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Research Report

The River Congo - Africa's sleeping giant: Regional integration and intersectoral conflicts in the Congo Basin

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The River Congo – Africa’s Sleeping Giant

Regional Integration and Intersectoral Conflicts in the Congo Basin

Tobias von Lossow

Making greater use of the waters of the Congo could boost development across – and beyond – the region, but threatens to favour particular users’ interests at the expense of others. Within its enormous catchment area, the Congo is the dominant transport network and the lifeblood of the African rain forest, upon which millions depend for their livelihoods. Tapping the river’s resources could significantly improve the region’s water and food supplies, while its hydro-energy potential could theoretically satisfy the electricity needs of the entire continent. Plans to construct more major dams at the Inga Falls demonstrate that the ten Congo Basin states are pursuing common goals – but also having to deal with sharpening intersectoral conflicts. An inconsistent line on dam-building makes it harder for Germany to play a constructive role in these development processes.

When funding for the Inga 3 dam was suspended in summer 2017, the government of the Democratic Republic of the Congo (DRC) called on potential investors to replan the project, preferably on a larger scale. This sent a clear message that the DRC intends to forge ahead with the controversial hydro-power expansion, where the associated boost to mining poses considerable risks for the gigantic river system.

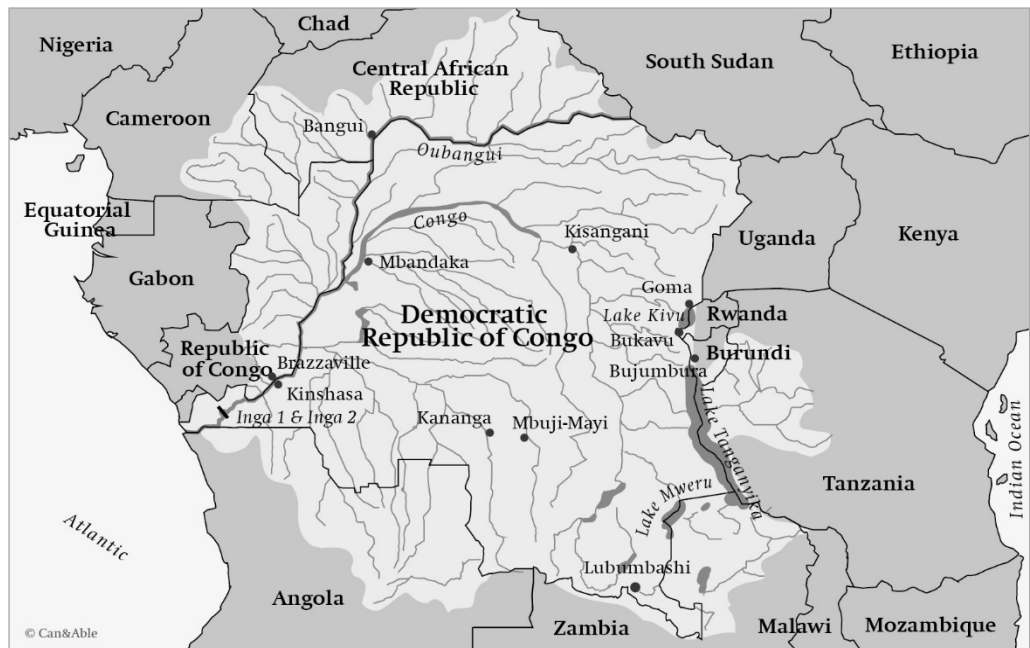
At more than 4,700 kilometres, the Congo is Africa’s second-longest river after the Nile. It rises in the equatorial highlands, flows the length of Africa’s largest rain forest, and drains into the Atlantic on the continent’s west coast. After the Amazon it is the world’s second-largest river by volume, discharging 41,000 cubic metres per second. The Congo is eleven kilometres

wide in places, and up to 220 metres deep; its catchment area is the largest in Africa (3.7 million square kilometres, or about ten times the size of Germany). Countless branching tributaries, waterways and canals criss-cross Central Africa, creating a dendritic network totalling 25,000 kilometres (see map, p. 2). The Congo is the lifeblood of Central Africa’s socio-economic development: most important regional transport network, pulse of a gigantic ecosystem, Africa’s largest body of fresh water, and the world’s greatest reserve of untapped hydro-power.

Congo I: Transport and Navigation

The Congo represents the prime means of transport in a region whose roads are poor and often impassable in the rainy season,

Map: The Congo River Basin



railways run down, and flights scarce and expensive. Many more remote settlements are reachable only by water, making the river the only transport infrastructure for significant parts of the population. Especially from eastern DRC, it often takes weeks to reach the capital Kinshasa, with passengers generally travelling on cargo barges. Commerce also depends heavily on the waterways: officially more than 1.5 million gross register tonnes are transported annually between Bangui and Kinshasa. The actual volume is even greater, as freight in the informal sector – which accounts for the bulk of transported goods – generally goes unrecorded.

Despite its crucial importance for transport, the Congo's shipping infrastructure is deficient: ports lie in ruins, jetties crumble, signals and (warning) signs are neither maintained nor renewed. Crews are often poorly trained, and accidents a regular occurrence on the treacherous waterway. Every year more than one thousand lives are reported lost through storms, navigation errors and incidents involving poorly maintained and overloaded vessels; the true figure is certainly higher.

Accidents with hazardous loads cause risks to the environment. While the enormous volume of the Congo can absorb pollutants better than most, the frequency of such incidents is increasing. Another problem is the illegal "taxes" collected along certain stretches by local networks and criminal gangs. This side-effect of inadequate state control severely hampers passenger and freight traffic. Especially in the south-eastern and northern parts of the basin, shipping also struggles with falling water levels caused by declining rainfall. The flow of the Oubangui for example, an important tributary in the north, has fallen by one-fifth over the past forty years. Sections that were once navigable year-round can now be used no more than two hundred days per year, leaving certain settlements cut off from the outside world.

Congo II: Ecosystem and Biodiversity

The Congo is inseparably bound up with the rain forest it flows through, which is the world's second-largest. The river system and its wetlands form the arteries of the

tropical rain forest, supplying the water for its humid climate. The forest's precipitation in turn supplies large quantities of water to the river's middle reaches. About 50 percent of the Congo's water cycle occurs here, with evaporation from the rain forest accounting for 75–95 percent of the region's rainfall.

The Central African rain forest is the world's most diverse, home to more than 10,000 plant species and 2,500 animal species, including two-thirds of all primates. With the rain forest holding the equivalent of up to 39 billion tonnes of CO₂ – corresponding roughly to total global emissions in 2016 – the Congo's water regime influences the global as well as regional climate. About the same quantity of CO₂ again is held in the basin's peatlands and wetlands.

This critical ecosystem faces massive threats, with logging and mining steadily eating away at the forest. An area of about 2,000 square kilometres is lost each year, with effects much wider than the immediate destruction of forest and loss of diversity. As the ecosystem's capacity to store and release water is degraded, precipitation and river flow decline too, endangering the very existence of the rain forest, hampering navigation and degrading hydro-power potential. In many places climate change is also reducing rainfall, as reflected in falling water levels in the upper and middle reaches.

Congo III: Water Supply and Agriculture

The Congo is by far the largest African river; its annual discharge of 1.3 trillion cubic metres is about ten times the Nile's and five times the Zambezi's. The river contains about one-third of the continent's fresh water. On top of providing the region with an adequate supply of drinking water, this would be enough to irrigate about 60,000 square kilometres of agricultural land and improve the precarious food security situation.

Presently, however, little use is made of the Congo's resources. Domestic water supplies are appalling across the basin. Less than 10 percent of DRC households have a

mains supply; only 26 percent of the population enjoy adequate access to clean drinking water. While the figures for the other Congo Basin states are slightly better, poor water management and lack of funds still leave most of the population dependent on shallow wells or untreated surface water, and as a consequence exposed to grave health risks and elevated mortality.

A similar picture is found in the food supply, which falls far short of needs and potential. There are few irrigation projects of any size in the Congo Basin; given the high precipitation most agriculture is rain-fed. And most of the population practise subsistence farming. As a result of underdeveloped agricultural structures, all ten Congo Basin states are net importers of food, including grain, maize and rice.

Congo IV: Hydro-power

The Congo basin accounts for 13 percent of global hydro-power potential, equivalent to 100,000 MW. That would be enough to supply the current electricity needs of the entire continent of Africa. Moreover, conditions are favourable: steep gradients in places, suitable geological formations, high flow rate and strong pressure, and a large volume subject to comparatively small annual fluctuations.

To date, however, less than 3 percent of this potential has been tapped. While there are about forty barrages altogether, only the Inga dams south of Kinshasa generate significant amounts of electricity:

- ▶ Inga 1 was completed in 1972 with rated output 351 MW.
- ▶ Inga 2 came on stream in 1982 and generates up to 1,424 MW.
- ▶ Inga 3, with a capacity of 4,800 MW, was scheduled to be built as first stage of the Grand Inga project from 2017 onwards, costing €13 billion.
- ▶ Grand Inga is planned to unfold in several stages, ultimately generating 40,000 MW (or almost half of Africa's current electricity demand). This would be the world's

largest hydro-electric project, with a projected cost of around €50–60 billion.

Hydro-power has been slow to develop, on account of high costs, the fragile security situation and a poor investment environment in recent decades. In fact, even the installed capacities are not fully used. Inga 1 and Inga 2 run at under 50 percent, partly because maintenance has been neglected. At the same time the region suffers a lack of electricity. In DRC less than 10 percent of the population have access to electricity, and economic development is severely constrained. For example, in southern DRC mines often operate at reduced capacity or suspend operations because of electricity shortages. In some cases operations have been abandoned for good, and new mine developments lie on ice.

Motor of Regional Integration: Conflict and Cooperation among Congo Basin States

Ten states possess parts of the Congo Basin: the DRC with 62 percent, Central African Republic (11 percent), Angola (8 percent), the Republic of the Congo (Congo-Brazzaville; 7 percent), Zambia (5 percent), Tanzania (4 percent), Cameroon (2 percent), and Gabon, Burundi and Rwanda (each less than 1 percent). Such a small proportion of the Congo's water is actually used that classical rivalries over use and distribution are practically irrelevant. Alongside the large volume of water, the geography also inhibits conflict: the DRC holds the upper, middle and lower reaches, and a significant proportion of the basin's rainfall occurs within its territory. Certain stretches of the Congo and the Oubangui mark the DRC's border, with particular legal ramifications. Dam projects on such border stretches obviously require both sides to cooperate.

The upshot of all this is that control of the Congo is politically largely uncontroversial. DRC basically regards the river as its own, and the other states see little reason to demur because water use has always

been discussed and planned in a regional context. Moreover, several states would profit from such measures. Finally, DRC requires partners to tackle major hydraulic engineering projects. Other Congo Basin states investing here expect a certain degree of control over the river's resources.

The only discussion capable of stirring conflict is the idea of pumping water to other basins, which reappears at intervals. Since the 1980s plans have been put forward to connect the Congo basin with the Nile or the Niger, or to ameliorate the ecological disaster of the rapid drying of Lake Chad. Such water transfer proposals are asking for trouble, and have gradually persuaded DRC to place greater emphasis on the river's transboundary character – in order to secure its interests through a basin-wide cooperation framework with international support and monitoring.

The starting point for a largely harmonious cooperation was navigation. The river system connects important inland ports and connects the states of the Great Lakes Region to the Atlantic. In 1999 Cameroon, the Central African Republic, the Republic of Congo and the DRC established the Kinshasa-based Commission Internationale du Bassin Congo-Oubangui-Sangha (CICOS) to improve conditions for navigation on the Congo. Its mandate was expanded in 2007 to include transboundary water management, turning CICOS into a coordinating and advisory body whose remit includes expanding agricultural irrigation. The experience of successful cooperation over navigation encouraged the member states to throw greater political weight behind CICOS. Gabon joined in 2010, followed by Angola in 2016. Cooperation within the Commission also has a moderating influence on other unconnected conflicts between its members, including DRC's territorial disputes with the Republic of Congo and with Angola.

Alongside navigation – but largely outside CICOS – the development of hydro-electric power, especially at the Inga Falls, is a central pillar of cooperation. All the

Congo Basin states suffer inadequate electricity supplies and share similar goals and interests in this area. Moreover, a regional political and economic heavyweight outside the basin is also pushing for development of Congo hydro-power: South Africa hopes to still its growing energy needs with comparably cheap imported electricity. DRC has agreed to supply South Africa with 2,500 MW generated at Inga 3 from 2021 – more than half its planned output.

Intersectoral Conflicts and the Dominance of Mining

While there is little international dispute over water in the Congo Basin, direct and indirect intersectoral conflicts of goals are certainly visible. Projects seeking to intensify the river's utilisation, as pushed jointly by states in the basin, stoke such conflicts by reinforcing existing imbalances between sectors, accelerating negative trends, and frequently degrading the ecosystem. For example, improvements to the water supply and irrigation lead to increasing discharge of untreated sewage and pesticides entering the rivers.

Incomparably greater are the consequences of the massive expansion of hydro-power sought by all the states and welcomed and encouraged by the African Union, the African Development Bank and the New Partnership for Africa's Development (NEPAD), as well as by the mining industry. Completion of Grand Inga in particular would make a huge contribution to African electrification and development – but a significant increase in electricity generation would lead to a noticeable expansion in mining with consequential harm to the ecosystem. Mining directly impairs water quality when toxic substances contaminate rivers, and flow rates fall because mining is very water-intensive. When new mines are opened and export infrastructure constructed, river levels are also reduced indirectly: expansive logging interferes with the functioning of the entire river system, accelerating the drop in precipitation. Lower water levels

restrict navigation, constraining mobility of the population. Conditions also worsen for water supply and food production, and the amount of electricity generated at the dams falls – and here the circle is complete – with negative impacts on mining.

Unlike other African river basins, extractive industries represent the most important branch of the Congo's economy and have particular influence on water infrastructure projects. The mining sector is pressing for intensified exploitation of deposits in the eastern part of the Congo Basin and in the Copperbelt stretching across Zambia into southern DRC and Angola. To date a deficient electricity supply has prevented exploitation of deposits of cobalt, coltan, copper and gold (with the region containing more than 50 percent of known global cobalt reserves). For a long time the enormous expense, unattractive investment climate and fragile security situation meant that the Inga project was simply not viable. But rapidly growing global demand for raw materials and rising commodity prices have changed the calculus and spurred willingness to invest. The Inga 3 project was initiated in 2015 with a price tag of about €13 billion, although funding is currently suspended and Kinshasa is weighing how to move forward. The first binding commitments to invest in the Grand Inga mega-project – whose realisation seemed a pipe-dream just a few years ago – came in 2015.

With mining in northern South Africa – especially diamonds and iron ore – ready to benefit from an expanded electricity supply, Pretoria is also prepared to make a major contribution. South Africa's enthusiasm for hydro-power received a boost after the country's supreme court blocked an ambitious deal for Russia to build eight nuclear power plants in April 2017. The expansion of coal-fired power generation has also been delayed, and the planned reduction in coal-fired power from 90 percent today to two-thirds of the energy mix by 2030 will certainly require alternative capacities, too.

The socio-economic situation in the Congo Basin makes greater use of the river almost inevitable. But if the resources – and the opportunities they generate – are to remain available in the long term, over-utilisation will have to be prevented, the interests of all users and sectors will have to be taken into account, and the ecosystem will have to be adequately protected. Otherwise there is a risk of drastic ecological repercussions extending beyond the region – and even the continent, not only with respect to climate change. The Congo Basin states have a narrow path to tread: The paradox they find themselves confronting is that they urgently need to develop the riverine resources – while exactly that endangers the underlying functioning of the river system, together with its immense potential.

Questions of Principle for Germany and Europe

The particular sensitivity of the questions associated with the utilisation of the Congo are predicated on its geographical, climatic and socio-economic dimensions: Because the river is so large, positive and negative developments are greatly amplified. The German government has been arguing for more than a decade for CICOS to be expanded, and has implemented measures to improve river navigation, concentrating on training for captains, pilots and mechanics. Such capacity-building initiatives have gone down well because their effects are long-term and felt beyond the Congo Basin. With the GETRACO project (Gestion Transfrontalière de l'Eau dans le Bassin du Congo) the German development cooperation agency GIZ has been financially and institutionally involved in the Congo basin. The project was extended by another three years in 2016, evidencing its material success, confidence-building role, and continuity.

In view of the impending expansion of water utilisation, Germany and its European partners should contribute even more strongly to this process (also outside the

CICOS context). First of all this means developing a stringent but differentiated position on Inga 3 and Grand Inga. This has not been easy, because such projects always present tricky and uncomfortable questions of principle.

Major dam construction is booming again in Africa and Asia, but European states and Western donors hesitate to support such projects. Mega-dams are potential political minefields, as they can exacerbate socio-economic tensions and are frequently imposed against popular resistance. Grave technical, financial, social and ecological objections to such projects are frequently overridden for political motives. This can result in problems such as unsuitable location (for instance the construction of Iraq's Mosul Dam on soluble rock), exploding costs (Brazil's Belo Monte Dam cost one-third more than originally estimated), large-scale forced displacement (China's Three Gorges Dam forced 1.5 million people to leave their homes), or huge and irreparable ecological harm (such as the dramatic decline in downstream Nile fish stocks after completion of Egypt's Aswan High Dam).

Many of these concerns about large dams are undoubtedly justified, but the ostensibly rigorous opposition of certain European states goes no further than denying direct political or financial support to such projects. The credibility of this position is limited, because European companies and consortia – alongside the Chinese – are prominently involved in realising these highly controversial, immensely expensive dam-building ventures. In some cases they are even able to secure their investments with state export credit guarantees. Examples include German guarantees for components for the Sogamoso Dam in Colombia (2012) and Italian guarantees for the Itare Dam in Kenya (2015). In both these cases the feasibility and environmental impact studies were superficial and the findings whitewashed. Another issue is longer-term consistency. For instance about ten years ago the World Bank refused to fund the

Grand Ethiopian Renaissance Dam (GERD). Addis Ababa responded by financing construction largely on its own – and since 2015 the World Bank has been openly considering funding transmission lines to other parts of the country and neighbouring states. While there may be plausible reasons for such a pragmatic turn, it sends a completely wrong message to states considering similar projects.

This fundamentally negative yet inconsistent attitude can neither restrict nor prevent problematic dam-building projects. Instead it makes European states and international donors into unreliable onlookers, whose influence on the shape of projects as they unfold is limited at best. At the same time Saudi Arabia for example is involved in Sudanese projects on the Nile, while China takes care of financing in Zambia and Ghana.

In or Out

Grand Inga is a manifestation of prestige-driven infrastructure megalomania, and comes with a string of risks. Its enormous price tag of €50–60 billion begs comparison, and appears absolutely absurd against DRC's current state budget of €5.8 billion. Despite the involvement of external investors, it will enlarge DRC's budget deficit. At least 35,000 people will have to be relocated in the course of the project. Yet the population is last in the queue for electricity distribution, because the mammoth project has focused from the outset on major users and investors. According to the original plans for Inga 3, 2,500 MW was to be exported to South Africa and another 1,300 MW was earmarked for DRC's mining industry, leaving only 1,000 MW – or about one-fifth – for all households and other business sectors. Once transmission losses are factored in, the population's share could fall to less than 100 MW. Meanwhile, the rich fish stocks downstream from the dam are endangered.

At the same time, the project stands out positively in a number of respects: The large drop at the Inga Falls, high water pressure

and the enormous flow velocity of the Congo mean that the plant will achieve a relatively high degree of efficiency with a comparatively modest ecological intervention. As the dam lies on the lower reaches, negative downstream effects will be restricted to a relatively short 150 kilometre stretch. The run-of-river system proposed for Inga 3 requires a comparatively small reservoir. And finally it is a regional project from which several states stand to benefit.

Despite financing difficulties, Inga 3 remains a priority for DRC. Grand Inga will also be realised sooner or later; the question is no longer whether, but when. Germany and its European partners need to quickly arrive at a clear decision: do the undoubtedly grave technical and financial reservations and ecological and socio-economic drawbacks preclude involvement? If so, it is politically untenable to support companies involved in supplying components, to participate in post-construction activities or to grant export credit guarantees. If such a position is to have an impact it needs to be maintained consistently over time.

The alternative is to explore ways in which this comparatively climate-friendly and inexpensive form of electricity generation in the Congo river basin can be lent political, technical and/or financial support and encouragement. In that event, measures and standards demanded – such as independent and thorough feasibility studies – must actually be observed, even if this requires alterations to the design.

Whatever position is eventually adopted, close long-term cooperation with the Congo Basin states on water resource issues will demand a clear-cut stance on the central and sensitive question of hydro-power. A distinct position of that nature is the precondition for offered advice to be heard – and consequently to contribute to a process where technical limits of the project are discussed, benefits shared with the population, and impacts on the Congo ecosystem limited.

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