

# WORLD RIVERS

# REVIEW

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## Africa For Sale

### Land and Water Grabs Spell Disaster for Rural People and Rivers

By Steve Fisher

The Horn of Africa has been in the headlines for months now as famine and starvation spread across the drought-ravaged region. Yet this troubled province is simultaneously seeing a dramatic transfer of arable lands to foreign investors intent on exporting staples and biofuels.

The Horn is only the most shocking example of a growing and controversial phenomenon known as “land grabbing.” The World Bank estimates that, in 2009 alone, nearly 60 million hectares of land were purchased or leased in developing nations all over the world – an area the size of France.

An exhaustive report on land transfers by the California-based Oakland Institute (OI) reveals that Japan has secured 100,000 hectares in Brazil to plant soybeans, Indonesia allocated 10,000 hectares to a South Korean company for maize, and the United Arab Emirates is leasing 400,000 hectares in the Philippines to plant vegetables and other crops. Pakistan, Laos, Russia, and Liberia are all in various stages of accepting similar foreign investments. The epicenter, though, is in Africa, where an estimated 70% of land trans-



Millions in Ethiopia have been affected by an ongoing drought, yet the government is practically giving away arable land to outside investors. Photo: Kimberly Flowers/USAID

fers to foreign investors have taken place. The phenomenon has major implications for another scarce resource: water.

Anuradha Mittal, founder of the Oakland Institute, coordinated a team of OI staff, researchers from several continents, and partner groups in Africa to get to the heart of the troubling trend. The group's groundbreaking report on African land grabs, which took more than two years to complete, is now garnering international media attention. Says Mittal, “The land grab phenomenon is being done in the name of modernizing agriculture and expanding African economies, but it cuts out the core natural resources that sup-

port African livelihoods for the majority – land and water. This huge transfer of natural wealth to outside investors is eroding food security, water security and cultural integrity for local people.”

Governments in countries such as Ethiopia, Mozambique, Mali, Sierra Leone and Sudan are successfully attracting agricultural investment, with particular interest in the sediment-rich valleys through which the continent's most vital rivers flow. All told, the OI report explains, approximately 50 million hectares have already been leased to foreign entities in Africa, with a total of 20 countries in various stages of investment.

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## World Rivers Review

Volume 26, Number 3  
ISSN Number 0890 211

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# Commentary

Every river has its people, and a river's people all have stories to tell.

*World Rivers Review* has collected 25 years worth of such stories. As the new executive director of International Rivers, I'm catching up on the distinguished history of our movement as told in the back-issues of this publication. I'm also keenly interested on where the broader movement for economic justice, human rights and living rivers is headed and how to best leverage the unique and effective niche in which our organization continues to flourish.

International Rivers has regional staff based in Brazil, Thailand, India and southern Africa and each summer we gather for our annual convergence in our California office. This is a time when we roll up our sleeves for the very real work of implementing our newly adopted 5-year Strategic Plan, a roadmap for remaining nimble, effective and pro-active at a time of unprecedented threat to the world's last, great rivers and the communities that depend upon them. As a new member of the team, our convergence has given me an opportunity to hear the stories of struggle and success from watersheds around the world. In speaking with our regional campaigners I'm reminded that the fight for healthy rivers is "ground zero" in the movement to safeguard the Earth's biological diversity. More than any other type of ecosystem on the planet, freshwater environments are experiencing the greatest loss of biodiversity during this era of accelerated species extinction. By working to ensure that our rivers stay connected – to their headwaters, to their fertile floodplains, to their delta wetlands – we're protecting biodiversity hotspots and world heritage rivers in places such as the Amazon, Zambezi and Nu (Salween) river basins.

We advocate for healthy rivers to compel sustainable energy planning in a changing climate. In Africa, I'm learning about drought-induced energy shortages hitting cities like Nairobi, Accra, Addis and others. A dam-building boom in Africa has left the continent too "hydropower dependent," and climate change threatens to worsen the situation. Despite the obvious benefits of diversifying energy production with truly sustainable sources such as solar and wind, African governments are instead scheming for more dams on the Zambezi, the Nile and Omo rivers. Each has grave consequences for the people of these rivers, and all would squander billions of dollars in the dead-end technology of dammed rivers.

I'm being reminded that the fight for healthy rivers is the struggle for food security. From our Southeast Asia office, International Rivers continues to coordinate the Save the Mekong Coalition, organizing activists and educating decision-makers in four countries about the threat posed by the Xayaburi Dam in Laos and other dams proposed for the Mekong. While the illegal construction of this first dam proposed for the mainstem of the lower Mekong begins, the protein source for 60 million people who rely on the fisheries of the Mekong River and delta hangs in the balance.

In my first weeks on the job, I'm also sharing my experience as an advocate for healthy rivers in California, a state with the largest, and arguably most complex, publicly funded water infrastructure program in the world. I was raised in one of the more notorious dam-affected communities in the US, and my earliest experiences have been influenced by both the historical legacy of early industrial-scale river destruction and the local community's ongoing fight against more recently proposed hydropower dams on the South Yuba River.

I'm joining International Rivers at a remarkable time in the organization's long history. After 25 years, we've developed impressive expertise: we work at the policy nexus of climate, energy and water, we "follow the money" and engage in the complexities of international financial institutions, and we continue to hold the most comprehensive understanding of the cascading social, economic and ecological impacts of damming great rivers. Coupled with our gritty campaigning and big-tent approach to movement-building, International Rivers is uniquely positioned to contribute to truly sustainable solutions to protecting biodiversity, providing energy access to rural communities, supporting democracy and promoting food security.

In the coming months I'll begin field visits to our regional offices and I'll hear stories directly from dam-affected communities fighting for healthy rivers, despite enormous pressure and intimidation from dam profiteers. I look forward to adding my voice and perspective to help amplify these stories, both in these pages of *World Rivers Review* and through my on-line blog at [internationalrivers.org](http://internationalrivers.org).

Jason Rainey



Printed on 55% recycled, 30% post-consumer recycled waste paper with vegetable-based inks

# MAKING WAVES

## In the News

“The United Nations has added its voice to the barrage of criticism on Ethiopia's massive Gibe III hydropower project, calling for work to be suspended until the negative impacts of the dam have been determined... International Rivers, a US-based campaign group, said the project may be one of Africa's worst development disasters because of the harm it may cause people in the south of the Horn of Africa country.”

“UN calls for suspension of giant Ethiopian hydropower dam,  
Daily Nation (Kenya), July 28, 2011

## Welcome, Rudo and Nichola! We're happy to welcome two new regional staff in Africa and Southeast Asia.



International Rivers' Africa program is now under the capable guidance of Rudo Sanyanga, who will be working from Southern Africa. Rudo is an expert on the Zambezi River. She has done environmental analysis of Kariba Dam and the proposed Batoka Gorge Dam, as well as planning for environmental flows for the Zambezi Basin. She holds a Ph.D. in Aquatic Systems Ecology and a Master's in Applied Hydrobiology. We're thrilled to have her!

... and in the Mekong:

Nichola Hungerford joins International Rivers as the new Lao Campaigner. An Australian, Nichola's extensive experience working on environmental campaigns and development work for more than 20 years will help advance our work to protect the tributaries of the Mekong River inside Laos. Nichola will be based in Bangkok, Thailand and will focus on supporting a growing civil society movement in Laos concerned with hydropower development, while monitoring the implementation of mitigation and compensation measures of existing projects. We are very excited to have Nichola on the team and look forward to the ideas, enthusiasm, and energy she will bring.



The big jump into the Tigris.

## “Big Jump” to Protest Ilisu Dam

On a warm July day, dozens of people organized a “big jump” into the Tigris River in Hasankeyf, a historic city in the Kurdish Southeast in Turkey. The ancient town is threatened by the Ilisu Dam.

Activists from several organizations joined local people for the event. The Big Jump is a Europe-wide day of action that raises awareness on the importance of rivers for the ecology and society ([www.rivernet.org/bigjump/](http://www.rivernet.org/bigjump/)).

The Ilisu Dam would affect up to 80,000 people, and flood the 12,000-year-old city of Hasankeyf. Although the project has been stopped two times in recent years, the Turkish government started construction last year.

## Global protests on Belo Monte

A week of protests against Belo Monte Dam brought the struggle against the huge Amazon dam to cities around the world in August. Construction has already begun, bringing urgency to the actions. Thousands organized protests in front of Brazilian embassies and consulates in at least 17 countries, and in the streets of major Brazilian cities.

Sao Paulo, Brazil's biggest city, staged the largest protest. At least 800 people attended, including members of the indigenous groups that will be affected by the project.

Supporters took to the streets in London, Istanbul, Berlin, Paris, Brasilia, Mexico and elsewhere.

International Rivers and Amazon Watch joined Brazilian activists at the Brazilian consulate in San Francisco and Washington, D.C.

The campaign against this destructive dam continues.  
Learn more: [www.internationalrivers.org/en/node/5236](http://www.internationalrivers.org/en/node/5236)

# Nepal Dam's Future Uncertain

By Ratan Bhandari

The Nepal government revoked the license of the West Seti hydropower dam project in July. The project had struggled for 16 years to find funding. It is the second largest dam in Nepal to be cancelled, after the Arun 3 hydroelectric project, which was jettisoned after the World Bank withdrew from project financing in 1995. The combination of local and international pressure and strong arguments against the project from legal, human rights, environmental and economic perspectives were key to the success of the West Seti campaign.

The West Seti Dam is a 750 MW project proposed for the Seti River in western Nepal. The project license was awarded in 1994 to the Australian multinational company, Snowy Mountains Engineering Corporation (SMEC). SMEC reportedly has invested over \$31 million in the project over the past decade. Under the terms of the project, SMEC would be allowed to export 90% of the power to India even though more than 60% of the Nepali population has no electric power and those who do face up to 18 hours of blackouts daily in the dry months.

The project was estimated to cost US\$1.6 billion. At one time both the Asian Development Bank (ADB) together with the China National Machinery and Export Corporation (CMEC) and China Exim Bank were involved as co-financiers, but all of them pulled out. Nepal was to receive 10% of the project's electricity along with a nominal royalty from SMEC's profit from the project.

## Project flaws

The campaign to stop the project raised several issues of concern. Local issues concerned the effects on the dam-affected population. The people of four isolated rural districts (Bajhang, Baitadi, Doti and Dadeldhura) were unhappy about the lack of disclosure of project information, which was made available only in English. The only materials available in Nepali were a propaganda booklet and a misleading summary of the environmental impacts. Flawed public hearings were another major concern. Inadequate environmental impact assessment and poor mitigation plans were the third factor. The relocation of some 30,000 people from the highlands to the plains of the Terai in Kailali, the heartland of the indigenous Tharu people, was another major issue. The Tharu people were vehemently opposed to the project's resettlement plan.

Moreover, the project did not envisage training and employment for the local people, nor was there any provision for the compensation and resettlement of landless oustees or those with no formal entitlements to their traditionally owned land, nor for those dependent on fishing. Making electricity available locally before exporting it to India was another demand. None of these demands were properly addressed, and the few measures adopted by ADB and SMEC were grossly inadequate and ornamental.

At the national level, there were serious concerns about the project's constitutional validity. The project bypassed the constitutional provision requiring parliamentary ratification of any project or agreement in which resources or its byproducts were to be divided between Nepal and India. In addition to the power exports, the project benefited India with free stored water during the winter, enabling the irrigation of some 600,000 additional hectares of land in Uttar Pradesh.

## Wide support network

The successful activist campaign had local, national and international dimensions. Notably, the campaign benefited from the leadership of Nepali human rights lawyer Gopal Siwakoti 'Chintan', who was also the main force behind the cancellation of the Arun 3 Dam by



The Seti River has been targeted for a major dam project for 16 years. Photo: WAFED

the World Bank in 1995. The strong pro-people positions taken by the UCPN-Maoist, the main elected force in the country, and parliamentary Public Account Committee were also instrumental in the success of the campaign against the project. Inputs made by various water experts and the media were equally important. Kathmandu-based Water and Energy Users' Federation-Nepal (WAFED) was the main group leading and coordinating this campaign.

Additionally, the international campaign involved Japanese associates and other well-wishers in our struggle. The Tokyo-based Japan Center for Sustainable Environment and Society (JACSES) played a very important role, mobilizing public opinion within Japan and putting pressure on the ADB and Japanese Ministry of Finance. JACSES also made several field visits to the project site, which enabled them to prepare ground-reality reports for effective campaigning. Likewise, we got a lot of support from the NGO Forum on ADB, International

*Continued opposite*

# World Heritage Sites Endangered by Dams

By Katy Yan

**M**ore than 900 of the world's most amazing natural and manmade wonders have been declared World Heritage Sites by UNESCO (the UN Educational, Scientific and Cultural Organization). The list includes both well-known landmarks – the Taj Mahal, Grand Canyon and Galapagos Islands – as well as less well-known but equally valuable places. These are places of “outstanding cultural or natural importance to the common heritage of humanity,” according to UNESCO. They are, in a word, irreplaceable.

Few of these sites have been free from humanity's heavy footprint – in fact, 35 of them are on the UNESCO List of World Heritage in Danger. Recent research by International Rivers revealed that dozens of World Heritage Sites are also threatened by large dams.

In past years, activists have used World Heritage designations to protect some of the planet's most culturally and biologically diverse places from dam development. In 2004, for instance, the listing of the Three Parallel Rivers in China coincided with plans to build a 13-dam cascade on the as yet undammed Nu River. Local and international activists were able to use its World Heritage status to persuade Chinese Premier Wen Jiabao to suspend the dam plans.

Among the sites that were discussed at this year's annual meeting of the World Heritage Committee were several places that dam activists have been fighting for years to protect. These include Three Parallel Rivers (which is on the agenda again due to revived dam plans), La Amistad in Panama and Costa Rica, Río Plátano Biosphere Preserve in Honduras, and Lake Turkana in Kenya.



**Lake Turkana – the world's largest desert lake – is threatened by Gibe III Dam, now under construction in Ethiopia. The World Heritage Committee has recommended the dam be halted. Photo: Christophe Cerisier**

## “Halt Gibe III”

Significantly, the committee recommended a halt to a dam that would affect Kenya's Lake Turkana, the world's largest desert lake. Discoveries of fossils in the surrounding region have allowed scholars to reconstruct the history of animal and human species over the past two million years.

The lake's lifeline, the Omo River, is under threat by the massive Gibe III Dam now being built upstream in Ethiopia. The dam has been the target of a major international

campaign to protect the lake and the indigenous communities who depend on it. In part thanks to the sustained efforts of the Kenyan group Friends of Lake Turkana, the World Heritage committee in June officially urged Ethiopia to immediately halt all construction on the dam. The committee will visit the region in early 2012. Then in August, members of Kenya's Parliament passed a motion calling for construction of the dam to be stopped until an independent assessment and full consultation process had been undertaken.

More generally, in a report to the Committee, the World Heritage Centre and the World Conservation Union (IUCN) proposed that “all major dams affecting World Heritage properties ... should undergo thorough environmental and social impact assessments in line with the international best practice principles, comply with the World Commission on Dams (WCD) guidelines regarding options assessment, public participation, environmental flows, compliance, and benefit sharing, and be submitted to the World Heritage Committee for review and consideration prior to granting of approval.” ●

*More information: [www.internationalrivers.org/node/6607](http://www.internationalrivers.org/node/6607)*

## Nepal *continued from page 4*

Rivers, the Amsterdam-based Both ENDS and the Environmental Defense Fund. Various groups and friends in Australia also helped exert pressure on SMEC for withdrawal from the project.

It is very clear that SMEC's main failure to find funds was because it could not sell the project as being economically, socially and environmentally feasible for Nepal. The campaign managed to communicate details about these failings to all institutional levels and so blocked the company's capacity to generate funds. But ultimately there was a general institutional consensus that the project was deeply flawed, especially since it had no benefits at all for the local populace. It was clear to everyone that there was something wrong in displacing people and diverting water to India in the

name of exporting surplus electricity from a country and a region that has a big deficit in electricity.

While the popular movement has succeeded in stopping the West Seti Dam for now, such projects never disappear for good. Nepal's government is trying to revive it, and the Chinese government has expressed an interest in providing financial support. We have stopped a Chinese-funded dam at West Seti in the past, and we must remain vigilant to stop destructive projects from going forward on the river in the future. ●

*The author coordinates the Kathmandu-based Water and Energy Users' Federation-Nepal (WAFED).*

As a result, the export of food crops is increasing even as much of the continent experiences increasing food scarcity. Many communities and environmental organizations are concerned about the impact to water resources these large land deals will bring.

Land grabs are often connected with a dramatic increase in irrigation and large dams. Many are concerned that the increased diversion of water from major rivers will have severe consequences for local communities, downstream populations and the environment. Researcher Devlin Kuyek, who is working with the European group GRAIN, reports that one Saudi company, AgroGlobe, is in the process of buying nearly 700,000 hectares of irrigated land in Mali and plans to grow rice for export. The project will include irrigation canals (including one 40 km in length) and other water supply systems as part of their contract. Kuyek explains that most leases indicate that companies can use as much water as they deem necessary with very little oversight. He notes that due to a lack of an environmental assessment, it is difficult to fully comprehend the local impacts of the lack of water regulation, but that the “projects would undoubtedly have an impact.”

### Water impacts

It's not just the huge geographic scope that is of concern – these massive land transfers are also remaking the local landscape in many places. GRAIN's Kuyek explained that in the

Malibya land deal in Mali, an irrigation canal was dug directly through villages to reach the 100,000 hectares of land leased by a subsidiary company of Muammar Gadhafi. He says that graves were desecrated and houses destroyed to make way for the canal that is “200 meters wide in some places – it's almost a river in and of itself.” Kuyek said many villagers were often not aware of the evictions until a company representative arrived to mark buildings slated for removal. Bulldozers arrive, often razing entire villages to make way for industrial-scale agribusinesses.

Groups are also looking into the broader ecological implications of the land deals. Says GRAIN researcher Henk Hobbelink, “On the Nile River alone, we know of a million hectares of new land deals in the Ethiopian Gambela region, over three million hectares of new land deals across the border in Sudan, and many other Nile countries offering land for sale. All this land will be put under irrigation. What are the ecological implications from this massive increase of water use for the Nile? We are concerned about an increase in salinization of farmland in the Nile Delta and further upstream.” The accumulation of salts in soil that are heavily irrigated is already a huge problem in the Nile Delta, and is considered a major threat to food production in Egypt.

Referring to land deals in Ethiopia's South Omo valley, OI policy director Frederic Mousseau said these large land deals benefit

investors and business interests who have other options for where to put their money, but those who stand to lose from the projects are people “who rely on the waters of the Lower Omo River and Lake Turkana, in both Ethiopia and Kenya.” In all, Mousseau says that 500,000 agro-pastoralists stand to be affected by the land grabs in the Omo valley and Lake Turkana. “Ethiopian business interests involved in trade, transport and sugar industry will also obviously benefit from current development plans,” Mousseau notes, “One must question the motives of government officials who are driving such plans.” Mousseau confirmed reports that communities have not been informed or consulted regarding the land deals even as they are evicted from land they have farmed for generations. “We are not aware of any step taken to reasonably compensate for any loss of land, water, autonomy, and loss of tradition,” he says.

Anabela Lemos, the director of Justiça Ambiental (JA) in Mozambique, paints a similarly disturbing picture of how communities are being treated there. She explains that peasants “expect to benefit from these projects in some way” because corporations often promise “better jobs, schools, water boreholes and health services.” The reality is that these same companies “actually increase poverty by decreasing the amount of cultivable land and creating problems with water access.” In Mozambique, 2.6



**Water and food scarcity are already major problems in East Africa. Land grabbing is essentially exporting these scarce natural resources to other countries.**  
Photo: Ikal Angelei

million hectares have already transferred to investors, reports JA. More than a third of the population is chronically food-insecure, reports the World Food Programme.

While implications for communities displaced by the land deals is severe, millions of users downstream will also be dramatically affected by changes to rivers impacted by the related irrigation projects. Conservative estimates of the impacts on rivers like the Omo and the Nile rivers from expanded irrigation in Ethiopia and the Niger in Mali show a dramatic reduction of water flow to neighboring countries. In addition, the unrestricted use of pesticides or herbicides on these large industrial farms has many environmental organizations concerned about the impact on rivers and communities that depend on them.

Food security is also an obvious problem that will grow with the emphasis on export crops. For example, in Madagascar, the South Korean firm Daewoo Logistics plans to buy a 99-year lease on over a million hectares for the production of 5m tons of corn a year by 2023, and to use another 120,000 hectares for the production of palm oil, according to Friends of the Earth. This deal, estimated to cost the company about \$6bn over 25 years, is reportedly the biggest of its kind in the world. Says Nnimmo Bassey, chair of Friends of the Earth International, “The land to be parceled off to Daewoo Logistics covers arable land about half the

*Continued opposite*

size of Belgium. For a mostly arid country with three food crisis situations in five years, this is a huge challenge indeed.”

### Case Study: Ethiopia

Ethiopia is a major “water tower” in Africa. It is home to the headwaters of many major rivers, and has huge untapped hydro-power potential. In recent years the country has signed away a record amount of arable land in close proximity to those rivers. OI reports that throughout Ethiopia, “3,619,509 hectares of land have been transferred to investors, although the actual number may be higher” even as the country remains one of the largest recipients of food aid and often experiences crippling drought. At the same time, Ethiopia is in the midst of a major dam-building boom.

Felix Horne, author of the special OI report on Ethiopia, explains that the country’s trade policies make it a “red carpet for industry.” For example, he says that when it comes to water regulation, land deal agreements have “almost nothing in terms of limits on use.” The OI report explains that there was no evidence of environmental impact assessments for these land conversions, and none of the communities visited were consulted regarding the purchase of land they farmed.

The controversial Gibe III Dam now under construction on the Omo River is just one of the nation’s new dams with an agricultural-development component as well as hydropower production. According to Survival International, “The government of Ethiopia has recently announced its intention to allocate some 245,000 hectares of land in the Lower Omo Valley to the Kuraz Sugar Project. Whatever benefits this project may generate for the national economy, it spells disaster for the 90,000 indigenous people who will lose their agricultural and grazing land to the sugar cane plantations.” Many more will be affected by the dam development itself. Horne says, “These communities rely on the rivers for everything: for fish, for cultural reasons, for recreation. Pastoralist groups fear that one day their way of life will only be a story they can tell their children.”

The Gibe III project has been denounced by the United Nations and the international community as one of Africa’s most destructive dams. Yet Prime Minister Meles Zenawi says the dam will “modernize” farming in the Omo valley, and that it will bring jobs to local pastoralists. Zenawi has vehemently defended the land deals, insisting that pastoralists need to modernize their way of life in order to improve their standard of living. The administration insists that the Gibe III Dam will permanently reduce flooding, ignoring the reality that flood-recession farmers in the region depend on river flooding to replenish soils and water their crops. Pastoralists will be “the first beneficiaries in their area,” Zenawi states.

Not likely, says Survival International, which has been monitoring the resettlement of Omo Valley communities for the dam and the land leases. “Forced displacements elsewhere in Ethiopia have led to the impoverishment of those affected, and to increased tension between communities competing for the same limited resources,” Survival states. The group reports that resettlement onto small-scale irrigation schemes and loss of land to sugarcane plantations has already had disastrous consequences for the Afar and Karrayyu peoples in Ethiopia’s Awash Valley.

It is probably no coincidence that many of the countries purchasing agricultural land in Ethiopia are also working desperately to avoid water shortages at home. For example, India, one of the primary investors in Ethiopia, is quickly losing its underground water supply. According to a report by the BBC, water tables are said to be dropping 1.6 inches (4 cm) per year as a result of increased irrigation. Indian investors are reportedly paying around a dollar per hectare per year for Ethiopian land leases.

## Cameroon Rainforest at Risk from Land Grab



**Rainforest in Cameroon is being bulldozed to make way for a palm-oil plantation.**

A group of investors is planning a giant oil palm plantation project in Cameroon that would convert about 70,000 hectares of community-owned land, mainly rainforests and small-scale agriculture land, for an industrial monoculture.

“The project is also an enormous threat for the Korup National Park and other protected areas, including rivers,” says Lars Gorschlüter of the SAVE Wildlife Conservation Fund, which is campaigning on the project and working with local communities who would be affected by it.

By law, Cameroon requires a social and environment impact assessment for such projects, but no such studies have been undertaken, despite the start of land clearing and plantation plantings in the area.

The project will have major impacts on the area’s very high biodiversity. “This is among the most biodiverse forest regions in all of Africa,” says one expert working on the campaign. “It is home to many threatened species and species found nowhere else in the world. It also contains one of the largest remaining forest blocks in West Africa.” The development will greatly fragment the forest, restricting migration of animals such as elephants between protected areas. It is expected to increase the illegal hunt of animals in protected areas for food (called bushmeat).

There is strong local opposition to this development. Recently, local groups organized a very large meeting in the region to bring together stakeholders. “At least 300 people showed up to learn more, but no one from the company came to answer their questions,” said one participant.

Similarly, Saudi Arabia has long imported much of its food and continues to decrease domestic production as the country scales down its wheat-growing program in the face of diminishing aquifers. The company Saudi Star is in the process of buying hundreds of thousands of hectares of agricultural land in Ethiopia. OI researcher Horne confirmed that Saudi Star has plans to build a 30 km canal channeling water from the Awero River. The report also says that the company plans to build a second dam on the river to increase irrigation for rice production. The OI report says there has been no EIA regarding either of these projects and is

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**Diversion of Sat Stream is underway – one of scores of mini-hydro projects in India's mountains. Photo: Samir Mehta**



India's rivers and streams are threatened by a massive hydropower rollout. A recent 10-day trip to visit dam-threatened communities in the northern mountains left me with mixed feelings of joy, hope and despair. That people continue to fight for their rights and against corporate efforts to own rivers brought me great joy. I felt hope that their struggles will bear fruit. But the despair over the many injustices done in the name of "progress" – that's the one that can stop you in your tracks. I vow to stay as strong as the community leaders I met, and not let the despair get the better of me.

My trip covered a dozen or so hydro-power projects of all sizes in the Satluj and Ravi river basins in the State of Himachal Pradesh. Large projects in the northern, mountainous states will have the biggest and most far-reaching impacts, but the smaller ones, which are cropping up all over the country, are seriously harming people's lives and the streams on which they depend. Indeed, the High Court of the state of Karnataka has halted the implementation of a number of mini- and micro-hydro projects in the Western Ghats pending a cumulative impact assessment.

Himachal Pradesh includes three main mountain ranges – the Dhauladhar, Pir Panjal and Great Himalayan ranges. The region's climate and great beauty prompted the British to make Shimla their summer capital. The rural landscape is dotted with small villages and farms. The state is famous for its apples. The soil is fertile and the people are not poor. The steep topography is conducive to construction of dams. The state has identified hydropower as one of its main sources of revenue and pegged its hydropower generation potential at 23,000 MW. The present generation is about 7,000 MW.

What is most disturbing is that even locally important brooks and streams have not been spared from maximum exploitation for hydropower generation. Hydropower projects of less than 25 MW are not required to carry out social impact assessments and environmental impact assessments, despite the fact that they can have serious impacts. For example, the snow- and glacier-fed Tarela brook has been almost entirely diverted to support four hydropower projects of 5 MW each. This has resulted in the shutdown of more than 50 water mills and water-powered wool carding machines (the locals pre-

dominantly rear sheep and goats). The water mill owners were promised benefits, but no agreements were signed and the monthly payments were discontinued after the projects came into operation. Protests brought the state administration into the picture. Not surprisingly, officials arbitrated a negligible monthly sum to be paid by the company. Nearly half of the water-mill owners, who had been operating for decades, were not compensated.

Rivers and streams are being diverted from one valley into another, with serious impacts. The Parbati River is just one of a number of rivers and streams being diverted through a long tunnel into a neighboring valley. All these waters are ultimately used to power the 800 MW Parbati II Hydroelectric Project. Part of the Great Himalayan National Park was de-listed to permit this project to go forward, despite the fact that the site was a prime nesting area for the Western Tragopan, a rare bird that the park was set up to protect. Similarly, the 243 MW Kashang I, II, III and IV cascading hydropower projects plan to divert the Kerang stream into the Kashang stream, notwithstanding the protests of the people of Lippa and Asrang villages to this diversion. Another project will devastate a local apple-growing community by drying up about 35 of their water springs.

### **Small not always beautiful**

The Gujjar and Gaddi tribes are fully prepared for a long battle to stop a 4.5 MW hydropower plant from diverting the entire flow of the Hul stream, on which their lives depend. For the past five months the tribe members have been taking turns to sit by the road at Jadera village to stop all vehicles associated with the project from travelling to the site. This happens under the nose of the state police hired by the project proponent to ensure protection of their project. The police have registered

# Is No Stream S

cases against more than 50 villagers for blocking the road. The tension is palpable.

The Gujjar tribe keep buffaloes. They supply roughly half the dairy products used by nearby Chamba town. The Gaddi tribe rear goats and sheep. They have evolved their own system on who would sit by the road and when so that there's no adverse impact on their earnings. Food is provided to the "road guards" by the families in turns. Their pride will not let them accept financial support from others. They politely refused my offer.

These communities have for more than a decade protected and preserved the forests from which the Hul stream originates. Traditional watermills line its banks, extensive irrigation channels feed terraced vegetable farms, children bathe in silver pools, and lush oak forests run parallel along steep slopes. The stream meets Saal River that joins the mighty Ravi River. Mr. Ratan Chand from nearby Chamba town was instrumental in raising awareness of the need to protect and preserve the oak forests. The project's pipeline will destroy about 2,000 of the slow-growing oak trees. Oak trees, a tribesman said, retain and release four times the amount of water than most other trees do. That is why, he adds, the stream is perennial.

"Government should protect forests. We are doing the Government's job," said a Gujjar leader. "The right to the river is ours. Why should anyone take away our water through pipes," said a Gaddi leader. "We will go to jail and others will take our place" in the campaign to protect the stream, said a woman at the roadside checkpoint, adding, "We have faced bullets, going to jail is nothing in comparison."

While the police harass the protestors, thugs allegedly hired by the project proponent have attacked the villagers with guns; the thugs continue to roam free.

Livelihood and social impacts of poorly planned run-of-river small hydro projects can be devastating, as exemplified in this case. The project, named HUL-1, will generate a mere 4.5 MW by diverting the entire flow of Hul stream to the power house. Local people will be left high and dry. The 65 traditional watermills will grind to a halt, as will fishing and other ways of making a living.

Time and again the villages passed resolutions not to permit the hydropower plant.

# Safe from North India's Dam Boom? By Samir Mehta

But the High Court of the state of Himachal Pradesh has permitted the developer to continue with the project under state police protection while also permitting the people to protest peacefully. The people are adamant that they will not allow the project. One who holds out the longest will win. Only time will tell who that is.

## Mountains of risk

In India, projects are being built and proposed at ever-higher altitudes and ever-closer to the snowline – and the Chinese border. The Kashang projects start around 3,000 meters (10,000 feet). Based on the ecological devastation caused by projects at lower altitudes, the prospect of what will happen to the fragile Alpine ecosystem is frightening. Himanshu Thakkar, Coordinator of the South Asia Network on Dams, Rivers & People, says that the projects will change the microclimate, which will accelerate the melting of the glaciers. The strategic implications of building these projects so close to the border with China are not being discussed in the public domain.

Cascade dams do not leave any stretch of the river flowing free. Sutlej River originates from Lake Rakshastal in China. It enters India in Kinnaur District of the State. Within 7 km of entering India it flows from one tunnel into another. All these projects are so-called

run-of-river projects. It is funny in a sad way how these projects are proposed. It is said that the powerhouse of the proposed 261 MW Yangthang-Khab project will be submerged in the reservoir of the proposed 1,020 MW Khab-Shaso project. The two project proponents are in a race to acquire all permissions and sanctions before the other to win the battle of the duelling dams.

The state's High Court-appointed Committee has recommended that, pending further studies, rivers should flow free for at least 5 km between dams. But the Ministry of Environment and Forests is not ensuring this happens, and state governments and other agencies are permitting cascading dams that essentially bottle up long stretches of rivers. The Ministry is aware of the implications of such a large number of dams in a river basin and has sought cumulative impact assessments of many river basins. Yet at the same time it continues to sanction hydropower projects without waiting for the report. In the case of the Sutlej river basin, the agency that has been selected to do the cumulative impact assessment is the Forum of Independent Hydropower Producers. Apparently no one in Government will admit that this is a clear case of conflict of interest.

Until recently, there has been no requirement for maintaining environmen-

tal flows (essentially, a more natural flow pattern to maintain basic river health). The Ministry of Environment and Forests (MoEF) has begun stipulating 15%-20% of the average lean-season flow of the past four years as the minimum flow. This is completely arbitrary, unscientific, and even ignores whether or not the year was a drought year or whether flow data exists for that river. National Hydro Power Corporation (NHPC), a Government enterprise, has gone to Court against having to release water to maintain this minimum flow. NHPC's stand is that the release of water to maintain minimum flow was not stipulated when their projects were given clearances. Environmental and social considerations are not justification enough to maintain a river flowing with some basic amount of water.

## Healthy rivers? Priceless

India's government and courts have put a price on natural resources, and allow economic considerations to override environmental considerations. The notion that one can pay the monetary price and destroy the environment is being increasingly challenged and questioned by civil society. With regard to hydropower, civil society is mobilizing against India's destructive energy policy.

During my travels I had discussions with many local NGOs and civil society on strategies for protecting their rivers and rights. In coming months, I'll be helping them with information, analysis and advocacy.

The magnitude of the tasks ahead is daunting, as borne out by a statement from a resident of the region: "Mahatma Gandhi himself may have found fighting these dams more challenging – he had only one enemy, the British. We have the dam developers, contractors, construction industry, and misguided politicians and bureaucrats."

It's a big challenge, but we'll use all our strength to ensure that economic development does not supersede all else, that natural resources are not treated as commodities with artificial economic values attached to them, that environmental flows are maintained, and livelihoods and social impacts are addressed.

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*Samir is International Rivers' South Asia Program Director. He lives in Mumbai, India.*



**These people lost their water mills to a cascade of mini-hydro projects that diverted their entire stream. Some have been compensated, some not. Photo: Samir Mehta**

# Listening to Communities on Dam Building in Peru

By Monti Aguirre

In the heavy weeping fog Limeños call winter, I took a taxi along the Pacific Coast to attend a meeting of dam-affected people.

"That is the Christ that the Brazilians gave our president," said the driver, pointing to a distant white statue. It is a duplicate of the famous Christ the Redeemer statue that overlooks Rio de Janeiro. This one was given by Brazilian construction company Odebrecht to then-Peruvian President Alan Garcia.

Odebrecht is one of a number of Brazilian companies interested in tapping into a dam boom in Peru. Close to 50 dams are proposed for Peru's rivers, mostly on the eastern drainage, which could have significant consequences for the health of the Amazon River. Many of these dams would be for exporting power to Brazil. Odebrecht was referred to many times at the meeting of dam-affected peoples that I came here to attend. People had come from all across Peru to a quiet convent in bustling Lima, all fired up to protect their rivers and rights. Forthright Olga Cutipia from the Front to Defend the Inambari River spoke about the resolve of communities that would be affected by the Inambari Dam to stop the project completely. In a recent victory for these people, the Brazilian consortium Egasur's rights to develop the project were recently revoked by the Ministry of Mines under pressure from communities, who blocked access roads to the region and held mass protests.

Concerned Ashaninka representatives from two indigenous peoples' groups – the Central Ashaninka of the Tambo River (CART), and the Central Ashaninka of the Rio Ene (CARE) – were not far behind in their firm resolution to defend the Ene-Tambo River Basin. The Pakitzapango Dam planned on the Ene River remains stalled by a legal action presented by CARE last year. "We will defend ourselves, and also the rights of isolated

peoples who live in Otishi National Park, and the Ashaninka Reserve," said CARE leader Ruth Buendia Mestoquiari.

A woman affected by construction on the recently finished Olmos Dam project in Peru conveyed her sad experience. "We were forced to relocate to a creek, which does not have water in the dry season, but floods in the rainy season. We demand relocation." Men complained because there is no work in their new locality of Nuevo Huabal. The loss of their old places and ways of life is so strong among these people that they are concerned that if they stay there, soon they will simply disappear.

## Political pressure

Official pressure to build dams has been mounting since the previous administration signed an energy agreement with Brazil in 2010, which opens the door for Brazilian companies to build a series of large dams in the Peruvian Amazon. The Peruvian Congress still needs to ratify the agreement. In all, there is potential for construction of at least five dams, and exploitation of 7,200 megawatts, for export to Brazil.

Recently elected President Ollanta Humala, a former army officer who ran for the nationalistic Peru Wins party, made clear in his inaugural speech his resolve to build many dams. If the dam boom proceeds, Mr. Humala's greatest challenge will be to fulfill his promise to defend natural resources and address socioeconomic disparities, because many proposed hydropower plants will do great harm to Peruvian rivers, forests, and the lives of its people. Ecologically and socially destructive dams are also a poor way to reduce economic inequities.

Civil society groups have expressed serious concerns with the way dams are coming on board. "The first problem is that there

isn't a process for energy planning, and the premise is that with more exploitation comes more wealth, which is not necessarily true," said Cesar Gamboa from Rights, Environment and Natural Resources (DAR).

The New Sustainable Energy Matrix (NUMES) and a new national energy policy are still being prepared. The Inter-American Development Bank is financing the nearly complete initial studies, now being prepared by Peruvian and Argentine consulting agencies.

Activists fear the presidential push for hydro will skew the results. "The Ministry of Energy and Mines should evaluate all energy options, and grant priority to energy efficiency and clean renewable projects before signing on to the energy agreement with Brazil," said Aldo Soto of WWF-Peru.

There is also concern that such an important policy is being prepared without consulting civil society.

*Continued on page 14*



Ashaninka people discuss proposals for dams on the Tambo River. Photo: Jose Serra

# Alaska Proposes Massive Dam on Wild River

By Richard Leo

America's biggest dam in half a century has been proposed for the wild Susitna River, which drains the Mt. McKinley-topped Alaska Range. If built to its full 800 feet amidst currently roadless lands, the dam would be the eighth tallest on earth. The state-sponsored dam would produce just 280-300 megawatts of electricity, and cost at least \$5-8 billion dollars.

The enormity of the expense is equaled only by the dam's risks. The river now supports Alaska's fourth densest king salmon run. The river's source is Alaska Range glaciers, which are already diminishing. The dam site is just 40 miles from the seismically active Denali fault with two villages on the floodplain downstream. The huge reservoir will bury caribou migration routes and grizzly bear habitat.

The state insists that the Susitna Dam is necessary to meet its goal of 50% renewable energy by 2025. The dam's earliest completion would be 2023. By 2019, a 100 MW geothermal development within sight of the Susitna River will be online; Alaska's geothermal potential is almost limitless. By the fall of 2012 the first two Alaska wind farms will generate 42 MW; seven more would equal the dam's megawatts for one-sixth to one-eighth the dam's cost. A 5 MW tidal energy project will be online by 2017 with at least 100 MW anticipated by 2025; Alaska holds 90% of the country's tidal power potential. Current studies show that 200-300 MW could be saved with basic energy efficiency programs. The Railbelt Electric Efficiency Landscape report (2010) states: "A 50% improvement in the Railbelt's electricity efficiency could generate an increase of up to \$947,992,100 in economic output, \$290,927,800 in wages, and \$53,499,850 in business income. It would also create an astounding estimated 9,350 new jobs." The Railbelt region of Alaska stretches from Fairbanks to Homer, and is home to the 75% of the state's population that the Susitna Dam would serve.

That's far more renewable energy than the dam. Natural gas now powers most of the Railbelt region. There are undeveloped natural gas reserves for a minimum of 200 more years, during which renewables technologies would be even more advanced and lower in cost.

The cost of the dam is also sure to grow. Legally mandated mitigation measures could increase the cost by as much as 25%; these costs have not been included in the project cost estimate. In addition, interest on bonds to finance the dam have not been



The Susitna River and valley, just below the dam site. The Alaska Range and Mt. McKinley (Denali) are on the horizon. Photo: Paul Roderick

included. The cost of expanding the transmission lines for the dam is also not included. Plus, of course, there are inevitable cost-overruns for a project of such magnitude. It has been estimated that the project's cost could rise to \$6-8 billion or more.

The state claims the project will create jobs. Certainly, any development of this size will create jobs. But after the dam is completed, the number of jobs remaining is expected to fall by 95%. Other energy developments like tidal, wind, geothermal, and natural gas will continue to create jobs across decades as their technologies expand.

So why is the current State of Alaska pushing the Susitna Dam hard and fast? Why choke one of the remaining great wild rivers if it's not absolutely necessary?

The newly established Coalition for Susitna Dam Alternatives believes there is no justification. Nothing warrants the risks, the expense, the simple stupidity of the Susitna Dam. But the State is determined. So is a growing opposition. ●

For more information: [www.susitnadamalternatives.org](http://www.susitnadamalternatives.org).

## Wrong Climate for Damming Alaskan Rivers?

The polar regions, particularly the Arctic, are warming faster than the rest of the world, according to earth scientists. As a consequence, Alaska glaciers and ice fields are expected to shrink by 25-60% over the next century, according to new findings published in *Nature Geoscience*.

The *Alaska Dispatch* reports that the projected meltdown "raises questions about the future of regional hydroelectric projects like the proposed multi-billion-dollar Susitna Dam, and any other Alaska stream that relies on glacial melt for its summer flow."

If Alaska's climate continues to warm over coming decades as projected, summer runoff in glacier-fed basins like Susitna could initially soar by as much as 60%, said Regina Hock, a University of Alaska Fairbanks geophysicist who produced the study. After that, this annual summer surge

could fall away and perhaps stop entirely.

"Concerning both the Susitna Dam or any other hydropower scheme, it is essential to know how much total annual runoff will change," Hock said in an e-mail to *Alaska Dispatch*. "However, it seems that this has not really 'trickled in' yet in Alaska."

Meantime, new dams will make it harder for Alaskan natives to adapt. North American Indian tribes are disproportionately affected by climate change, according to a study by the National Wildlife Federation. More than 200 Native American villages are threatened by more intensive flooding caused by climate change in Alaska, according to the US General Accounting Office.

Salmon runs are also expected to be harmed by the changing climate, as river waters warm and debris from melting glaciers and permafrost is washed into rivers.

# News Briefs

by Kate Ross



Burma's rivers are lifelines for millions.

## Chinese dams fuel violent conflict in Burma

Fierce fighting erupted in June between the Burma Army and the Kachin Independence Organization (KIO) at the site of two dams on the Dapein River, in Burma's northern Kachin State. More than 50 people were reportedly killed, which ended a 17-year cease-fire between Burmese government forces and ethnic militia. Thousands more tried to flee to the border as the Burma Army brought in hundreds of troops to secure the dam sites. According to the Burma Rivers Network, the current conflict is "closely related to the dams. The government has sent in troops because it wants to gain control of a region that hosts major Chinese investments in hydropower." Since the violence in June on the Dapein River, the power plant – which generates electricity for China's Yunnan Province – has stopped operating.

The Dapein No. 1 and 2 dams were built by China's state-owned Datang Company, while a further nine dams are planned for construction by Chinese companies in Kachin state. The largest of these projects is the 3,600 MW Myitsone Dam, which will be the sixth highest in the world. The project will be constructed at the confluence of the Mali Hka and Nmai Hka rivers, where the mighty Irrawaddy River begins. The location is sacred to many Kachin. In March the KIO sent a letter to the Chinese and Burma governments calling for a stop to the project, warning that the dam construction could lead to civil war. In April 2010, 10 bombs exploded at the Myitsone Dam construction site.

The Myitsone Dam would have severe impacts. An environmental impact assessment obtained by Burma Rivers Network said that the dam would threaten local biodiversity and ecosystems and impact millions of people who depend on the Irrawaddy River.

Burma's pro-democracy leader Aung San Su Kyi has joined the struggle to save the Irrawaddy, issuing a personal appeal to reassess the Myitsone Dam: "To conserve the Irrawaddy is to protect our economy and our environment, as well as to safeguard our cultural heritage," she said.

## Resettlement Plans for Rogun Dam Suspended

Tajikistan's biggest dam project finds itself mired in a storm of controversy. After a 10-day investigative trip to the dam site in early August, the World Bank recommended that construction on the dam not be renewed. It is unclear whether the government will take the Bank's advice. However, authorities in Tajikistan have agreed to suspend the resettlement of roughly 30,000 people from 63 villages in the area that would be flooded by the dam.

Since 2009, the Rogun Dam resettlement scheme has been strongly criticized by affected communities and human rights organizations. Political analysts have cautioned the government that the resettlement may have long-term consequences for conflict within the country.

Resettlement will be suspended while studies, funded by the World Bank, are done to explore the dam's suitability, its impacts on the population and its economic viability. The Bank is also urging the government to do a comprehensive feasibility study of the dam.

The Rogun Dam project was first proposed in 1989, stalled after the breakup of the Soviet Union in 1991, and was then revived. In 2010 the Tajik Government made an agreement with the World Bank not to carry out any new construction on the dam until all assessments were shared with downstream countries. There are strong concerns about its impacts on the region's already scarce water resources, particularly the downstream impacts on the agricultural sector in Uzbekistan. The recent recommendations by the World Bank cited concerns over the large volumes of sediment carried by the Vashuch River, which reduce capacity in the reservoir. The World Bank studies will be completed in 2012.

## Vietnam's first wind farm

Multinational energy company GE will work with local developers Cong Ly Company to build the first wind farm on Vietnam's Mekong Delta. Ten turbines will be installed in the first phase of the project, resulting in a total generation capacity of 16 megawatts when it is completed next year. There are plans for a second phase that will add 120 megawatts of capacity. This is the first large-scale energy project in Bac Lieu province. The coastal province is known as the "rice basket" of Vietnam and accounts for the largest amount of Vietnam's seafood export.

The wind farm is a significant project for Vietnam, which is highly dependent on hydropower. More than a third of Vietnam's electricity comes from hydro. In 2010, reservoir levels dropped to critical levels due to drought, causing the nation's dams to reduce operating hours and in some cases cease operations all together. A 2009 World Bank study found that Vietnam has a combined offshore and onshore wind power potential of around 513,260 MW per year. That's 200 times the output of the Son La hydroelectric plant, Southeast Asia's largest power plant.

## Dam safety fears in Malaysia

Bakun Dam, Malaysia's largest, is scheduled to open next year amid widespread worry over reportedly unsafe construction practices. A report published on the online Sarawak Report claims that the concrete used to construct the dam was diluted by excess water. The report shows photos and videos from the construction site, along with an account from a worker on the dam. Construction on Bakun Dam started in 1996 but experienced many delays due to change in ownership and inability to secure financing.

The Sarawak Report states: "It is well-known that the Chinese contractors were under extreme pressure from the Malaysian government ... to get the dam finished as quickly and cheaply as possible, after a series of delays and cost overruns."

Malaysia-China Hydro, a joint venture between Sino-hydro (China's largest dam builder) and Malaysian firm Sime Engineering, is the biggest contractor involved in the construction of the dam. Sinohydro denies the accusations that they used unsafe construction methods, but do acknowledge that "construction practices did not fully adhere to correct procedure."

Safety concerns come on top of the project's alarming environmental and social impacts. The Bakun Dam will flood an area of virgin forest and fertile farmland the size of Singapore.

## Growth in renewables, despite recession

The renewable energy sector continued to grow despite the recession, according to the Renewables 2011 Global Status Report. The report, commissioned by the Renewable Energy Policy Network for the 21st Century (REN21), shows that in 2010, renewable energy accounted for almost 20% of global electricity production. It further states that renewable capacity now comprises about a quarter of total global power-generating capacity. Global investment in renewable energies is also up to over 30%, now at a record \$211 billion. Thanks to declining costs, solar PV has more than doubled. Wind power added the most capacity having been added in more than 100 countries and globally. One

driving force behind this growth is the expansion of renewable energy policies. More than 119 countries now have some sort of national policy target or renewable support policy.

## Hydrokinetic energy innovation

Two young entrepreneurs in Minneapolis have developed an exciting new hydrokinetic technology. Their approach uses turbines tethered to the bottom of rivers to capture the power of the current. Ted Christopher and Chris Pederson have developed a prototype for a circular turbine on a round platform that can work in very shallow waters. In addition, this model has no blades or sharp edges to threaten river-dwelling species. One turbine has the potential to produce five kilowatts of

energy – enough to power four homes. The turbine requires 100 square feet to produce this amount of power, compared to 5,000 square feet that solar panels would need to produce the same. Several of these turbines operating together could offer small grid power to neighborhoods and farms. The designers believe their turbine has good potential for developing countries with limited electricity grids.

Hydrokinetic power is attracting attention across the US; there are currently around 240 hydrokinetic energy projects in the Federal Energy Regulatory Commission pipeline. In New York, propeller-like turbines have been installed on the East River to test tidal power and developers are looking to place turbines on the Mississippi River south of St. Louis, MO.

## Clean Energy Innovations for Africa

### Women's Solar Venture

Katherine Lucey founded Solar Sisters in response to a gender-based technology gap in rural Africa. The one-year-old start up uses an innovative model to distribute small solar lamps to women in rural Uganda, Sudan and Rwanda. In rural Africa, solar panels are often the responsibility of women, who may have no previous background in the technology. The solar lamps distributed by Solar Sisters are specifically designed to be affordable, intuitive to use and readily available. Solar Sisters uses a "micro-consignment" model, meaning that they extend a loan themselves by providing the inventory. Women who sign up to be entrepreneurs do not have to pay the franchise cost up front. In rural Uganda, 95% of homes do not have electricity. According to Lucey, "Solar is the most democratic energy source – we all live under the sun. Energy is free and the equipment is a one-time cost." Solar Sisters plans to scale up its model, and is partnering with local women's groups.

### Universal Charger for Uganda

Fenix International has developed a universal charger specifically for Uganda and other developing countries. It is one of a number of technologies designed to help local people become one-stop electricity providers. The charger does not use a proprietary cord conversion system, but rather has small contacts that can clip onto almost any lithium-ion battery. If you can remove the lithium ion battery from a device, you should be able to charge it, wherever you are, without an adapter. The charger can plug into any USB, but was designed specifically to plug into the "ReadySet," an "intelligent battery" which can take power from a variety of sources such as solar, bike generators or the grid. The battery is then used to charge phones and other appliances. This technology is particularly pertinent in Uganda where mobile devices are abundant (80-85% of people in rural Uganda have a phone) but electricity is scarce.

### Kenya: Turning Weeds into Power

Many people in Kenya used to complain about the blankets of water hyacinth that chokes Lake Victoria, until they became a source of income after being made into ornamental furniture, paper and baskets. Now, a new use for what was previously viewed as a pesky weed is bringing energy to homes. Biogas Africa has developed a portable unit that can generate biogas and liquid fertilizer from fast-growing hyacinth. The anaerobic digester normally produces gas from animal waste. But when tested at Lake Victoria, as well as the weed-infested Nairobi Dam, it was able to break down water hyacinth on a large scale. According to its inventor Dominic Wanjihia, of Biogas Africa, "the digester can continuously generate biogas for a period of up to four months through anaerobic digestion."

Most energy projects are proposed in areas far from where decisions are being made.

In a bit of good news, President Humala has adopted a progressive policy that obliges the government to consult with indigenous peoples on development projects in order to reach consensus.

“The approval of the law of prior consultation of indigenous peoples is a breakthrough and demonstrates the good will of the government to effect the great changes that the country needs,” said Alberto Pizango from the Interethnic Association for the Development of the Peruvian Amazon (Aidesepe).

“Investors should understand that prior consultation should give them legal certainty needed for a socially sustainable project,” said Javier Jahncke of legal NGO Fedepaz. “If they have the agreement or consent of local indigenous peoples, it will give them peace of mind, and they won’t have to agonize over strikes or road closures from protesters, which can result in significant losses for project developers.” Meanwhile, indigenous peoples will be able to count on a fundamental tool that allows them to have legal certainty of land ownership and their rights over it.

NGOs and regional governments are also calling for the cancellation of some hastily adopted laws intended to promote investment in energy projects by the private sector. The most recent of these, dubbed the “energy generation highway,” was issued

in April. It calls for prioritizing the construction of 20 dams on the Marañón River to produce 12,400 megawatts. Most of these projects are proposed in areas of dry forests. The health and livelihoods of communities are dependent on the river’s floods and the nutrients they bring to the soils.

The regional government of San Martin province is demanding to cancel the law that calls for diversion of the Marañón and damming of the Huallaga rivers. Riverine and indigenous communities that depend of these ecosystems would be highly affected, and endemic species would be in danger of extinction. Communities’ agricultural production, forest use, transportation and ecotourism activities would also be impacted.

“The Marañón and the Huallaga rivers supply great quantities of water to the Amazon River,” reads a communiqué from the regional government of San Martin. Other options exist, such as “adopting updated irrigation technologies, water treatment plants and re-use of water.”

President Humala has many complicated issues on his plate when it comes to energy planning and dam building, but he is also blessed with a nation of engaged communities and a rich commons. If he chooses to engage the people in presenting solutions and protecting these common resources, the future will be bright indeed. We’ll be watching and participating, and working with local people to protect Peru’s rich riverine heritage. ●

## Africa continued from page 7

“broadly projected to limit local communities’ fishing and fresh water supply” along with unknown implications for people living downstream. As an article by EUFRIKA.org explained, in looking to Africa for food production Saudi Arabia is “securing the equivalent of hundreds of millions of gallons of scarce water a year.” Says Horne, “The export of food is the export of water.”

### Civil society response

This increasing transfer of lands is stirring up a strong activist response as well. Groups around the world are beginning to monitor and campaign on the issue. In Mozambique, JA is working to stop further land grabs until stronger regulations are in place. Consequently JA reports that a deal by the agribusiness Procana to buy 30,000 hectares to plant the fuel crop jatropha has already been stopped. The group also published an extensive report on jatropha land grabs; its recommendations include that the government train regional judges in community land law, as well as include affected communities in every aspect of negotiations and decisions.

Kuyek of GRAIN explained that understanding pressure points such as the sources of foreign investment is key to holding involved parties accountable. He says that where possible, GRAIN is actively working to inform affected communities of the potential risks of these land deals. The organization also has a website, [farmlandgrab.com](http://farmlandgrab.com), dedicated to global agricultural land grab news.

Survival International is urging donor governments that aid countries such as Ethiopia to leverage diplomatic pressure to discourage destructive land grabs. Survival has sent a letter to the UK Department of International Development requesting that it use its power as “the third largest donor to Ethiopia” to influence the country’s decisions regarding relocation of communities due to land grabs. In addition, the organization is lobbying major donors such as USAID, Germany and Italy to follow suit in Ethiopia. Survival is also pressuring individual companies to explain what

measures they have taken to not “prejudice the rights of the indigenous people of the South Omo.”

Friends of the Earth International is beginning a campaign to support local communities in Africa affected by land grabs, in addition to supporting local organizations. They plan to create “community toolkits” consisting of a compilation of resources to help resist illegal eviction from their land. The organization also plans to draw up a list of “international demands for regulation and information” of the African land deals.

The Oakland Institute is in the process of rolling out reports on seven African countries in the midst of the land grab struggle, the latest in their multi-part effort to build a comprehensive case against these developments across the continent. A special report on the implications for water supply will be part of the package.

The African Development Bank will host a conference in early October to discuss the growing trend of land deals and how to continue in “an environmentally and socially responsible manner.” Yet many activists believe that industrial agriculture is a fatally flawed approach for ensuring global food security.

The veneer of “corporate social responsibility” is also wearing thin as the number of communities losing access to their land and rivers increases. Meanwhile the trend of international industrial agriculture’s role in land grabbing is the target of growing attention from mainstream media, local farmers and communities, environmentalists and human rights groups. As the phenomenon of land grabbing gains momentum in Africa, so, too, does the awareness of its risks, and the resistance against it. ●

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More information on Ethiopia’s dam boom:  
[www.internationalrivers.org/en/node/2484](http://www.internationalrivers.org/en/node/2484)

Oakland Institute’s Report overview: [tinyurl.com/6b3fkw7](http://tinyurl.com/6b3fkw7)

# “Green” New Deal Projects Threaten Korea’s Rivers and Tidal Flats

By Yekang Ko and Derek K. Schubert

Although South Korea adopted “Green Growth” as a national slogan in 2008, battles between environmental activists and the government have, ironically, become fiercer than ever. While the government rushes forward with its highly publicized “Green New Deal,” environmental groups say that nominally “green” national-scale construction projects are threatening Korea’s valuable ecosystems, especially riparian and tidal wetlands. The most controversial projects are the huge river-engineering scheme known as the Four Major Rivers Restoration Project (see *WRR*, Sept. 2009 and Sept. 2010) and tidal power plants along South Korea’s western coast.

## Countless problems with Four Rivers

The Four Rivers Project, which includes 16 dams, is nearly 80% complete just two years after massive dredging began in 2009. The government argues that the dredging reduced the damage from flooding earlier this summer. But environmental groups and the media are continually discovering and reporting disastrous events caused by this “restoration.” Bridges and embankments have broken, water supplies have been cut off, freshly completed waterfront parks and farmlands have flooded, and rivers have tried to recover their original shape. These side effects have environmental costs that must be weighed against the flood-related savings claimed by the government.

Environmental experts and academics in and outside the country note that they predicted many of these effects, but the government acted in haste and failed to heed their warnings. Last May, Dr. Hans H. Bernhart, a German hydrologist from the Karlsruhe Institute of Technology, sent an open letter to UNEP, accusing the organization of wrongfully endorsing the “irresponsible” Four Rivers Project based on information provided by the Korean government. Many experts, including Dr. Bernhart, now say that stopping the project entirely and removing the nearly completed dams would be the best way to prevent further damage and to avoid huge maintenance costs. Otherwise, the only option to avoid sediment input would be subjecting the tributaries to “refurbishment”: that is, dredging and other operations being performed on the four main rivers. Sure enough, the government recently proposed the Four Rivers Tributaries Refurbishment project, which would affect a total of 5,500 km of rivers and cost another US\$19 billion. (The Four Rivers Project itself has affected roughly 900 km and cost US\$21 billion.)

## Not-so-green tidal energy

The other controversial “green” project is the construction of six tidal power plants, one recently finished and five more planned, along South Korea’s western coast. Tidal power may seem “green” (just like “river restoration”), but these projects would require the destruction of tidal flats that host tens of thousands of migratory birds and are officially protected under Korean environmental laws. The Ganghwa Tidal Power Plant is proposed right next to Ganghwa Tidal Flat and the Black-Faced Spoonbill Habitat, a 370-km<sup>2</sup> area protected since 2000 as a Natural Heritage Site. Black-faced Spoonbills, a Natural Heritage Species and classified as “Endangered” by IUCN, nest and breed in the small, rocky islands here. A second plant, Incheon Bay Tidal Power Plant, is proposed south of Ganghwa Island and would cut through the largest of



The newly completed levee near Sangju Dam, part of the Four Rivers project, collapsed on June 25, 2011. Water flows throughout the river have changed due to flaws in dam design. Environmental experts expect problems like these to continue. Photo: © Kim/GREEN KOREA

Korea’s “wetland preservation areas”: the Jangbongdo wetland preservation area, designated in 2003. Jangbongdo’s tidal wetlands are renowned for their valuable marine habitat and unique landscape. Jangbongdo has some of the nation’s few remaining well-preserved tidal flats. According to a report prepared for a 2008 Ramsar meeting by Korea NGO Network, more than half tidal flats in South Korea had been drained or filled.

The unprecedented scale of tidal-power development in South Korea is especially significant. The newly completed Sihwa Tidal Power Plant (254 MW) replaced the Rance Tidal Power Station in France (240 MW) as the world’s largest, and the additional five proposed for Korea would be even bigger. Utility companies are swarming over Gyeonggi Bay to help meet South Korea’s Renewable Portfolio Standard, which set goals on renewable energy. Environmental NGOs and local fishermen anticipate that tidal power plants at this scale would increase flooding of Ganghwa Island and bring about deep and lasting harm to the tidal ecosystems, fisheries, cultures, and landscape. Nevertheless, no environmental impact assessment has investigated the cumulative impact of these three plants, and the government’s original cost-benefit analyses did not thoroughly incorporate the values of tidal flats.

Recent studies, though, are causing the South Korean government to reconsider tidal power. In June 2011, Incheon Development Institute reported that the current cost-benefit analysis for the Incheon Bay plant was skewed; rather than returning \$2.10 in benefits for every dollar spent on the plant, this study showed only 80 cents in benefits for every dollar spent, meaning that building the plant would be a waste of money. In addition, Korea’s Ministry of Environment pointed out considerable flaws in the preliminary Environmental Impact Assessment, so the Ministry of Land, Transport, and Maritime Affairs has had to defer their plans for the Ganghwa and Incheon Bay projects until more studies are done. Although these tidal projects are temporarily blocked, as long as the government pursues a narrowly defined “segmented green” approach instead of a holistic “systematic green,” this battle over misguided development projects will continue. ●

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## Civil Society Pressures UN and EU Over Carbon Credits

By Katy Yan

For as long as the Kyoto Protocol's Clean Development Mechanism (CDM) has been funneling money to projects that supposedly cut carbon emissions, civil society groups have been monitoring the worst projects in the pipeline. While investors, experts, and governments have started to take note both of the environmental and social problems of specific projects and of the intrinsic flaws within the system, the UN's CDM Executive Board continues to lag behind. The latest affront has been the approval of two projects linked to human rights abuses.

In January, the Board approved the Barro Blanco Hydroelectric Project, planned for Panama's Tabasara River. The project would displace 5,000 indigenous people and flood the community of Nuevo Palomar, home of the region's official elementary school. In late 2010, groups from across Panama and Europe were successful in prompting an investigation by the European Investment Bank into human rights abuses at the dam. The developer then pulled out its loan request and turned to the CDM for support. Over the objections of several local and international groups, the CDM Executive Board approved the project.

The Board also approved a controversial biogas project in Honduras linked to human rights abuses. The project developer's security forces allegedly killed five people. A coalition led by the Brussels-based group CDM Watch is calling on the European

Union to ban carbon credits from any projects linked to human rights abuses.

Despite the Board's lack of action to curtail faulty CDM projects, there has been a change in mood among carbon-market investors. At least one investor and a German investment bank have withdrawn from the biogas project in Honduras, for instance, following the revelation of human rights abuses. Another project seeking credit buyers, the massive Coca-Codo Sinclair hydropower project in Ecuador, has met with almost no interest among investors. Experts have indicated that the project is unlikely to qualify for the CDM, citing environmental concerns, as the project is 19 kilometers upstream of the San Rafael Falls, the country's biggest waterfall and a biosphere reserve.

While the uncertain future of the CDM post-Kyoto (i.e. after 2012) is a major driver in the downturn of interest, environmental and social concerns are clearly important factors due to the reputational risks they confer onto a project. International Rivers and our partners have submitted comments on more than 40 hydropower projects over the years, highlighting their social, environmental and technical problems. Almost a third of these have had their validation contracts terminated and another third are stalled. The combination of vocal stakeholder opposition, a poor global reputation, and lack of investor confidence is making the CDM an unattractive pit stop for easy money. ●