livelihood and culture of 200,000 people in the Omo river basin could be ruined by Gibe III. The Ethiopian government, it argues, has behaved “criminally” in pushing through the project.

Salini Construttori, an Italian company that is building Gibe III, brushes off such charges. The campaigners, it says, have miscalculated the volume of water that the dam would retain. It says the water level of Lake Turkana, across the border in Kenya, would drop by 50cm, not the five metres or more that some claim. A measured release of water from the dam, say the builders, should let local people grow crops all the year round for the first time.