

# **Congo Colossus: The History, the Potential and the Environmental Impacts of the Grand Inga Hydropower Scheme**

by Nisha Ligon

The Congo River's powerful Inga Falls sends 42,000 cubic meters of water crashing 102 vertical meters over a massive series of rapids every second: by volume it is the largest waterfall in the world (World Waterfall Database, 2004). Here the Democratic Republic of Congo plans to create the world's largest hydropower scheme, with the promise of an excess of "clean energy" for the entire African continent, but a price tag of US \$50 billion (International Rivers Network, 2007) and a host of extreme environmental, political and societal impacts. The project is already surrounded in controversy and pulled in different directions by a large range of interest groups facing both massive potential gains and losses. A project of this size and impact has environmental potentials in both directions: is it a giant step forward for sustainable and emissions-free power in the developing world, or is it the costly destruction of a unique natural wonder to serve the exploitative industrial interests of an elite few? The social, political, economic and environmental impacts of the project will no doubt be colossal and are far too intertwined to address as separate entities. This paper seeks to look at the environmental costs and benefits of the Inga project within the context of the political, economic and societal situation surrounding it, as well as the history of hydropower projects in the area. As this is a review, rather than state specific effects and impacts the project would cause, I seek to point out areas of general concern and stress the need for in depth environmental impact assessment before any further steps are taken to move forward with the project.

## **White Elephants and Dilapidated Dams: A History of the Inga Hydropower Project**

According to an 2000 document by the Institute of Electrical and Electronics Engineers (IEEE), the Democratic Republic of Congo has the resources equivalent to approximately 88,400 megawatts (MW) of continuous energy, with an astonishing 42,000 MW of that energy located in the Inga region (Hammon *et al.*, 2000). The Congo River is the second largest river in the world after the Amazon: 4,400 kilometers long and

draining a basin of 3,800,000 km<sup>2</sup> to result in a flow rate of 42,000 cubic meters per second (Hammons *et al.*, 1997). The river contains an estimated 30% of the African continent's total water resources. It is the only one of the world's largest rivers that has a significant slope, with 102 meters of vertical slope over a straight distance of just fifteen kilometers (Di Panzu, ----). This slope gives the falls very high potential for hydroelectric power generation (Mbuere ua Mbuere and Musaba, 2004), which harnesses the gravitational potential energy of water traveling from higher elevation to lower elevation (and hence releasing potential energy) to provide electricity. This energy comes originally from the sun's heat energy, which causes water to evaporate and rise into the atmosphere. This eventually falls as rain into the basin, which then drains down into the river and flows from high to low elevation, decreasing in potential energy as it loses height. Because the energy originates at the sun, this resource is considered renewable and is in theory emissions free, though in truth the construction of dams and power plants to harness such energy is a cost, energy and resource intensive process, and not at all emissions free. Nevertheless hydropower electricity generation remains an attractive energy alternative worldwide.

Inga falls is the largest single-point source of hydropower anywhere in the world, with an estimated 370 billion kilowatt hours (kWh) of net energy per year. It is located at a latitude of 6 degrees south and a longitude of 14 degrees east, 150 kilometers upstream from the mouth of the Congo River and 225 kilometers downstream from Kinshasa, DR Congo's capital (Mbuere ua Mbuere and Musaba, 2004).

In 1972 Mobutu Sese Seko, the dictatorial president of then Zaire, commissioned the first hydropower station at the falls: Inga I. With a head height of 50 meters and 780 cubic meters per second of turbine flow, it had an installed capacity of 351 MW and an expected energy production of 2.4 TW hours per year. The next station, Inga II, was commissioned in 1982 and is slightly larger and much more productive, with a 58 meter head height, 2800 cubic meters per second of turbine flow, an installed capacity of 1424 MW and expected production of 10.4 TW hours per year (Mbuere ua Mbuere and Musaba, 2004). But despite their generous power production, the dams are often labeled "white elephants" of Mobutu, as they were projects commissioned more for prestige than practical value. Zaire's poor population, the majority of who had no access to a power

grid, could barely begin to use the large amount of energy produced by the two new dams.

Though these first two dams were originally operated with a combined output of 1,775 megawatts of electricity, when the country broke into civil war during the late 1990's they went unmanaged and fell into disrepair (Kolterman, 2006). The dams were left heavily silted and operating at only about 30% of capacity (International Rivers Network, 2007). They are currently owned by the DR Congo's Société Nationale d'Electricité (SNEL) (Mbuere ua Mbuere and Musaba, 2004), but operate far below their potential. To revive the current dams the reservoir above must be dredged and the turbines must be desilted—an expensive and labor-intensive process. As of 2006, only eight of the fourteen turbines on the dams were operational. Yet despite their minimal operation, the dams already generate more power than DR Congo needs (only 6% of the national population has access to the power grid), so it exports the excess to Republic of Congo, Zimbabwe and Angola (Kolterman, 2006).

Yet the income from this energy sale has given both operators and investors a taste of the potential for hydroelectric energy production and export from the Inga Falls. The current plan for the Inga hydropower scheme is to first add Inga III, a large dam that would produce 3,500 megawatts of electricity, then eventually dam across the entire Congo River to create the Grand Inga dam, with an projected output of 39,000 megawatts (Mbuere ua Mbuere and Musaba, 2004). In October 2004, the governments and utility companies of five African countries—South Africa, Botswana, Angola, Namibia and DR Congo—formed the Western Corridor Project (Westcor), which aims to develop Inga III and Grand Inga. The project is geared towards fulfilling projected energy needs in these five countries, as well as being used to attract energy-intensive industries to the region. Westcor also anticipates exporting significant amounts of electricity to other African regions, and possibly as far as to Europe (International Rivers Network, 2007). To continue progress on the planning, a meeting of regional power companies was recently held by the World Energy Council between March 16 and 17 in Gaborone, Botswana, labeled “How to make the Grand Inga Hydropower Project Happen for Africa” (World Bank, 2007). Plans continue to move forward and it appears that the Inga Project will happen, though to what scale it will be instituted is yet unclear

### **High Head, High Hopes: Current Plans for Grand Inga**

The Grand Inga project would produce 39,000MW of electricity, over twice the generation of the infamous and controversial new Three Gorges Dam in China. As stated above, the first development phase will be the Inga III dam (3,500 MW), considered a stepping stone to Grand Inga. In addition to Grand Inga, the World Bank is planning to fund the restoration of the two existing dams at Inga falls and to improve the transmission network for the power that will be provided. This \$500 million project is called a “Regional and Domestic Power Markets Development Project,” and fits in with a broader plan to integrate the electricity grids across southern Africa (World Bank, 2007). In 2003 the Bank gave the German corporation Siemens a contract to rehabilitate Inga I and II, and planning is well underway (Hathaway, 2005). Next, to create Inga III, a channel would be diverted from the present reservoir and up to nine turbines would be installed (Kolterman, 2006). To give an idea of the scale of this project, the giant rotors used will weigh 250 tonnes each, with a diameter of eight meters across (Di Panzu, ----). Following this, the Grand Inga would dam across the entire river, diverting the water flow into a dry valley neighboring the river. The proposal of Grand Inga is for fifty-two giant turbines (Kolterman, 2006) to generate over twice as much power as any dam in history. If the Inga Hydropower Project goes through to its planned conclusion, rehabilitating Inga I and II, then adding Inga III and Grand Inga, it should provide enough power for the entire African continent, plus extra capacity, which may be exported to the Middle East and southern Europe (World Bank, 2007). The South African Power Pool hopes that planned connections will reach northeast to Egypt through Central African Republic and Sudan, northwest to Nigeria through Gabon and Cameroon, and south to South Africa along two routes, one through Angola and Namibia and Botswana, and the other through DR Congo, Zambia and Zimbabwe (Di Panzu, ----).

### **The Dam Few Who Stand to Gain: Major Stakeholders for Inga’s Development**

A crucial component of environmental impact assessment is identification and understanding of the role that various stakeholders play in the planning and instituting a development project. Many groups stand to gain massive wealth and power from the development of further hydropower generation on Inga Falls, and according to the

International Rivers Network, “concerns are growing that foreign and industrial interests will gain vast economic benefits from this mega-project” (International Rivers Network, 2007). The government of the Democratic Republic of Congo, as well as the other nations set to receive and/or distribute power from the project are clearly powerful stakeholders, and they stand to gain massive amounts of energy for distribution to their citizens or for sale to private industry. They have also developed partnerships such as NEPAD (New Partnership for African Development), SADC (Southern African Development Community) and other intergovernmental “development” groups, which will play an important role in promoting the scheme as a step forward for Africa’s development (International Rivers Network, 2007). WESTCOR (Western Power Corridor) is a joint venture company registered in Botswana and another major stakeholder in the project. WESTCOR is the probably company to handle transmission of power from Inga through Angola, Namibia and Botswana to Southern Africa (Mbuere ua Mbuere and Musaba, 2004). As a major source of funding for the rehabilitation of Inga I and II, as well as a potential funder for the Grand Inga scheme (World Bank, 2007), the World Bank holds a large stake in the project and will also provide it with international credibility to attract foreign investors.

Yet South African energy company Eskom is perhaps the stakeholder that stands to gain most from the development of Grand Inga for hydropower. Eskom, chaired by Reuel Khoza, is one of the five largest energy companies in the world and currently produces more than half of the electricity generated in Africa. Currently the utility relies mainly on coal-power, but the hydropower from Inga would provide it with the potential to tap into resources and subsidies for low greenhouse gas emissions alternative energies (IRN and Earthlife Africa, 2003). Eskom is currently the largest single driver of the Grand Inga plan, and the project fits into their broader plan to develop a power grid linking all of the southern African nations (International Rivers Network, 2007). Other private companies, which may be contracted to work on certain portions of the project, are also strong stakeholders. For example MagEnergy of Canada has been working to repair four of the turbines on the current dams, Inga I and II. The company is privately funding their own work, with a contract to share the DR Congo’s revenue from electricity sale (Mbuere ua Mbuere and Musaba, 2004).

Yet a crucial group that should be a major stakeholder, the local community, seems to have no say at the moment. Civil society groups are demanding that local Congolese communities be included in the project planning and compensated for the impact the dam will have on their future, “as well as provided with reparations for past harms” (World Bank, 2007), yet as of now there are absolutely no indicators that residents of the area are being included in project planning. This brings up a question of who the main stakeholders are truly targeting to receive the benefits of this project. According to Hathaway of the International Rivers Network,

Despite its priority position and high profile, very little about the project has been revealed, and virtually no engagement of civil society has been undertaken by any of the major players. There are concerns that closed-door deals for contracts to Inga could be linked to lucrative mining and logging concessions in DRC and elsewhere (Hathaway, 2005).

The dam will cause the flooding of several local villages (Kolterman, 2006), whose residents will have to be displaced, and the changes it causes in the river will no doubt have dire consequences for local subsistence fisheries, agriculture and pastoralism—in the immediate vicinity as well as both down and upstream. Ideally a careful environmental impact assessment will address these issues in addition to the purely ecological consequences of the project, and the outcome will demand a role for the local population in further planning.

### **Clean or Mean? Grand Inga’s Projected Environmental Impacts**

Since hydropower indirectly derives its power from the sun and does not involve the burning of fossil fuels, it is generally considered a source of clean and renewable energy. On the other hand, the environmental effects of many dams are often very severe, and indirect greenhouse gas emissions from the construction of the dam and the underwater decomposition of flooded vegetation may negate the “emissions-free” energy provided by the flowing water. In this section, the projected environmental impacts of the dam will be discussed, including adverse effects on the river, as well as the potential of the dam for helping to reduce greenhouse gas emissions that may lead to climate change.

In his presentation on the Grand Inga Power Plant Project, Mr. Vika di Panzu, chief executive officer of SNEL states that the “exceptionally regular river flow” of the Congo will allow the dam to be operated on a run-of-river basis (Di Panzu, ----), meaning that rather than holding a large reservoir of water for managed release, the river will continue to flow at close to its natural rate. Because the Inga River is on the equator where northern and southern rainfall patterns are “contra cyclic” to the river flow, the flow rate remains relatively stable. Therefore, the dam can be operated on this “run-of-river” basis, without needing a large storage pool to provide water during dry spells (Mbuere ua Mbuere and Musaba, 2004). Planners like di Panzu argue that this will help minimize the environmental impact of the project. It is true that this style of operation will lead to less flooding of land than other large dams, which require massive reservoirs to retain water for continued operation during dry spells. This in turn means there will be less loss of riverside land (including floodplains which provide unique habitat for flora and fauna, as well as nutrient rich soil for cultivation).

Additionally, the creation of large artificial bodies of standing water in many areas of tropical Africa has led to bilharzia infection in local communities. Bilharzia is transmitted by water dwelling snails carrying trematodes of the genus *Schistosoma* (World Health Organization, 2007). These snails live in reedy areas of standing water, and the creation of reservoirs for dams often provides them with an ideal habitat. Hopefully with run of the river operation, the Inga project will be able to avoid creating such a habitat and the local residents will still be able to use the flowing water of the Congo River for subsistence purposes without the added risk of bilharzia. Yet bilharzia infected snails are not the only organisms for which standing water would provide a habitat. The Inga area already has very aggressive mosquitoes and many other insects. According to Kolterman (2006) the insect problem is so bad that many local people have left to start lives elsewhere, away from the pests. The reservoir from the dams, though small, may still provide a significant breeding ground and habitat for malarial mosquitoes (Kolterman, 2006). These are major concerns for both the environment and public health and should be carefully analyzed before the project goes forward.

Another major issue associated with dams that flood a large area of land is that of the greenhouse gas emissions of methane produced by decomposing plants under the

flooded water. It will be important for the environmental impact assessment of this project to carefully calculate whether the supposedly greenhouse-gas free power of the dam actually makes up for the amount of methane that will be released with the necessary flooding, especially in a place with such rich and dense vegetation. Ideally, with run-of-river operation a minimal amount of land will be flooded, and some vegetation may be cleared beforehand to decrease methane release. And as a caveat to the acceptance of run-of-river operation as necessarily environmentally benign, Hathaway of the International Rivers Network warns that “run-of-river” is a poorly defined term often used to “greenwash” hydropower projects that are actually quite environmentally destructive (Hathaway, 2005). In conducting environmental impact assessment it will be critical to consider exactly how the dam will be operated and how much water will be backed up behind its wall.

A study by Professor Gerrit Basson of the Department of Civil Engineering at University of Stellenbosch (2007) highlights how hydropower dams will change river flow regime, causing many major changes in the surrounding ecosystem. The flow regime is the river’s schedule and pattern of low flows, high flows and flooding. These cycles and patterns generally play a crucial role in the life cycles of riverine organisms, as well as regulating the geography of the river and surrounding land. Small, annual floods may stimulate fish spawning, help to get rid of poor-quality water and move around sediment. Large floods also provide scouring flows, which carve the topological form of the channel, while depositing fertile silt, soil nutrients, eggs and seeds on flood plains. But damming stabilizes the flow of the river, often reducing or eliminating flooding and flow variation. The loss of low flows may cause the loss of necessary conditions for certain phases of the life cycle for riverine flora and fauna. It may also alter the flow of groundwater, affecting nearby trees with roots adapted to different conditions. Because of the ecological interconnections between species, this loss of low flow may directly affect only a few species, but the trickle-down effects through ecological interactions will have major consequences for the entire ecosystem. The loss of small floods means that riverbed sediments will no longer be deposited on the flood plains. As floods play a crucial role in carving heterogeneous habitats in the river and on the banks, their loss will also have an adverse effect on the physical diversity of the landscape, and hence a loss of

biological diversity as habitats become more homogeneous. Large floods, which Basson labels as “re-setting agents for the river,” renew habitats and may also kill off old and diseased individuals. Though these floods are not generally stopped altogether by dams, their extent and effect is greatly reduced (Basson, 2007). Changes in the flow regime of the Congo River will be inevitable with the addition of Grand Inga, even if the dam is operated in the run-of-river style. Not only will this affect the organisms living in the river, but also the people who use the river for subsistence, with the loss of renewable wood resources for household fire and construction materials, changes in the water resources and a the loss of floodplains as fertile grazing land.

The building of a dam, no matter how much it operates with the run of the river, will no doubt have dire consequences for the riverine ecosystem around it. The organization Innovative Resources Management concluded that the Inga hydropower project would have major ecological consequences after conducting a survey of the site. Their study describes the dams as “the greatest future threat to the biodiversity of the region,” (quoted in World Bank, 2007). The dam will block spawning ground from fish downstream, and prevent the migration downstream of fish above it. In turn this will impact local fisheries.

Additionally, the loss of fertile silt deposits downstream will affect the growth of both natural and cultivated vegetation (Kolterman, 2006). One must also consider the deforestation that will occur during the building of the dam and the installation of transmission lines across the continent (Di Panzu, ----). Another major concern regarding these transcontinental power transmission systems is their efficiency at transmitting the generated power long distances. Planners intend to install extra high voltage DC transmission lines, which would help minimize energy loss through heat (Hammons *et al.*, 1997), yet over such distances a large percentage of the generated capacity will no doubt be lost.

Climate change, probably the number one hot issue being discussed in environmental circles today, is key to the environmental impact assessment of the Inga hydropower project planning. Interestingly, the project may help to slow climate change if instituted properly, but it may also be adversely affected by climate change. Global warming scientists predict more extreme droughts in areas with previously stable year

round precipitation. Such a change could greatly reduce the power output from the dam, and also require that it flood more land rather than using a run-of-river style operation. On the other hand, the increase in flooding that scientists believe will accompany global warming could make the dam unsafe as well as greatly increase its sedimentation (Hathaway, 2005). Some researchers argue that the dam will be too vulnerable to climate change, yet it is difficult to predict how exactly climate change will effect it. Nevertheless it is a real concern for the dam's operation (especially since the scheme would not be completed for at least a few decades) and should be carefully analyzed in the environmental impact assessment.

And while the project may be vulnerable to climate change its proponents argue that since dam operation is in theory "emissions free," the project could also help to combat climate change. According to Khoza of Eskom, "The Inga project is one that really excites us because we believe that in one fell swoop we could address the bulk of Africa's needs and do it in a manner that is clean and environmentally friendly" (quoted in Hathaway, 2005). On this premise the project is hoping to get funding from the Clean Development Mechanisms (CDM) under Kyoto Protocol, which allows wealthy industrialized nations to fund clean energy projects in developing countries in exchange for their own greenhouse gas emissions (Hathaway, 2005). One would hope that under CDM the project would be subjected to the strictest standards of environmental impact assessment and planning, yet by receiving CDM funding the Inga project would also undermine the mechanism, which is intended to fund projects for clean energy which *would not otherwise happen* without its funding. It seems clear that even without CDM, the governments of the nations involved and private investors stand to gain massive wealth and benefits through the Inga Dam and would still move forward with the project. As such a large project, Grand Inga would draw money away from smaller scale clean energy projects on the continent, such as solar, geothermal and wind power endeavors. It remains to be seen whether the Grand Inga scheme would truly provide "green" and sustainable energy, but if the argument is to be made that its environmental impacts will outweigh its costs, then strong scientific evidence must first be shown.

## **Behind the Dam Wall: Hidden Agendas and Special Interests in Inga's Development**

Reuel Khoza, chairman of Eskom is quoted as saying “Africa urgently needs energy to lift its people out of poverty and deliver sustainable development. The Congo River offers enormous opportunities for doing this” (Hathaway, 2005). Yet Khoza claims this project as sustainable without any scientific basis, and fails to present any form of in dept environmental impact assessment. To be most effective an environmental impact assessment must be carried out in the very early phases of project development. The Inga project planners claim to have already done it and concluded, “The environmental impact assessment study of the project have shown that there would be no major impact neither on the ecosystem nor on the human factor” (Di Panzu, ----). The fact that little to no information on this is provided indicates a lack of confidence in their results, as well as the fact that the those involved in planning place little importance on assessing the environmental impact of the project. This is ironic, as many of the project's proponents also seek to spin it as a “green power” project that will help reduce greenhouse gas emissions. Di Panzu goes on to list a few blurry and indefinite “solutions to minimize those [environmental] problems,” negating his own earlier statement that the project would have no major environmental impacts (Di Panzu, ----).

In addition to the poorly assessed environmental impacts that the dam will have in the region, there are also questions as to whether the Inga Dam Project is good for development in the DR Congo when its main aim is to provide energy for export, rather than internal use (World Bank, 2007). If Eskom's past dealings are any indicator of the future usage of the massive amounts of energy to be provided by the Inga projects, then poor Congolese citizens stand to miss out on the benefits. The company currently has a contract on the 2000 megawatt Cahora Bassa dam in Mozambique. It requires that such a large percentage of the power generated be sold back to South Africa at extremely low prices (the rough equivalent of \$0.01 US Dollars for every two kilowatt hours, a price fixed until 2030) that Mozambique must re-import power from elsewhere (IRN and Earthlife Africa, 2003). According to Terry Hathaway of the International Rivers Network, “Grand Inga is not meant to benefit Africa's poor... Once again, poor people are being used to sell a prestige project that will benefit industrial enclaves and urban elites” (quoted in World Bank, 2007). The goal of the most powerful stakeholders is

clearly not electricity for African villages, but rather electricity for energy-intensive industries (especially for the extraction and processing of earth materials) (Kolterman, 2006), industries that also tend to cause huge detriment to the environment. Hathaway adds,

Proclaiming that Grand Inga will 'light up Africa,' Eskom and NEPAD are selling the idea that Inga will be the foundation for Africa's industrialization, thereby being a key component in alleviating the continent's poverty. But just as likely, its development will provide industrial economic growth for foreign businesses seeking cheap electricity and financial opportunities for Africa's elite business and government leaders, offering few 'trickle-down' benefits (Hathaway, 2005).

With so much power generation already available from Inga, it seems that in the interests of its general population, DR Congo could better spend the money to set up a transmission infrastructure so that more than a measly six percent its over 65 million citizens (CIA, 2007) could actually use the electricity being generated.

With no plans proposed for electrifying the local communities, DR Congo clearly does not stand or aim to gain a sustainable source of energy for its impoverished population, but rather to gain income from large industries, which will benefit only those who are already rich. The environmental sacrifices involved with the creation of such a dam could potentially be weighed against the benefits received by the population receiving energy and the potential for what that population may achieve with this resource, but to create such a large project to provide cheap energy for industries (including the environmentally destructive extraction industry exploiting central and southern Africa's abundant natural resources) is environmentally, socially and economically irresponsible and short-sighted. Rather than looking at the long-term importance of clean energy and the potential rise in national and even multinational wealth and productivity through the provision of basic resources such as electricity to an industrious general population, proponents of the Grand Inga Scheme are concentrating on the quick money they can through by exploiting their environment through yet another Congo Colossus.

## References

- Basson, G. 2007. Hydropower Dams and Fluvial Morphological Impacts – An African Perspective. *United National Index of Sustainable Development Studies: Energy*. Available on the World Wide Web <<[http://www.un.org/esa/sustdev/sdissues/energy/op/hydro\\_basson\\_paper.pdf](http://www.un.org/esa/sustdev/sdissues/energy/op/hydro_basson_paper.pdf)>> Accessed 3 November 2007.
- CIA. 2007. Congo, Democratic Republic of the. *Central Intelligence Agency: The World Factbook*. Available on the World Wide Web <<<https://www.cia.gov/library/publications/the-world-factbook/geos/cg.html>>>. Updated 1 November 2007. Accessed 5 November 2007.
- Di Panzu, V. ----. The Grand Inga Power Plant Project. *South African Power Pool*. Available from the World Wide Web <<<http://www.sapp.co.zw/documents>>>. Accessed 3 November 2007.
- Hammons, T.J., Taher, F., Gulstone, A.B., Blyden, B.K, Johnstone, R., Isekemanga, E., Pauku, K., Calitz, A.C. and Simanga, N.N. 1997. African electricity infrastructure, interconnections, and exchanges. *IEEE Transactions on Energy Conversion*, 1997, 1-16.
- Hammons, T.J., Blyden, B.K., Calitz, A.C., Gulstone, A.B., Isekemanga, E., Johnstone, R., Paluku, K., Simanga, N.N. and Haer, F. 2000. African electricity infrastructure interconnections and electricity exchanges. *IEEE Transaction on Energy Conversion*. 4(15) 470-480.
- IRN and Earthlife Africa. 2003. Eskom's Expanding Empire: The Social and Ecological Footprint of Africa's Largest Power Utility. *International Rivers Network Online*. Available on the World Wide Web <<<http://www.irn.org/programs/safrica/index.php?id=030601eskomfactsheet.html>>>. Accessed 3 November 2007.
- International Rivers Network. 2007. IRN's Grand Inga Campaign. *International Rivers Network Online*. Available on the World Wide Web << <http://www.irn.org/programs/congo/>>>. Accessed 2 November 2007.
- Koltermann, U. 2006. Congo dreams of world's biggest hydroelectric dam." *Monsters and Critics: Energy Features*. Available on the World Wide Web <<<http://news.monstersandcritics.com/energywatch>>>. Created 8 December 2006. Accessed 3 November 2006.
- Mbuere ua Mbuere, B. J. and Musaba, L. 2004. Inga: Promise. *Business in Africa Online: Energy in Africa*. Available on the World Wide Web <<[www.businessinafrica.net/energy\\_in\\_africa](http://www.businessinafrica.net/energy_in_africa)>>. Created 18 May 2004. Accessed 2 November 2007.

World Bank. 2007. Investors hold roundtable to discuss Inga Dam. *Bank Information Center*. Available on the World Wide Web <<<http://www.bicusa.org/en/Article.3247.aspx>>>. Created 12 April 2007. Accessed 2 November 2007.

World Health Organization. 2007. Fact Sheet: Schistosomiasis. *World Health Organization Partners for Parasite Control*. Available from the World Wide Web: <<[www.who.int/wormcontrol](http://www.who.int/wormcontrol)>>. Accessed 17 Oct. 2007.

World Waterfalls Database. 2004. World's Largest Waterfalls. *World Waterfall Database Online*. Available on the World Wide Web <<<http://www.world-waterfalls.com>>>. Accessed 4 November 2007.