

Pakistan

Experts deliberate on safety aspects of Subansiri dam

<http://www.assamtribune.com/scripts/detailsnew.asp?id=dec2413/at06>

STAFF Reporter

GUWAHATI, Dec 23 – The expert-to-expert meeting held here today on the [issue](#) of the Lower Subansiri Hydroelectric [Power](#) Project (LSHEP), could not arrive at a final conclusion and it was decided by the participants at the meeting to go for further sittings on the issue.

According to sources, Chairman of the Central Water Commission (CWC) AB Pandya presided over the sitting and on behalf of the local experts, Dr Bhagawatpran Duorah made a [presentation](#) on the seismology aspect-related dam safety issue. The experts from the Geological Survey [of India](#) (GSI) and the CWC also made [presentations](#) to counter the points raised by the local experts.

The Central Government experts claimed that even with the Peak Ground Acceleration (PGA) value of 0.5 g, the dam will remain safe as per the seismic response spectra. The local experts then asked them to provide the details of the claims made by the Central Government experts, for the purpose of analyzing.

The Central Government experts maintained that a slight strengthening of the neck portion of the dam would be required. The local experts called for the details for examination.

The local experts also pointed out that inclusion of a regulating pond, downstream of the dam, would [eliminate](#) the diurnal flow variations. It would also provide irrigation benefits and help in maintaining the [natural](#) temperature of the water, which is important for aquatic life, besides providing recreational facilities.

The CWC Chairman said that this point has a technical strength and it should be studied further.

However, the decision as to who would do the further [studies](#), remained to be arrived at today's sitting. Discussion could not be held on other geological, seismological, environmental and [social issues](#) concerning the project, due to paucity of time. The next date of sitting was also not finalized today, sources said.

Meanwhile, the National Hydroelectric Power Corporation (NHPC) has stated in a statement that responding to the comments of Prof Duorah, Dr JR Kayal ex-Deputy. Director General GSI, explained with the help of his presentation that the possible sources of great earthquakes in the Himalayas are of deeper origin/source with the help of established models.

Further, Dr ID Gupta, ex-Director CWPRS, Pune explained the context and importance of response spectrum in the [design](#) and safety analysis of dams and brought out that so much conservatism in design parameters and design [practices](#) are taken, hence the dam is safe even for PGA value of 0.5g.

S K Sibal, Director (Design), CWC with the help of design analysis showed that the even the earlier dam section was safe for PGA of 0.5g based on response spectra. He informed that the modification adopted in the dam design, as proposed by Dam Design Review

Panel (DDRP), shall take care of the weak properties of the foundation material. He clarified further that the dam section proposed earlier are safe as regards their dynamic stability is concerned.

Nigeria

MAMBILLA HYDRO CONTRACT NOT AWARDED – MINISTRY

Category: News
Published on Tuesday, 24 December 2013 05:00
Written by Nuruddeen M. Abdallah

<http://dailytrust.info/index.php/news/12952-mambilla-hydro-contract-not-awarded-ministry>

The Mambilla hydroelectric power project has not been awarded yet, the Federal Ministry of Power said in a reaction to Daily Trust exclusive story on the project.

In a letter to Daily Trust, permanent secretary Amb. Godknows B. Igali admitted that the “project has been in the drawing board for about 30 years,” but that the ministry “is currently working on firming the project cost.” He was reacting to Daily Trust’s story entitled “Intrigues delay Nigeria’s biggest hydro project: Mambila dam project on drawing board for 31 years.”

Igali said, “The Ministry is in agreement that the Mambilla project has been on the drawing board for about 30 years. This, however, is not unexpected for hydro projects of this complexity, scope and size. “This is very well in accordance with the project development process of such projects and in line with International Commission on Large Dams (ICOLD) standards on construction of large dams prescribing a requirement for detailed study and re-study, design and redesign of large dam projects until optimal efficiency levels are attained.” Daily Trust reported that high-level intrigues and power-play by powerful interests in the Presidency are the cause of the unending delay in the Mambilla project.

Part of the contract was earlier awarded to a Chinese firm but later cancelled and another Chinese consortium close to people in government is trying to influence the power ministry to handover the whole project on a turnkey basis to their company without a tender. But the permanent secretary said, “The Ministry further wishes to clarify that there is no substance in the statement in your article that a \$3.2 billion (N580 billion) contract has been awarded in favour of a Chinese consortium for the Mambilla project with a sharing ratio of 70/30. On the contrary, the Ministry is currently working on firming the project cost and the contracting parties in compliance with all the necessary guidelines of the Public Procurement Act.” With respect to possible commencement of construction, most of the ongoing discussion is with Chinese EPC firms, most of which have repeatedly shown interest in providing funding for the project, the ministry said. (See full contents of Amb. Igali’s letter in tomorrow’s Daily Trust)

Re: Intrigues delay Nigerian biggest hydro protect

Category: Opinion
Published on Wednesday, 25 December 2013 05:00
Written by Godknows B. Igali
Hits: 766

The Federal Ministry of Power has noted with great concern the front page headline in the Daily Trust of Monday 16th December, 2013, titled “Intrigues delay Nigeria’s biggest hydro project”, with the rider “Mambila Dam Project on Drawing Board for 31 years”. The Ministry has considered it necessary to draw your attention to and address some of the salient issues raised in the publication.

The Ministry is in agreement that the Mambilla project has been on the drawing board for about 30 years. This, however, is not unexpected for hydro projects of this complexity, scope and size. This is very well in accordance with the project development process of such projects and in line with International Commission on Large Dams (ICOLD) standards on construction of large dams prescribing a requirement for detailed study and re-study, design and redesign of large dam projects until optimal efficiency levels are attained. It is noteworthy that in most cases, these processes could take up to 20-50 years to complete considering hydrology, basic socio-economic data and environmental issues. This could be said to be, to a large extent, the experience of every single large dam project in the world. In the case of Mambila, the project has been designed from its initial capacity of 2,600MW to the present 3,050MW installed capacity. The increase in the installed capacity was achieved by relocating the original Gembu Dam to about 20km downstream to create a new Nya Dam thereby enlarging the catchment area and providing more water for irrigation and power generation. Other design considerations included positioning the reservoir areas and dam axes with a view to minimising the impact of the project on the existing communities. This involved the reconfiguration of the tunnel, power house and dam reservoir as well as appurtenant works. In addition, the essence of the new enlarged design of the dam is to take advantage of the hydrological benefits of the project to include irrigation and agricultural farmland development towards boosting agricultural production and self-sufficiency for the nation. In this regard, significant economic benefits have been incorporated to the original design of this project including about 20,000 hectares of farmland over the design review period. This is expected to enhance the agricultural value chain in the Benue -Taraba corridor and generate significant employment opportunities thereby mitigating the security challenge of the area. The design review also included the provision of more corridors for the evacuation of power to major load centres across the country. Contrary to your publication, the Ministry wish to state the scope of works for Lahmeyer International was to prepare a Bankable Feasibility Report and the assignment has since been concluded while Messrs Coyne et Bellier, a division of Tracterbel Engineering was engaged by the Ministry for the

detailed Engineering Design and Project Management of the Mambilla Hydroelectric power project. The completion of the detailed engineering work prior to award of contract is consistent with the Federal Government policy of ensuring that the risk of variation to contracts prices are minimised. The detailed Engineering Design has since been completed while the Project Management component will kick off upon the eventual award of contract by the Federal Executive Council. The Ministry further wishes to clarify that there is no substance in the statement in your article that a \$3.2 billion (N580 billion) contract has been awarded in favour of a Chinese consortium for the Mambilla project with a sharing ratio of 70/30. On the contrary, the Ministry is currently working on firming the project cost and the contracting parties in compliance with all the necessary guidelines of the Public Procurement Act. On a very positive note, we are pleased to acknowledge the support of the National Economic Council in providing the necessary counterpart funding for the project as part of the reinvestment of the proceeds of the sale of NDPHC generation assets. With respect to possible commencement of construction, most of the ongoing discussion is with Chinese EPC firms, most of which have repeatedly shown interest in providing funding for the project. Therefore, rather than the project being stalled, substantial progress has been made in negotiations with these Chinese companies. The firms under consideration by the Ministry have undertaken similar large hydropower projects in other countries all over the world with resounding successes. We therefore wish to assure your newspaper and the general public that the Federal Government is committed to the development of the Mambilla Hydroelectric power project and for the first time in 30 years, there is concerted effort and a holistic development strategy for actualising this landmark project. On completion of the current processes, the Ministry would ensure that Nigeria has full value for money without compromising environmental safeguards, standards and international best practices. In conclusion, we wish to implore on your newspaper to be at liberty to reach us for clarification on any issue in the power sector as the need arises.

Please accept the assurances of the best wishes of the Honourable Minister and my humble self.

Ambassador Igali, OON, FNAH, is Perma-nent Secretary, Federal Ministry of Power.

Iran

Water reserves of Tehran's dams averagely reach 23 percent of capacity

21 December 2013, 12:07 (GMT+04:00)

Baku, Azerbaijan, Dec. 21
By Umid Niayesh - Trend:

The water reserves of dam reservoirs in Iran's capital city reached a critical level and stood at 23 percent of total capacity, Mehr news agency reported on Dec. 21.

Volume of the water in 5 dam reservoirs of Tehran has increased by 232 million cubic meters during current crop year (started in September 22, 2013), compared to the same period of last year, the report said.

Currently total water volume in Tehran's dam reservoirs has reached 426 million cubic meters, which indicates a decrease by 35 percent compared to the same period of last year.

The dam reservoirs' input during current crop year has reached some 146 million cubic meters, which indicates a 22 percent decrease compared to same period of last year.

On October 14, Iranian PANA news agency quoted the Managing Director of Tehran Water and Wastewater Company Mohammad Parvaresh as saying that Iran's capital city faces a 40 million cubic meter water shortage.

Parvaresh said on July 21 that Tehran province's water consumption increased by 11 percent in summer compared to previous year.

According to the reports, Tehran experienced water interruptions for a few hours in some areas in late July.

Water shortages have always been a pressing problem in Iran. The country is located in the arid zone and over the past 40 years has repeatedly faced drought.

The drought of 1992-2002 caused considerable damage to agriculture. Quotas for fresh water were applied in some cities including Tehran.

http://www.sentinelassam.com/op_ed/story.php?sec=33&subsec=0&id=178093&dtP=2013-12-20&ppr=1

KK Bora

The topic of dams has been the subject of controversy in the present century. Yes, in the present century only. This can be said because the talks of dams were not so controversial in the past. There are big, important and hidden facts in small (little known) dams that have been overlooked. Incidentally, our ancestors (early civilisations) were quite lucky in this regard. They did not have the requisite knowledge of earthquakes, pollution, neither did they know what environment or bio-diversity meant nor did they care for floods, for all these aspects of Nature were for the innocent people "just acts of God." However, they were great builders and they built dams.

The very first dam builders were the Zagros who lived in the foothills of Zagros Mountains on the eastern edge of Mesopotamia. Here evidence of 8000 years old canals has been found. About 6500 years ago the Sumerians built irrigation canal networks along the lower Tigris and Euphrates rivers. The earliest dams, the actual remains of which have been found, were built around 3,000 BC as part of an elaborate water supply system for the town of Jawa in modern-day Jordan.

The Romans were also great dam builders. A 46-metre-high Roman stone dam near Alicante is an example and it was destined to be the highest in the world for the better part of three centuries. Dam building in south-east Asia is also an old story. Dam building first started in today's Sri Lanka. King Parakrama Babu, a 12th century notorious Sinhalese ruler, is boasted to have built and restored more than 4,000 dams. Today, in America there are nearly 20, 00,000 small dams (estimated), and 75,000 large ones (six feet or higher). These statistics have been obtained from the data-base records of the US Army Corps of Engineers.

One small known dam with big facts, presented here is the Pineview Dam. Pineview Dam is located in the Ogden River Canyon, 7 miles (11 km) east of Ogden, Utah in the US. At present the Pineview Reservoir is capable of irrigating 24,801 acres (100.37 km²) of land. This greatly has improved irrigation capacity and distribution and has helped in the cultivation of various types of crops. The reservoir also acts as a thriving fishery and recreational area located very close to Ogden and the nearby areas. Camping, boating, water-skiing and personal watercraft use, as well as trout, bass, crappie and wall-eyed pike fishing are popular activities in the recreational area. Nearly one million people visited the area in 1996.

Flood control has been estimated at nearly ten million dollars between the years of 1950 and 1999. The capacity of the dam and its ability to discharge water to up to 1,600 cubic feet (45 m³) per second into the Ogden River has proved beneficial during times of high water accumulation. The dam also provides hydroelectric power. The Pineview Reservoir is one of only three lakes in Utah that house the Tiger Muskie, a popular sterile hybrid fish. These fish have a torpedo shaped body, with vertical "tiger" stripes on the sides. It is not uncommon for a Tiger Muskie to grow from 3 to 4 feet in length and weigh as much as forty pounds. This teeming fish is a craze for the local people.

The second example that can be cited is the Pong Dam in India. This dam is located on the Beas River in Kangra district on the border of Himachal Pradesh and Punjab. The reservoir created by this dam is known as the Pongdam Lake. There is an alarming change in water levels due to the dam but that nonetheless it makes the region a strategic birding site. Over the last three decades, the reports of over 1,00,000 winged guests at this wetland, belonging to over 85 species including Bar-headed Geese, Common Pochards, Common Coots, Northern Pintails, Northern Shovelers, Common Teals, Cormorants, Shelducks, Gulls and many, many more have drawn ornithologists and bird-lovers to the shores of Pong lake. Famous for birds, this lake has in fact turned into a bird sanctuary. As per the records of the Himachal Pradesh Forest Department, the partial waterfowl count in the late 1980s was about 20,000 birds a day which increased seven times by late 1990 onwards.

The Pongdam reservoir is additionally one of the leading fish habitats in the Himalayan states, and provides vital home to a host of mammals including leopards, sambar, wild pigs, barking deer and oriental small-clawed otters.

Another example is the Kingsley Dam, located on the eastern side of Lake McConaughy in central Keith County, Nebraska, which is the second largest hydraulic fill dam in the world. This dam provides the habitat for 280 species of birds.

Next in contention is the Pagladia dam of Assam. It is situated on the River Pagladia in Nalbari district for the purpose of hydro-electricity, Irrigation and flood control. This dam irrigates 34630 hectares (much more than the Pineview dam mentioned above) of land on the right bank of the Pagladia River. The total cost of the project was Rs.1069.4 Cr and the return is Rs. 127.05 Cr per annum from irrigation, flood control and electricity generation. Regarding environmental effects there are no records of affect on forestry, flora, fauna or wild life.

Having cited some examples out of very many, one has to think twice before criticizing that dams are environmentally harmful. They may not be. The answer lies in the US where there are multitudes of dams. The prime factor for consideration is the dam safety aspect. For the purpose US has set up the agency called FEMA.

According to Senior Officials of Federal Emergency Management Association (FEMA) "our best weapon in preventing damage from dam failures is planning. Emergency Action Plans developed by dam owners are essential. These life-saving documents identify potential emergency conditions and lay out exactly what will be done to save lives and property if they arise. FEMA's leadership initiatives in dam safety are providing the opportunity to more and fully demonstrate how a modest investment in dam safety will actively mitigate the effects of dam failures and incidents."

Furthermore in the last 30 years the US Federal Government has been working to protect Americans from dam failure through the National Dam Safety Program (NDSP). The NDSP, which is led by FEMA, is a partnership of the states, federal agencies, and other stakeholders to encourage individual and community responsibility for dam safety.

The NDSP, which was formally established by the Water Resources and Development Act of 1996, includes:

· Grant Assistance to the States

Provides vital support for the improvement of the state dam safety programs that regulate most of the 79,500 dams in the United States.

* Dam Safety Research, A program of technical and archival research.

* Dam Safety Training For state dam safety staff and inspectors.

"Community responsibility" is the key. This aspect is being highlighted so that people in our country can cope up with upcoming dams. Such recourse is the basic requirement for us. The success of any protest against dams is to be readily prepared for the onslaught of any natural threat.

And when you visit the famous Vrindavan Gardens in Karnataka, don't forget that this picturesque garden is situated on the Krishna Raja Sagara Dam which is built across the river Kaveri. Here too, in the terraced garden you will find not only a wide variety of flowers but also rich fruit orchards as well. So how can you say that a dam harms the environment?

Today when we may take up the controversial dam topic in the light of our homes, aren't we lighting our homes with dam electricity? Secondly what about the water we are drinking? Hope it is not through the courtesy of a dam somewhere? You are using a tube well. For all you know, the big fact is that the ground water driven up your tube well may be the act of a small or little known dam!

DAMMING THE CONGO

Published on December 19th, 2013 by Environmental News Network

<http://blog.cleantechies.com/2013/12/19/damming-the-congo/>

Posted in Africa, Water Power

The Democratic Republic of Congo (DRC) is looking to capture the more of powers of the Congo River in what will be the largest and most powerful hydroelectric dam in the world. The Grand Inga Hydropower Project will produce up to 40,000 megawatts of electricity, doubling current dam champion, Three Gorges in China. The dam will generate more than one third of the electricity currently produced in Africa as it captures the force of the 1.5 million cubic feet per second cascading into the Atlantic Ocean. Electricity from the project will benefit industries, manufacturing and urban consumers in South Africa though, not the local population. The Bunda Valley will be flooded to create a reservoir for the project forcing the relocation of several farming communities. Rudo Sanyanga, the Africa Program Director of International Rivers anticipates the general population will incur additional burdens and be impoverished as a result. Funding is through the World Bank, African Development Bank, European Investment Bank, French Development Agency and Development Bank of South Africa. Initial estimates for the project, which begins October 2015, are \$80 billion U.S. dollars. "The World Bank has announced plans to increase its support for large dams particularly in Africa, and is using the Inga 3 Project for a poster child of this approach," said Peter Bosshard, the International Relations Policy Director at International Rivers. "Decentralized renewable energy projects would be more effective at expanding access to electricity for the poor and protect the environment." The Inga 3 dam will be located on the world's largest waterfall by volume, Inga Falls. Inga Falls is 50 kilometers upstream of the Conga River's mouth and already incorporates the Inga 1 (351 MW) and Inga 2 (1,424 MW) hydroelectric facilities, commissioned in 1972 and 1982,

respectively. The DRC, still in debt from these projects, currently operates at only 50% due to lack of maintenance. Inga 1 and 2 currently divert approximately 30 percent of river flow; the addition of the Grand Inga project will increase that by as much as two-thirds. "The extent of environmental impacts will only be known after and if a detailed Environmental Impact assessment is carried out," said Sanyanga. "Based on our own assessments we are certain that the Congo Plume will be affected and that the diversion of flow will affect the aquatic biodiversity along the Inga Falls. In addition the flooding of the Bundu Valley as well as the clearing of forest for the grid transmission will cause huge losses in terrestrial biodiversity." Article by Robin Blackstone, appearing courtesy Environmental News Network. - See more at:
<http://blog.cleantechies.com/2013/12/19/damming-the-congo/#sthash.XH0h5VxT.dpuf>

India

Bountiful rains improve water storage in dams

<http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/bountiful-rains-improve-water-storage-in-dams/article5416882.ece>

Cuddalore district recorded good rainfall on Monday, way above the average received generally during this time of the year. In a single day, the district received an aggregate of 205.40 mm of rainfall against the day's average of 9.75 mm.

The sporadic rain raised the water level in the dams and tanks in the district.

Melmathur experienced the maximum rainfall of 34 mm. The water level in the Lower Anicut stood at 7.7 ft against the full level of 9 ft. From the anicut 523 cusecs of water was being released through the Vadavar, 201 cusecs through the North Rajan Canal and 193 cusecs through the South Rajan Canal.

In the Veeranam tank the water level stood at 45.6 ft against the maximum level of 47.5 ft. The inflow into the tank was in the order of 300 cusecs and outflow 268 cusecs, including 194 cusecs through the Veeranam North End Surplus Sluice (VNESS) and 74 cusecs to Chennai.

With the present water level of 5.5 ft (maximum 5.5 ft) the Wallajah lake was full to the brim.

The storage level at Perumal Eri was 6.4 ft against the full level of 6.5 ft, and Sethiathope anicut fell short of just one foot to reach the maximum level of 7 feet.

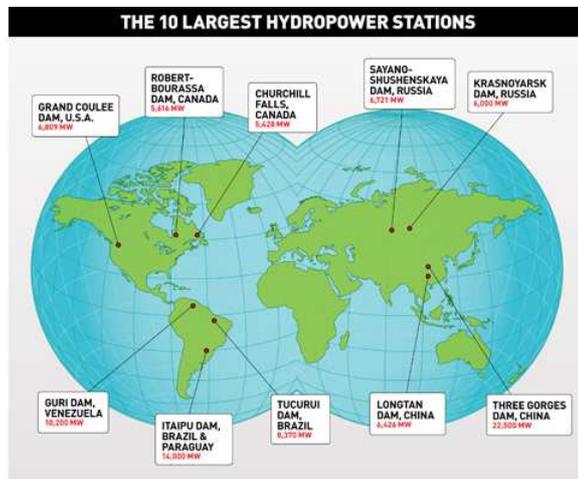
The Wellington reservoir had the water level of 14.75 ft (maximum 27.4 ft), Gomukhi dam – 41.70 ft (46 ft) and Manimutharu dam – 20.90 ft (36 ft).

The 10 Largest-Capacity Hydropower Plants

01/02/2014

By Scott Lewis

http://enr.construction.com/infrastructure/water_dams/2014/0102-10-largestcapacity-hydropower-plants.asp



Hydropower produces 16% of the world's electricity and plays a strong role in satisfying the national energy needs of certain countries. Paraguay produces all of its electricity from hydropower, while exporting most of its excess supply to neighboring Brazil and Argentina. Albania, Bhutan and Lesotho also depend exclusively on hydroelectricity. Norway produces more than 98% of its electricity from hydropower, Brazil draws upon it for 85%, Iceland for 80%, Venezuela for 69%, Colombia for 65% and Canada for 61%. Austria (60%), Switzerland (56%) and New Zealand (53%) are other countries that generate the majority of their electricity from hydro sources. (The U.S. draws only 6% of its electricity from hydropower.)

In overall terms, China is the largest hydroelectricity producer, generating 721 terrawatt-hours (TWh) in 2010, which represented 17% of its electricity consumed. Canada ranks second, at 369 TWh in 2009, and Brazil is third, at 363 TWh, with the U.S. fourth at 250 TWh and Russia fifth at 167 TWh.

But hydropower is a resource governed by geographic restraints. "You need water and a change in elevation. That cuts out a lot of the world right away," says Chris Bergesen, Editorial Director, UDI Products, Platts, a unit of McGraw Hill Financial, of which ENR is a part.

"Hydropower development is taking place disproportionately in developing countries, because the U.S., Western Europe and Japan are built out, essentially," says Bergesen. The six nations that are advancing hydropower projects most ambitiously are China (82,492 MW worth of projects currently in the pipeline), Brazil (20,562 MW), India (15,328), Turkey (7,904 MW), Ethiopia (6,874 MW) and Pakistan (6,143 MW), according to Platts UDI World Electric Power Plants Data Base.

The largest-capacity hydropower plant being built in the world is the Xiluodu Dam, on the Jinsha River (the upper Yangtze River) in southwest China's Yunnan Province. The 285-m-tall, 700-m-long concrete arch dam will contain eighteen 770-MW turbines, for a total capacity of 13,860 MW. The first turbine was commissioned in July 2013, with the remainder expected to go online later in 2014.

Brazil has one of the most robust dam-building programs of any country. The largest dam currently under construction there, Belo Monte, on the Xingu River in northeastern Brazil, is a complex of three dams, numerous dikes and a set of canals that will supply water to two power stations. The planned capacity of 11,233 MW will rank it as the third or fourth largest-capacity hydropower plant in the world when it is completed. It is being built by the Belo Monte Construction Consortium, at an estimated cost of \$14.4 billion. CCBM is led by contractor Andrade Gutierrez, along with Odebrecht and Camargo Corea, and seven other smaller contractors. Construction began in 2011, but has been halted several times by courts reacting to environmental lawsuits and legal actions by indigenous peoples. The current workforce is 28,000. Most of its turbines are expected to begin producing power in 2015.

The Jirau Dam is taking shape on the Madeira River, in western Brazil near the border of Bolivia. It is a 1,500-m-long, 63-m-high rock-fill dam with an asphalt-concrete core, which will produce 3,750 MW. It will supply electricity to São Paulo, 1,400 miles away. Camargo Correa is the primary contractor, with 20,000 workers currently engaged. It is expected to be completed in 2015, at a cost of \$8 billion.

Ethiopia's current dam-building effort will lift its generating capacity from approximately 2,000 MW at present to 10,000 MW within the next three to five years.

The Gilgel Gibe III Dam, under construction on the Omo River by Salini Costruttori of Italy, will be the largest hydroelectric plant in Africa when completed, with a capacity of 1,870 MW. It is 75% finished, with no completion date announced.

The Grand Ethiopian Renaissance Dam, currently being built on the Blue Nile near the Sudan border, also by Salini Costruttori, will be the largest hydropower plant in Africa upon its completion in 2017, leapfrogging over Gilgel Gibe III. A roller-compacted concrete dam measuring 170 m tall and 1,800 m long, it will have powerhouses on each side of the spillway and will produce 6,000 MW. Much of the power generated by Ethiopia's new dams is likely to be sold to its neighbors, including Kenya, Sudan, Djibouti and possibly Egypt. Its construction cost is \$4.8 billion.

The Grand Ethiopian Renaissance Dam has engendered political tensions with downstream neighbors Sudan and Egypt. Egypt in particular fears that a temporary reduction of water flow in the Nile during the filling of the dam may hurt its farmers. Water loss via evaporation from the dam's reservoir is another concern. It may also permanently lower the water level in Lake Nasser, thereby reducing the generating capacity of Egypt's Aswan Dam. Egypt, Ethiopia and Sudan have established the International Panel of Experts to study the impact of the dam and make recommendations for cooperative approaches.

The benefits of large dams are well known: irrigation, flood control, navigation improvements and power production. But they also engender a wide range of environmental consequences. They degrade water quality and block sediment flowing downstream, harming ecosystems and agriculture. They block fish migration. They flood fertile river-valley farmland and sometimes displace large numbers of residents. In tropical regions shallow reservoirs submerge large quantities of plant life, which generates large volumes of methane, a potent greenhouse gas. "Tucurui Dam [in the Amazon basin], by flooding a rainforest, triggered a new scientific discipline," says Bergesen.

West Africa hopes new hydropower dams will cut poverty, climate risk

<http://www.trust.org/item/20131217125940-0yqo5/?source=hptop>

Source: Thomson Reuters Foundation - Tue, 17 Dec 2013 12:59 PM



Author: Elias Ntungwe Ngalame More news from our correspondents

YAOUNDE, Cameroon (Thomson Reuters Foundation) – West African states in the Niger River Basin are seeking to tackle climate risks and reduce poverty by

constructing three hydropower dams in the next five years.

In late November, the Council of Ministers of the Niger Basin Authority (NBA), meeting in Cameroon's capital Yaounde, endorsed an environmental and climate action plan for sustainable management of the scenic basin and its rich natural resources, which have come under threat from climate change.

The projects include a 102 megawatt (MW) hydropower dam at Fomi in Guinea, a 25 MW hydropower plant in Toussa, Mali, and the 565 MW Kandadji dam in Niger. These aim to boost hydro-electricity and irrigation, reduce desertification and flooding, and improve economic activities across the region.

“The West African region is facing urgent problems of food security, rural poverty and climate change that demand answers in the form of investment and infrastructure. We need to give a push to these three multi-purpose hydropower dam projects as a sustainable solution that involves the region's largest river,” NBA executive secretary Collins Ihekire said in a statement at the Yaounde gathering.

The NBA is the coordinating body for the 4,200 km-long (2,600-mile) Niger River, bringing together the governments of Benin, Burkina Faso, Cameroon, Chad, Côte d'Ivoire, Guinea, Mali, Niger and Nigeria.

The NBA also agreed to rehabilitate three hydropower plants at Kainji, Jebda and Lagdo, as well as multiple run-of-river hydropower stations, optimise water storage, set up irrigation schemes for an additional 1 million hectares (2.5 million hectares) of land, and increase hydropower production to 1,000 gigawatt hours per day.

“Integrating future climate change adaptation and mitigation into our development action plan will enable...sustainable management of our water resources, to better the livelihood of the over 106 million population in the area,” said Emmanuel Nganou Djoumesi, Cameroon's minister of the economy, planning and regional development, at the closing of the Yaounde meeting.

BOOST TO FOOD SECURITY

The decision to reinforce climate and environmental protection in the basin comes after a series of World Bank-funded studies to assess climate risk in the area.

The research concluded that “the impacts of climate change on minimum water flow in the river are potentially severe”, according to an NBA report. “Rain-fed agriculture in the area is vulnerable to climate change. Crop yields have reduced by more than 15 percent in the last five years due to increase in temperature by more than 2 degrees.”

This has undermined food production, especially in the Sahel region, which includes NBA member states like Cameroon, Chad, Niger and Nigeria, which have high rates of child malnutrition, the report said.

As well as generating electricity for surrounding areas, the new dams will also boost production of crops like rice and vegetables, and alleviate the impacts of climate change, authorities say.

“The Fomi multi-purpose dam in Guinea will not only provide hydroelectric power, but its reservoir will create opportunities for fishing. Areas around the reservoir will also be suitable for raising cattle and other types of livestock as well as for agriculture. The new body of water will also provide a habitat for aquatic birds,” the NBA report said.

The \$384 million project will enable regulation of water levels in the Niger River, benefiting countries downstream by making irrigation possible during the dry season, the NBA says.

The Taoussa dam in Mali - estimated to cost \$38 million - is slated to generate electricity for Burkina Faso and Niger, and could eventually provide irrigation for nearly 140,000 hectares.

The largest of the three dams in terms of power generated, Kandadji in Niger, will cost around \$236 million.

Funding for the three dams is being provided primarily by the World Bank and the African Development Bank.

WHO BENEFITS?

But environmental experts say their planned construction raises concerns.

Samuel Nguiffo, coordinator of the Centre for the Environment and Development, a Cameroon-based nongovernmental organisation, acknowledged that Africa needs energy for its development, but said the social and environmental price of constructing big dams is often too high.

“People have to be displaced, communities along the project area have to sacrifice their land and livelihood for little or no benefits, and the natural environment (is) destroyed,” he said, citing a report by the International Union for Conservation of Nature that said Kandadji dam would displace some 38,000 people along the river.

Inequitable distribution of benefits can also sometimes spark conflicts that call into question the overall value of many dams in meeting water and energy needs, he added.

In 2012, Wetlands International, a Netherlands-based NGO, said the huge reservoir required for the Fomi Dam would need to be filled during the wet season, lowering the peak of the river water, and considerably shrinking the size of the seasonally inundated area of Mali’s Inner Niger Delta.

Plans to expand upstream irrigation schemes for rice, sugar cane and cotton production would also exceed river capacity from March to May, posing serious downstream problems, it said, urging governments in the region to consider alternative energy sources.

“Sustainable energy options, such as solar power may be better long-term options to invest in than hydropower. The revenues of hydropower dams in this dry area of Africa are rather marginal but the corresponding impacts of reduced water availability are huge,” Wetlands International said on the sidelines of the 2012 World Water Forum.

This week, civil society organisations called on the World Bank – which is asking donor governments to replenish the International Development Association (IDA), its fund for the poorest countries – to stop financing large-scale dam construction.

The Bank plans to support a new generation of controversial mega-dams, including the Inga 3 Dam on the Congo River, from the IDA fund, advocacy group International Rivers said in a statement.

“Poor rural communities will pay the price for a new generation of destructive mega-dams, but will be the last to benefit from the electricity they generate,” said

Peter Bosshard, policy director for International Rivers.

Elias Ntungwe Ngalame is an award-winning environmental writer with Cameroon's Eden Group of newspapers.

Algeria

GRANDS TRANSFERTS D'EAU EN MÉDITERRANÉE QUAND L'EXPERIENCE DE L'ALGERIE INSPIRE

L'expérience algérienne en matière de transferts d'eau semble inspirer les pays du pourtour méditerranéen, eux qui considèrent l'Algérie comme étant «modeste» quand il s'agit de faire entendre sa voix en la matière.

Mohamed Kebci - Alger (Le Soir)

Il n'est un secret pour personne, l'un des défis majeurs, sinon le défi majeur de ce nouveau siècle, est incontestablement celui de l'eau. Une problématique qui se pose avec davantage d'acuité dans le pourtour méditerranéen, une région semi-aride dont les populations doivent aussi faire face à une extrême irrégulière pluviométrie. Et pas que ces aléas puisque les pays de la région butent sur une disparité spatiale en termes de disponibilités hydriques puisqu'on peut trouver en abondance de l'eau dans une région où on en a moins ou pas du tout besoin et inversement.

D'où le recours depuis le temps au transfert de l'eau d'une région où il y en a en grande quantité dans d'autres où il y en a peu ou du tout pas. Une option, un choix de ces transferts qui fait l'objet, depuis hier et durant deux jours, d'un atelier régional à Alger. Une occasion pour l'Algérie, comme le signifiera notre ministre des Ressources en eau, «de densifier et de diversifier les relations entre les différents acteurs de l'eau de la région». Elle constitue aussi, selon Hocine Necib, «un point de départ pour la mise en place d'une plate-forme Algérie de dialogue et d'échanges dans le domaine de l'eau entre les pays méditerranéens».

Et parce que les enjeux, que la question de l'eau englobe dans un contexte de demande de plus en plus croissante, dictent la mobilisation des efforts de tous les pays du monde pour relever les défis partagés d'accès à l'eau pour tous, le secteur a été élevé ces dernières années au rang des grandes priorités nationales. Une décision politique traduite dans les faits par le lancement de grands chantiers de l'eau, notamment les infrastructures de mobilisation des ressources en eaux superficielles et souterraines et de transfert à même de surmonter les conséquences de la variabilité pluviométrique et la diminution des réserves accentuées par le changement climatique. Ceci en sus du recours aux eaux non conventionnelles via un vaste programme de dessalement d'eau de mer pour sécuriser l'approvisionnement en eau potable des agglomérations et localités côtières et des régions intérieures du pays.

Pour le ministre, si l'Algérie a entamé la réalisation des grands transferts d'eau, c'est que ces derniers constituent une «solution incontournable» pour, sebn lui, «assurer une équité territoriale dans l'accès à l'eau tant pour les populations que pour le développement des activités agricoles, industrielles et touristiques». Une solution qui ne doit pas être, cependant, «exclusive» ou «contraire aux autres», pour la présidente de l'Institut méditerranéen de l'eau, Millagros Couchoud, pour qui toutes les solutions se doivent d'être enclenchées en même temps.

Pour sa part, le secrétaire général de la commission internationale des grands barrages soutiendra que le recours aux transferts remonte à loin dans le temps avec, cependant, les plus grands transferts enregistrés au 20^e siècle, citant ceux réalisés entre les Etats-Unis et le Canada, l'Inde et le Pakistan ou encore le Lesotho et l'Afrique du Sud et ceux en Europe de l'Est.

Pour Michel De Vivo, les 50 000 grands barrages et le million d'autres petits barrages à travers le monde suffisent à peine à satisfaire les besoins de la population planétaire à hauteur de seulement 30%.

Et de se projeter sur 2050 où la Terre atteindra les 9 milliards d'habitants dont 50% concentrés dans les grandes villes avec un niveau de vie qui s'améliorera, d'où une consommation en eau et en énergie qui vont doubler, sans compter la contrainte majeure du changement climatique. Il faudra d'ores et déjà accroître les capacités de stockage, estimera-t-il.

Mais ces projets des transferts d'eau d'une région à une autre, tout comme bien d'autres projets, n'ont pas que des adeptes. Et à ce sujet, le président honoraire du conseil mondial de l'eau ira jusqu'à parler de lobbies qui font tout pour «ne rien faire». Et Loic Fauchon de plaider pour des projets «socialement tolérables, écologiquement acceptables et politiquement compatibles». Des transferts «équitables, durables et intelligents au sens le plus profond du terme», ajoutera-t-il, estimant qu'il faudra «maîtriser les besoins, les réguler». Et dans ce domaine, Fauchon affirmera que l'Algérie «montre la voie de manière assez exceptionnelle» mais demeure, néanmoins, «trop modeste quand il s'agit de «faire entendre sa voix».

M. K.
