

# Serious Damage

Tribal peoples and large dams

A person wearing a light blue shawl is sitting on a thick, gnarled tree branch. They are looking towards the camera. In the background, a wide river flows through a lush green landscape under a clear blue sky. The river is bordered by dense green vegetation and a large, dark, earthen dam structure is visible in the distance.

A Survival International report

Tribal peoples have suffered disproportionately from the effects of hydroelectric dams built on their land, while the potential benefits rarely reach them.

International financing and support for new dams began to dry up at the end of the twentieth century, as the negative impacts of poorly thought out and badly executed hydro projects became increasingly clear.

It is now a decade since the World Commission on Dams recognized that large dam projects 'have led to the impoverishment and suffering of millions', and established firm standards and guidelines for future dams, which included projects being 'guided by' tribal peoples' free, prior and informed consent to projects affecting them.<sup>1</sup>

Enthusiasm for large dams is resurfacing, driven by the international dam lobby which is working hard to paint its industry as a panacea to climate change. The lessons learned last century are being ignored, and tribal peoples worldwide are again being sidelined, their rights violated, and their lands destroyed.



A Penan man collects jackfruit from the forest.

**'We are not against the dam. We are against the disintegration of our communities.'**

Thai village elder. Mun River

# The large dam resurgence

Dam construction reached a peak during the 1970s, when for several years large dams were being built at a rate of about a thousand a year, according to the World Commission on Dams.<sup>2</sup>

This remarkable pace tailed off significantly in the late 1980s and 1990s, largely because of growing concerns over the negative impacts of large dams.<sup>3</sup>

The World Commission on Dams (WCD), created by the World Bank and the International Union for Conservation of Nature (IUCN) to investigate the effects of dams, was formed in 1998.

The Commission's report, published in 2000, found that, 'Large dams have had serious impacts on the lives, livelihoods, cultures and spiritual existence of indigenous and tribal peoples.'<sup>4</sup> The WCD recommended that, 'Where projects affect indigenous and tribal peoples, such

**'Even if we were paid millions of dollars, this money cannot guarantee our survival. Money can be printed, but land cannot be created.'**

Tribal leader protesting against the Bakun dam, Sarawak

## Large dams

Definitions of a 'large dam' vary, but generally it means a dam that is more than 15 metres high, or which has a reservoir capacity of more than three million cubic metres.<sup>42</sup>

Every large hydroelectric dam has to be uniquely designed to fit the geological context of the area. It can take decades to build a large dam (even longer when there is considerable local opposition to the project), making the whole process expensive and unpredictable.

processes [should be] *guided by* their free, prior and informed consent.'<sup>5</sup> The recommendations stopped short, however, of recognizing tribal peoples' right to veto large dams planned on their land.

China is now the single biggest funder of dams, replacing the World Bank<sup>6</sup>. The China Three Gorges Project Corporation, builder of the controversial Three Gorges Dam which displaced more than a million people from around the Yangtze River, has been contracted to build a dam on the land of the Penan tribe in Sarawak. China's biggest state bank, the Industrial and Commercial Bank of China, is considering funding Gibe III in Ethiopia, which is to be Africa's tallest dam and will destroy the livelihood of at least eight tribes.<sup>7</sup>

In 2003 the World Bank reverted from its cautious policy of the 1990s, when it stopped funding hydropower altogether, and committed itself to investing in high risk, high return hydro projects (like big dams), making

an even more explicit commitment to scale up funding for hydropower in 2009.<sup>8</sup>

According to the World Bank's own figures, its portfolio for hydropower and dam projects currently totals US\$11 billion, with funding up more than 50% since 1997<sup>9</sup>. The African Development Bank made a similar commitment to scale up investment in 2007.<sup>10</sup>

Other governments claim they no longer need vast loans from international lending banks. Brazil says it will build the controversial Belo Monte dam largely with funding from the Brazilian state development bank (BNDES), and some from the private sector. The Chinese government has financed the majority of dams built in China, which account for about half the global total.<sup>11</sup>

The International Hydropower Association (IHA) is a major dam industry lobbying organization set up with UNESCO. The IHA is gearing up to launch its own 'assessment framework', the *Hydropower Sustainability Assessment Protocol* (created in conjunction

with the World Wildlife Fund and The Nature Conservancy).

The *Protocol* does not set any minimum standards for dam construction. Instead, various aspects of proposed projects are given a score between one and five. Thus a poor score for 'quality of the management planning process with respect to indigenous peoples issues, risks and opportunities' might be offset by a good score on 'transparency and competitiveness of the bidding process in awarding of contracts.'<sup>12</sup>



The Enawene Nawe invaded the construction site of the Telegráfica dam in 2008, destroying it.

### Akawaio and Arekuna tribes Guyana

Dam: Upper Mazaruni

Guyana's Energy Minister summoned five Akawaio tribe leaders in 1973 to inform them that their communities were going to be flooded by a hydroelectric dam on the Mazuruni River, and that they had no choice but to consent.

One of the Akawaio men refused to agree, but the other four signed a statement of acceptance on behalf of their communities. When the rest of the Akawaio learned what had happened they were outraged, and within a month all but one of the statements had been withdrawn.

The Mazaruni dam was shelved after a high profile international campaign by the Akawaio and Survival.<sup>43</sup>

Today, the Guyanese government is poised to approve a new hydroelectric dam project on the Upper Mazaruni, which is very similar to that of the 1970s. If the dam is built thousands of indigenous people, including the Akawaio and the Arekuna, will lose their livelihoods and land, becoming refugees.



# What's the problem with large hydroelectric dams?

## ● Too much water, too little water

Creating a dam's reservoir involves flooding land, potentially submerging crops, forests, houses, and forcing entire communities to be relocated.

Many indigenous people had to move to make way for Sarawak's Bakun dam reservoir, which covers a surface area roughly the size of Singapore<sup>13</sup> (see Penan box).

The reservoir of India's Sardar Sarovar dam along the Narmada River prompted the eviction of thousands of families, many of them tribal. Despite strict demands from the World Bank, which part-financed the dam, that all displaced people be resettled on comparable land, the state governments opted to give many of the displaced people cash compensation instead, or to offer them land that was infertile and useless. The result was destitution and dependency.<sup>14</sup>

In 1985 Survival complained to the International Labour Organization over Sardar Sarovar. The ILO upheld the complaint and instructed the Indian government to revise the resettlement programme, in order to comply with ILO Convention 107 on tribal peoples' rights (the precursor to ILO

A Karo man and woman sit in front of Ethiopia's Omo River, which is a lifeline in their parched land



**Omo Valley tribes**  
Ethiopia

Dam: Gilgel Gibe III

The Ethiopian government is building Gibe III on the Omo river. It will be Africa's tallest dam and is part of a series of five dams. Gibe I and II have already been built.

The tribes of the Lower Omo Valley rely on the Omo River to survive in what is an extremely inhospitable environment. During the annual flood, the river deposits fertile silt along its banks, in which the tribes are able to grow vital food crops. Some tribes graze their cattle along the riverbanks, as for much of the year there is little grass elsewhere. The hunter-gatherer Kwegu tribe also fish in the river.

The dam's constructors say they will release water to create an 'artificial flood', but this cannot do the work of a natural flood in laying down enough rich silt to see the tribes through until the next year. Even if it could, the lives of the Omo Valley tribes would be in the hands of the dam operators, always under pressure to maximize cost-efficiency by reducing or stopping the artificial flood altogether, particularly in years of drought.

Construction on Gibe III began in 2006, before the dam was approved by the Ethiopian environment agency. The majority of the tribes living downstream have not been consulted, have no access to independent advice and little concept of how the dam will affect them. The Ethiopian government shut down several regional community associations in 2009, making it almost impossible for the tribes to share information or discuss the dam.

The Ethiopian government plans to use the Gibe III reservoir to irrigate huge tracts of tribal land in Lower Omo, to be leased to foreign investors for growing cash crops, including biofuels. The tribes have not been consulted about this land grab, which is in flagrant violation of the Ethiopian constitution and the United Nations Declaration on the Rights of Indigenous Peoples, which Ethiopia has endorsed.

The Gibe III dam, and the associated land grab, may affect the tribes' food security so severely that these largely self-sufficient peoples will have to become dependent on food aid to survive.

Convention 169), which India has ratified.<sup>15</sup> The government rejected Survival's concerns<sup>16</sup>, and the tribal people affected by Sardar Sarovar continue to suffer acutely.

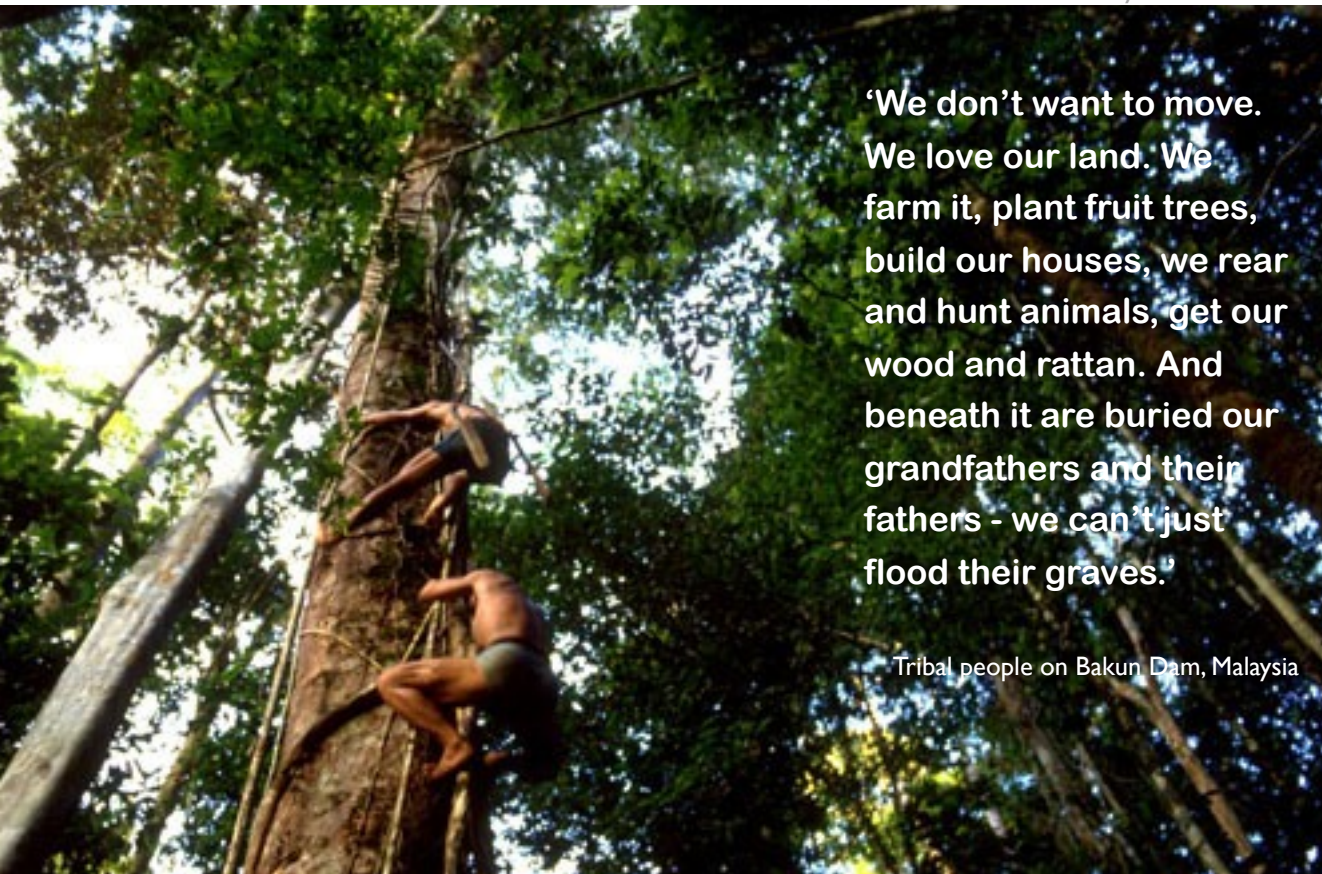
Creating reservoirs involves reducing the water flow downstream of a dam, altering the river's flood patterns. Dramatic changes in water flow over seasons can threaten the food security of communities living downstream (See Omo Valley tribes box).

It is not uncommon to build a series of dams along a single river system, to maximize electricity production. Multiple dams can multiply problems, but cumulative impact assessments are not always carried out before construction begins (Ethiopia's Gibe dams and Brazil's Juruena River dams are two current examples).

**'We don't have cattle; we eat from the Omo River. We depend on the fish, they are like our cattle. If the Omo floods are gone we will die.'**

Kwegu man, Ethiopia

Two Penan men scale a tree in their forest on Sarawak, which is now threatened by the Murum dam.



**'We don't want to move. We love our land. We farm it, plant fruit trees, build our houses, we rear and hunt animals, get our wood and rattan. And beneath it are buried our grandfathers and their fathers - we can't just flood their graves.'**

Tribal people on Bakun Dam, Malaysia

## ● Dams and disease

Dams reservoirs are a perfect breeding ground for vectors of disease, including malarial mosquitoes and snails carrying bilharzia. Cases of malarial infection in dammed areas are consistently higher after the reservoir is filled than before.<sup>17</sup>

## ● Fish

Changing the flow of a river in turn affects the movement of the fish that live in it, a major food source for many tribal peoples. Many modern dams now have 'fish ladders' to allow fish to migrate upstream, although these are not always compulsory and are often not included or properly designed.<sup>18</sup>

Over 70 small hydroelectric dams are being built along the Upper Juruena River in the Amazon state of Mato Grosso in Brazil. The small Enawene Nawe tribe are fiercely resisting these dams. In both 2009 and 2010 the Enawene Nawe did not catch any fish during their annual trapping season – a disaster for a tribe which does not eat meat. This also meant they could not properly perform their most important ceremony, *yākwā*, which involves the ritual exchange of fish with the spirits. The Brazilian authorities had to deliver emergency food aid in the form of farmed fish to the tribe.

Two dams built on the Elwha Klallam tribe's territory in the USA in 1913 and 1927 severely affected the river's salmon stocks, which were spiritually significant and central to the Elwha Klallam's diet. At the end of the twentieth century the authorities

The large influx of people associated with building and operating hydroelectric dams has significant health implications for tribal people, as dam workers carry with them diseases which may be entirely unknown and fatal to the tribes (see Isolated tribes box).

recognized the damage the dams caused, and an ambitious decommissioning process is



An Enawene Nawe child holds aloft a fish that has been smoked on the river bank.

scheduled to begin in 2012.<sup>19</sup>

Dam reservoirs fundamentally alter the river environment for people living upstream. Although dam proponents regularly cite reservoirs as an excellent environment for breeding fish, the equipment required to harvest fish in a reservoir (rather than a narrow but fast moving river) can require a capital input beyond the means of most indigenous people<sup>20</sup>, further channeling the river's resources into the hand of enterprising outsiders rather than the tribes who have protected them for generations.



# Why are tribal peoples most affected?

The negative impacts of large hydroelectric dams can be profound and irreversible, with tribal peoples often most acutely affected. Severing the social and cultural ties between a tribe and their land can very quickly lead to the dissolution of the tribe itself.<sup>21</sup>

In India, according to the government's own figures, at least 40% of people displaced by 'development' projects there (including large dams) are tribal, even though tribes constitute just 8% of the country's population. Almost all of the large dams built or proposed in the Philippines have been on the land of the country's indigenous people, who account for only around 10% of the total population.<sup>22</sup>

You ask if we own the land and mock us saying, 'Where is your title?' Such arrogance to speak of owning the land - how can you own that which will outlive you?

Macliing Dulag, Tribal leader in the Philippines, shot on April 24 1980 for leading resistance against Chico dam

## ● Invisible people, unmarked land

Accurate data on tribal populations simply do not exist in many parts of the world, making it difficult for planners to create adequate impact assessments of a proposed dam. The problem compounds an endemic tendency within the dam industry to significantly underestimate the number of people to be affected by their projects. More than 60% of all population displacement endorsed by the World Bank is for dam projects<sup>23</sup>, and the Bank's review of these projects over ten years found that the number of people actually evicted was 47% higher than the planning estimates.<sup>24</sup>

The proponents and builders of large dams have historically failed to recognize the

myriad ways in which tribal peoples use their environment and how they depend on it for everything. Land which officials do not recognize as cultivated may be registered as underutilized or, in the case of nomadic peoples, unoccupied (this is the case with much of the Omo Valley tribes' grazing land in Ethiopia, and also for Mali's Bafing dam, where villagers' fallow land, vital to their agriculture, was not recognized).<sup>25</sup>

If use of land, including hunting and gathering territory, is not recognized at the early stages of dam development, project proponents have little idea how much will be destroyed.



Compensation for lost land or livelihood is often available only to those who hold legal title to the affected land, which most tribal people do not because many governments refuse to recognize their collective land ownership rights.

Only 45 families out of 300 in the tribal village of Manibeli, flooded by the Sardar Sarovar dam, were offered compensation and resettlement packages for their losses.

The others did not have land titles, despite having lived there for generations, and were therefore deemed not to qualify.<sup>26</sup>

Where tribes do receive compensation it is frequently arbitrary and administered by outsiders. As many indigenous leaders have emphasized, no amount of compensation can make up for loss of land.

Pirahã man in a canoe. The Pirahã will be affected by the Madeira River dams



### Isolated tribes Brazil

Dam: Jirau and Santo Antonio

The Brazilian government's Accelerated Growth Programme (known by its Portuguese acronym PAC) intends to turn the Amazon into a major energy source for the country and the region. Part of the programme includes building the Jirau and Santo Antonio dams along the Madeira River, one of the largest tributaries of the Amazon. The PAC will open up a 4,300km industrial water-way, enabling timber, soya beans and minerals to be transported quickly to Atlantic and Pacific ports.

Several groups of uncontacted tribes live near both dam sites. The government has not mapped out or ratified their territories.

Roads to the dam sites will facilitate an influx of outsiders (and their diseases), who in turn will cut more roads through the isolated tribes' forest, and colonize the area. Poachers will have easy access to the forest, destroying the resources the isolated tribes rely on.

Brazil's indigenous affairs department has evidence that the noise of the dam construction has pushed isolated tribes out of the heart of their land near the construction site, into a territory where miners are operating illegally, and where malaria and hepatitis are rife. Isolated tribes are extremely vulnerable to diseases carried by outsiders, to which they often have little or no immunity. Contact can be deadly; entire tribes have been wiped out in this way in the past.

The stagnant water from the dams' reservoirs will provide a perfect breeding ground for malarial mosquito larvae, which could also lead to epidemics of the disease.

Other indigenous peoples, with more regular contact with outsiders, will also be affected by the Madeira River dams. These tribes were not properly consulted about the dams before building work started even though Brazil has ratified the International Labour Organization Convention 169, which enshrines indigenous peoples' right to be fully consulted about projects like this.

Domingos Parintintin from the Parintintin tribe, which will be affected by these dams, said, 'We hope that this project will not continue, because it is our children who will suffer. There will not be enough fish, or enough animals for us to hunt.'

## No voice, no consultation

Although most dam projects claim to consult affected populations, rarely is the process appropriate or adequate for tribal peoples. Basic hindrances, including language barriers or a failure to recognize a tribe's particular needs and values, tend to result in a token exercise rather than genuine dialogue.

Consultation may also begin well into the dam project's lifecycle, after considerable finances have already been committed to the dam. Construction of the Gibe III dam was already underway when the most affected tribes first became aware of the project (see Omo Valley tribes box), and the Penan were simply told they would have to move for the Murum dam (see Penan box).



Fish are an important food source for Penan

Consultants often apply an inappropriate model in which 'leaders' are assumed to speak for entire communities (see Akawaio and Arekuna box). Inadequate consultation measures present an open door to corruption, allowing the possibility of bribes for a few key individuals to determine the future of entire communities.



**Penan**  
Malaysia (Sarawak)

Dam: Murum dam

'We're not like the people in the towns, who have money and can buy things. If we lose all the things the forest gives us, we will die.'

In 2008, leaked documents revealed plans by the Sarawak state government to build twelve new hydroelectric dams. The first of these dams, along the Murum River, is already more than 30% complete.

Sarawak, the Malaysian part of the island of Borneo, is home to many indigenous peoples, including the hunter-gatherer Penan tribe. Penan from at least six villages have been told they will have to move, to make way for the Murum dam and its reservoir. About a thousand Penan are threatened with losing their land.

When Penan representatives tried to hand in a statement against the dam to the Chief Minister of Sarawak in 2009, they were arrested. In the statement, the Penan told the authorities,

'We bring (you) the deep pain in the hearts of all the people of the Penan villages...because of the heavy concerns with how our lives have been since the start of the construction of the Murum dam project.'

If this Murum dam continues, the water from the dam will flood our traditional lands including our villages... The forest areas and resources that support our lives will be destroyed.'

The Human Rights Commission of Malaysia investigated the Murum dam project, and concluded the Penan had not been properly consulted and their views were not taken into account during the dam planning stage.

The Penan have not been given any official information about the impact of the dam, or what to expect regarding compensation or resettlement. Despite this, some of the Penan are already aware of what displacement is likely to mean, having witnessed the difficulties faced by other Penan who were resettled to make way for the Bakun dam. These Penan now find themselves unable to hunt or gather, with only small plots of land on which to grow food. They had been promised electricity and running water in their new homes but, with few prospects for making money, many find it difficult to raise the cash to pay the associated bills.

The Bakun dam alone will provide far more energy than Sarawak needs, and plans to transport the electricity to mainland Malaysia have been shelved. The twelve new dams are unnecessary but will facilitate the development of the 'Sarawak corridor of renewable energy' which will involve oil, timber, aluminium and palm oil enterprises on the island and further threaten the land of Sarawak's tribal people.

In Bangladesh, about 100,000 Jumma tribal people lost their homes, and as much as half of their best arable land in the Chittagong Hill Tracts, due to the USAID-funded Kaptai hydroelectric dam.<sup>27</sup> With no land or homes, about 40,000 Jummas were forced to travel over the border into India. After the dam was finished, the Bangladesh moved hundreds of thousands of poor Bengalis into the region, giving them the best remaining land. The settlers are armed and supported by the Bangladesh army who unleashed

waves of violence against the Jummas. Most of those who were evicted for the Kaptai dam are still living in India, unrecognized by either state. Those who have remained in or returned to their territories are further threatened by a proposed second Kaptai dam, for which Bangladesh has reportedly approached the USA regarding assistance.<sup>28</sup> No attempt has been made to inform or consult the Jumma people about these plans.



Enawene Nawe performing their annual yākwa ritual, which is linked to the fish they catch in the tributaries of the Juruena River

## ● Cultural ties to land & rivers

The bonds between tribal peoples and their land are profound, influencing the structure and cohesion of their societies, imbued with the spirits of their ancestors. For most, their land provides for them in all aspects of life – physical and spiritual.

Tribal people who are wrenched from their land (either through eviction or destruction of the land itself) very often succumb to

alcoholism and depression. The loss of land, way of life and livelihood drives some to commit suicide as their societies disintegrate around them. The suicide rate of tribal peoples who have lost their land is regularly higher than national averages. Canadian Indians are up to ten times more likely to commit suicide than the rest of the population (for more on this, see Survival's groundbreaking report *Progress Can Kill*).<sup>29</sup>



# Selected hydropower projects currently threatening tribal peoples' future

Country	Tribes affected	Dam	Main threat	Where's the money coming from?*	Who's doing the work? **
Brazil	Enawene Nawe, Nambiquara, Erikbatsa, Pareci, Myky, Arara, Cinta Larga	Juruena River and Aripuanã River dams complexes	Loss of fish stocks, environmental degradation, water pollution	Brazilian National Development Bank - BNDES, André Maggi Group (Brazil)	Maggi Energia, Juruena Participações and others
Brazil	Uncontacted tribes, Karitiana, Karipuna, Uru-eu-Wau-Wau, Katawixi	Madeira dams including Jirau and Santo Antônio	Loss of land, disease.	Brazilian Development Bank - BNDES Banco Banif Portugal through their stake in the FIP Amazônia Energy Investment Fund	GDF Suez (France) Voith Hydro (Germany) Odebrecht (Brazil) Andritz (Austria)
Brazil	Kayapó, Arara, Juruna, Araweté, Xikrin, Asurini, Parakanã, uncontacted Indians	Belo Monte	Loss of land and food security, disease, environmental degradation	Brazilian Development Bank BNDES (almost 80%), state pension funds, private investors	Norte Energia Consortium (Brazil), comprised of nine Brazilian companies including Chesf and Queiroz Galvão.
Canada	Innu	Lower Churchill	Negotiations have resulted in Innu Nation leaders signing agreement in support of the Churchill project on condition of hunting rights and land ownership. The deal will now go before the entire community, which will vote on it.	Canadian government	Newfoundland Labrador Hydro (Canada)
Ethiopia	Hamar, Dassenach, Karo, Kwegu, Mursi, Nyangatom, Bodi, Turkana	Gigel Gibe III	Loss of land and food security	No confirmed sources, but Italian government, Chinese State Bank ICBC and World Bank are considering	Dongfang Construction company (China) Salini Costruttori (Italy) Harsco Corporation (USA)
Guyana	Akawaio and Arekuna	Upper Mazaruni	Displacement and loss of land	No confirmed sources, but project operators cite discussions with Inter-American Development Bank, World Bank and Deutsche Bank.	ENMAN (Trinidad and Tobago) Hardy Stevenson and Associates Ltd (Canada)
Malaysia	Penan	Murum and others	Displacement to make way for reservoir, loss of land	Malaysian government	Three Gorges Dam Company (China) Sarawak Energy (Malaysia)
Peru	Ashaninka	Pakitzapango and others	Loss of land, disease, cultural alienation.	Proposed - Brazilian Development Bank (BNDES)	Eletrobrás (Brazil) Odebrecht (Brazil) Pakitzapango Energia SAC (Peru)

Table compiled with information from contracted companies, government sources, tribal peoples' organizations and Banktrack ([www.banktrack.org](http://www.banktrack.org)) available when going to press

\*|Not comprehensive

\*\*| Not comprehensive, includes construction, consultation, pre-feasibility studies etc.

# 'Green' energy?

Dam builders are selling their product as a cheap source of renewable, sustainable energy. According to a 1994 US Department of Energy brochure, 'hydropower plants produce no carbon dioxide'.<sup>30</sup> The International Hydropower Association called hydropower 'one of the cleanest and most reliable sources of energy'.<sup>31</sup>

International financial institutions like the World Bank and the European Investment Bank are also embracing hydropower's green credentials, stepping up investment in hydroelectric dams this century and littering project proposals with the dams' 'sustainable' credentials.

The UN's Clean Development Mechanism (CDM) allows countries to earn 'carbon credits' by creating emission reduction or sequestration projects. Countries with lower greenhouse gas emissions can therefore attract investment in 'green' development projects, while high-emission countries can purchase the credits generated through the

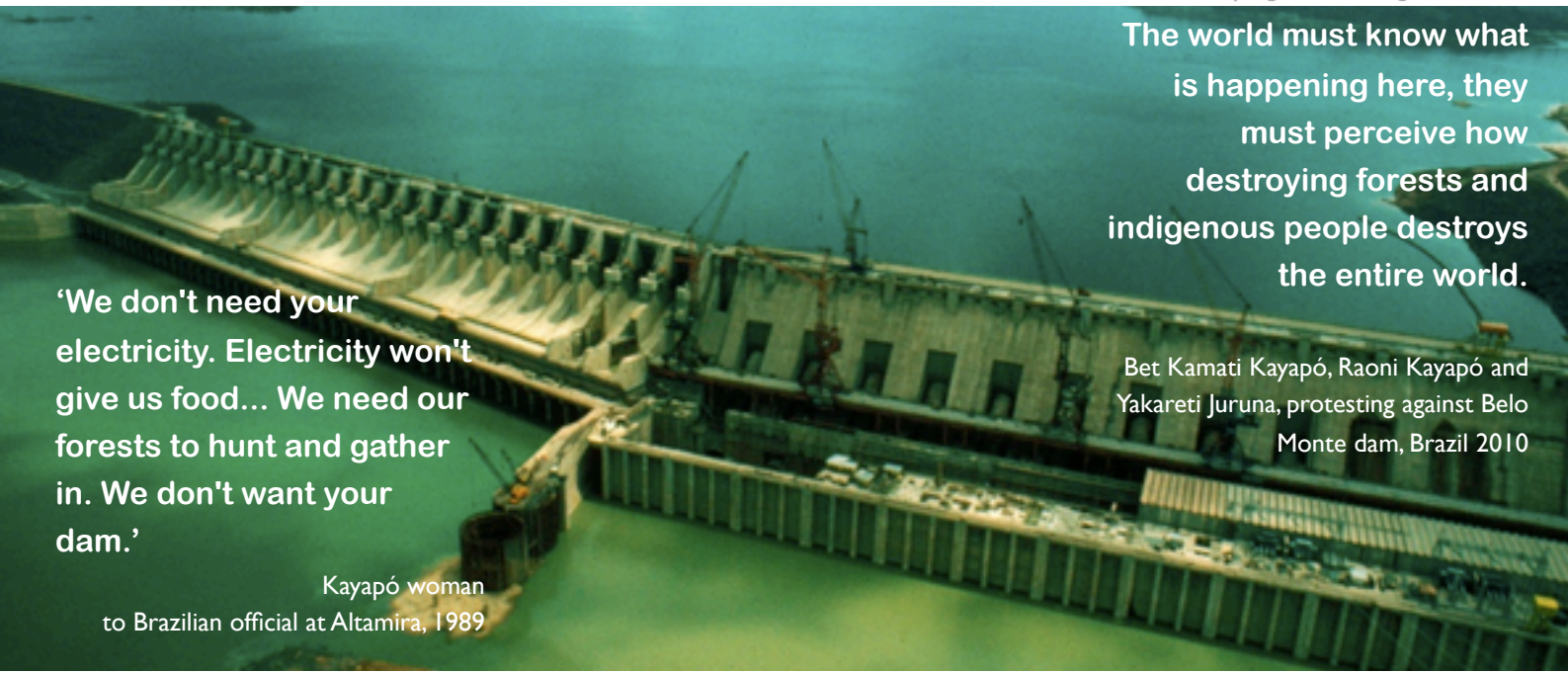
projects to 'offset' their own excessive emissions.

According to CDM Watch, more than a third of all projects registered with the CDM in 2008 were hydropower projects, making them by far the most common type of project vying for CDM carbon credits.<sup>32</sup>

International Rivers and CDM Watch are lobbying the UN to remove hydroelectric dam projects from the carbon credit system, but the International Hydropower Association is lobbying to broaden the inclusion criteria for dams.<sup>33</sup>

Malaysia-China Hydro, which built the Bakun dam in Sarawak, calls the dam 'Malaysia's future in clean energy'<sup>34</sup>. The dam displaced thousands of indigenous people, stripping them of their land and the security it provided.<sup>35</sup>

Tucuruí dam in Brazil, which now contributes a sixth of the country's greenhouse gas emissions



'We don't need your electricity. Electricity won't give us food... We need our forests to hunt and gather in. We don't want your dam.'

Kayapó woman  
to Brazilian official at Altamira, 1989

The world must know what is happening here, they must perceive how destroying forests and indigenous people destroys the entire world.

Bet Kamati Kayapó, Raoni Kayapó and Yakareti Juruna, protesting against Belo Monte dam, Brazil 2010



Dams are often built expressly to power large-scale industrialization of a region. Sarawak's dams will facilitate the industrialization of land belonging to the state's tribal peoples, although the tribes have not consented to this (see Penan box).

Brazil's Belo Monte dam on the Xingu river will provide cheap electricity for the mining and smelting industries in the region. Meanwhile Brazil's congress is debating whether to open up indigenous territories to large-scale mining, a move which is deeply opposed by many communities.

If built, the Belo Monte dam will be the third largest in the world. It will flood a large area of land, cause huge devastation to the rainforest and reduce fish stocks on which tribes such as the Kayapó, Arara, Juruna, Araweté, Xikrin, Asurini and Parakanã Indians depend.

Some studies indicate that hydropower can be more polluting than coal power plants, because of the greenhouse gases emitted by rotting vegetation in reservoirs.<sup>36</sup>

Electronorte, part of the Brazilian state owned electricity company Eletrobrás, built the Tucuruí dam in the 1980s to power the huge Carajás mining, smelting and development project. Tucuruí dam now contributes one sixth of Brazil's total greenhouse gas emissions, according to INPA, the National Institute for Amazonian Research.

The Tucuruí dam also displaced several tribes and destroyed the fish stocks of others. WWF calculates the fish catch fell by 60% after Tucuruí was completed.<sup>37</sup> Electronorte calls hydroelectric power production 'pollution-free.'<sup>38</sup>

Problems including low river flow, siltation in the reservoir and a changing climate, mean it is not unusual for hydroelectric dams to produce considerably less electricity than developers originally advertised, which casts further doubts on dams' 'green' credentials.<sup>39</sup>

The Enawene Nawe build dams of their own to catch fish when the rivers are highest. For most of the year, the water runs freely





Among the most marginalized and underrepresented peoples anywhere, tribal peoples are least able to raise concerns when projects go wrong or their rights are ignored and violated.

The governments of many countries, including most countries in Africa, do not recognize tribal and indigenous peoples as distinct. Without this recognition and the corollary protection in law, international dam companies (invited and supported by governments) are more easily able to bypass tribal peoples' rights and operate on their land with impunity.

Even when countries do have laws to protect tribal peoples, as is the case in much of South America, these are often poorly enforced (for example see Isolated tribes box).

The body of international instruments enshrining tribal peoples' rights beyond national laws is growing (for some of the most prominent instruments, see endnotes).<sup>40</sup> However most countries still refuse to ratify the only international law dedicated to tribal and indigenous peoples' rights, the International Labour Organization Convention 169.

Under sustained pressure from indigenous peoples and organizations including Survival International, many major financing institutions have developed their own

guidelines for dealing with indigenous peoples, including the World Bank and the African Development Bank. Several sets of international guidelines for private companies have also been developed (see endnotes)<sup>41</sup>, and the UN's special rapporteur on business and human rights has said that the duty of a company to respect indigenous peoples' rights exists independently of any government's duty to uphold those rights.

Drawing up rules and guidelines is only part of the process, ensuring compliance is quite another.

**'We are hindered from roaming our forests for game... Through the years government laws and policies have always outlined the Cordillera as a resource area for extractive industries... hydroelectric dams and other energy projects. We oppose these programs and policies because they threaten our very existence.'**

Cordillera Peoples Alliance

# Recommendations

- All hydroelectric dams on tribal peoples' land should be halted unless and until the tribes have given their free, prior and informed consent to the project.
- No new hydroelectric dams should be developed where they affect tribal peoples' territories unless and until the tribes' collective land ownership rights have been recognized and they have been fully and independently consulted, and have freely given their consent.
- In the case of isolated or uncontacted tribes, where consultation is not possible, there should be no development of hydroelectric dams on their territories.
- Where hydropower projects are designed to provide energy to industrial and large-scale agricultural projects, the tribes of the region must be fully consulted and have given their free, prior and informed consent to the industrialization programme before the hydroelectric dams are approved.
- Companies and financial investors must only become involved in a hydroelectric dam project if they are satisfied that the project enjoys the broad and prior consent of the tribal peoples it will affect and that their land rights have been recognized.



# References

- <sup>1</sup> World Commission on Dams (WCD), *Dams and Development*, 2000, p. xxxiv
- <sup>2</sup> WCD, *Dams and Development*, p. 9
- <sup>3</sup> For example see Briscoe, J *The Financing of Hydropower, Irrigation and Water Supply Infrastructure in Developing Countries*, 1998, p. 14-15, or WB Operations Evaluation Department, 'Bridging troubled waters' in *Procis*, no. 221, 2002, p.2
- <sup>4</sup> WCD, *Dams and Development*, p. 120
- <sup>5</sup> WCD, *Dams and Development*, p. 215
- <sup>6</sup> Imhof A and Lanza GR, 'Greenwashing Hydropower' in *World Watch*, Jan/Feb 2010
- <sup>7</sup> Survival, <http://www.survivalinternational.org/news/6079>
- <sup>8</sup> World Bank, *Water Resources Sector Strategy*, 2003  
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