

# Large Dams in the Americas: Is the Cure Worse than the Disease?

*Principal consequences for the environment and human rights and possible alternatives.*

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## **Executive Summary**

States in the Americas are increasingly pursuing large dams as a solution to meet growing demands for electricity and water, to advance economic development, and to reduce poverty. Currently there are more than 300 large dam projects in construction or under planning throughout the region. However, many governments are promoting large dams without integral environmental and social assessments, without procedures that guarantee effective public participation, and in the absence of water and energy policies that respect domestic and international law. Consequently, the inadequate implementation of these projects is causing serious impacts to the environment and the human rights of affected people and communities. This situation has reached a critical point and, if concrete measures are not taken, such impacts could become irreversible and worsen the living conditions of those affected.

*Large Dams in the Americas: Is the Cure Worse than the Disease?*, analyzes the issue of large dams from the perspective of international environmental and human rights law. The report is a collaborative effort between AIDA and multiple non-governmental and grassroots organizations that represent people affected by dams throughout the hemisphere. Our objective with this report is to demonstrate the link between grave environmental impacts and the human rights violations that large dams can cause and to promote a greater understanding of this situation. Through five case studies representing distinct regions in Latin America, including México, Central American, the Andean Region, Brazil and the Southern Cone, we describe how States and other involved actors are consistently causing serious environmental harm and violating multiple international norms and standards. The most significant impacts include the destruction of strategic ecosystems, the forced displacement of communities, the loss of food sources and livelihoods, and the lack of access to information and public participation, among others.

The manner in which governments are implementing large dams could increase the social costs associated with these projects by aggravating the effects of poverty. Such costs are disproportionately felt by traditionally disadvantaged communities, such as indigenous, afro-descendent, and small farming communities, and particularly women and children in situations of vulnerability. These negative impacts can increase the overall costs of large dams, thereby counteracting their economic benefits. However, effective alternatives and international standards exist that have been developed specifically to prevent these impacts and which States should apply accordingly. Through the respect of human rights and the compliance with these standards, governments can avoid environmental damages and worsening living conditions while promoting true development in the region.

### **Principle environmental impacts from large dams**

The environmental damage that large dams cause in rivers, watersheds and adjacent ecosystems has been widely documented. According to the World Commission on Dams

(WCD), “[l]arge dams generally have a range of extensive impacts on rivers, watersheds and aquatic ecosystems—these impacts are more negative than positive and, in many cases, have led to irreversible loss of species and ecosystems.”<sup>1</sup> In addition, the available mitigation methods have not been sufficient to counteract these impacts. Through the analysis of the five case studies and of scientific studies and experience throughout the world, this report identifies some of the most common impacts from large dams:

- Decreases in the water quality and sanitation upstream and downstream from the artificial modification of river systems. Blocking the natural flow of a river can cause increased sedimentation and the accumulation of nutrients and organisms that provoke algae blooms, thereby covering the surface of a reservoir and rendering the water unsuitable for domestic or industrial consumption. Large reservoirs can also accumulate heavy metal pollution and toxic bacteria that can threaten public health.
- Degradation of aquatic ecosystems. Large dams are currently the principal physical cause of river system degradation, and at least 400,000 km<sup>2</sup> of the most diverse river ecosystems in the world have been lost due to flooding cause by reservoirs<sup>2</sup>.
- Loss of biodiversity. Impacts on local biodiversity occur frequently in large dams projects, including severe harm to species of fresh-water fish. As many of these species need a flowing and unobstructed source of fresh water to procreate and lay eggs, large dams can prevent them from reproducing.
- Climate change. Large tropic reservoirs cause climate change impacts due to the high levels of greenhouse gas emissions from decomposing organic matter. In addition, climate change could affect the security and the productivity of dams due to drastic changes in rainfall or droughts.
- Seismic impacts. Large dams can produce seismic impacts from the great pressure that their reservoirs cause on the land, which can lubricate tectonic faults and reduce the friction between subterranean rock surfaces.

### **Violations of international environmental and human rights law**

In addition, the five case studies and other experiences with large dams demonstrate how environmental harms can translate into severe and repeated human rights violations of the affected people and communities. The human rights implicated in these projects are enshrined in multiple international legal instruments, including the United Nations and the Inter-American Systems. These projects also ignore principles of international environmental law and diverse international standards regarding the proper implementation of dams and other large development projects. The report’s analysis reveals the following situations that represent violations of international law:

*Health risks, loss of traditional food sources and livelihoods:* In cases of large dam construction, many groups have documented the destruction of strategic ecosystems that are essential for human health and livelihoods, including forests, wetlands and fertile, cultivable land. These impacts can cause the accumulation of toxic sediments, such as heavy metals, in reservoirs

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<sup>1</sup> WORLD COMMISSION ON DAMS, DAMS AND DEVELOPMENT: A NEW FRAMEWORK FOR DECISION-MAKING, at XXXI (2000), available at: <http://www.unep.org/dams/WCD/report.asp>.

<sup>2</sup> International Rivers, *Damming Statistics* (2009) available at: <http://internationalrivers.org/en/node/479>.

and groundwater, the increase in vector and water borne illnesses, irreversible damage to the reproductive and migration cycles of fish, and the reduction of available water for irrigation. Thus, large dams not only have a direct impact on the environment, but also affect the quality of life, health and access to traditional food sources and livelihoods.

*Forced displacements:* A severe consequence of the construction of large dams is the forced displacement of people and whole communities, seriously affecting their human rights, especially the rights to freedom of movement, property, housing and just compensation. These displacements continue without the implementation of safeguards necessary to avoid such consequences, including conducting prior impact assessments, effective and timely public participation and consultation, and adequate plans for indemnification and compensation.

*Comprehensive Environmental and Social Impact Assessments:* Another significant factor associated with the inadequate implementation of large dam projects is the lack of environmental and social impact assessments (EIA), which many international norms and standards require. Comprehensive EIAs form part of the principles of international environmental law and are contained in treaties such as the Convention on Biodiversity. These assessments are crucial for identifying, analyzing and subsequently reducing or eliminating a project's potential environmental harms, and consequently, their associated human rights impacts. EIAs are also closely linked with the right to access of information and the obligation to universally guarantee all human rights.

*Public consultation and participation:* An essential requirement for the development of large dam projects in the implementation of prior and effective consultation and public participation procedures with affected communities, populations, and other stakeholders. These procedures are required by international law and standards for the purpose of guaranteeing human rights of those affected, particularly the rights to public participation and access to information. In addition, ensuring public consultation and participation is a fundamental requirement for protecting the right to a healthy environment and other human rights affected by environmental degradation. Nonetheless, governments seldom adopt measures that guarantee an adequate and real consultation and public participation of affected communities.

*Access to information:* The free, adequate and timely access to public information is key to guarantee the protection of the environment and the participation of affected people in the planning and approval phases of dams. Without such information, a real participation would not be possible, as interested persons must be aware of the risks and the consequences associated with a dam to be able to protect effectively their rights. In addition to being a human right, the access to information in large dam projects is also required in multiple international standards. Unfortunately, States seldom provide effective, public procedures to access information regarding existing licenses, concessions and evaluations, or other information relevant to the project, nor do they provide the reasons for which these evaluations do not exist.

*Indigenous and tribal peoples' rights:* Frequently the construction of large dams implies harm to indigenous and afro-descendent communities. Specific international laws and standards exist to protect these peoples and the special cultural relation they enjoy with their traditional territories, including the right to be consulted and to free and informed consent in projects that could affect them. Despite the existence of these rights, repeatedly governments do not provide

the possibility for an adequate consultation or participation. Therefore, it is crucial to remind States of their obligation to respect the international rights of these communities when implementing large dam projects.

*Criminalization of social protest:* In some cases of large dams, leaders and communities have been harassed when attempting to defend their rights. This harassment can include bringing baseless criminal charges, the disproportionate use of force in pacific protests, and threats and attacks against community leaders and organizers. Various international legal bodies have examined these events in cases of large dams and other contexts, and have declared them to be criminalization of public protest and contrary to international human rights law. The increase in the number of these infrastructure projects that fail to comply with international standards presents the potential to aggravate this situation, given the growing number of new affected communities who will also seek to defend their rights.

### **Case Studies**

We have examined five emblematic case studies from diverse regions of Latin America to demonstrate the severe environmental and human rights consequences most commonly associated with large dam projects. The cases that we analyze in detail are the following:

1. *Yacyretá (Argentina and Paraguay)*, is a bi-national project implemented in the 80s, whose environmental and social damages have been evident since beginning construction and have been widely documented by the World Bank and the Inter-American Development Bank. Despite having seriously affected thousands of people and although compensation plans have yet to be implemented, both governments plan to raise the level of the dam, which could provoke new negative impacts.
2. *Madeira River (between Brazil and Bolivia)*, is another project with the potential for serious bi-national impacts, and which incorporates various hydroelectric dams potentially affecting thousands of people from indigenous and small farming communities in the area. This project forms part of the Regional Initiative for Integration in South America (IIRSA).
3. *Baba (Ecuador)*, located in the Northern Andes region, is a multipurpose project involving the construction of a large dam to transport waters from the Baba River to the Daule-Peripla hydroelectric dam, currently in operation but experiencing productivity problems. The Constitutional Court of Ecuador ordered the revision of the Environmental Impact Study associated with the project due to serious errors and the lack of appropriate information and consultation with affected communities. Despite the failure to comply with the Court order to revise the studies, construction on the projects continues advancing.
4. *Chan-75 (Panama)*, is a hydroelectric project being developed in the traditional territory of indigenous Ngöbe communities without properly consulting or informing these groups. In addition, the project will affect the La Amistad Bi-national Park, an area which UNESCO has declared as a World Heritage Site thanks to its high levels of biodiversity.

5. *La Parota (México)*, exemplifies the potential problems in public consultation procedures in large dam project, as there was effectively no public participation for the approximately 25,000 affected people from indigenous and small farming communities. The project also presented grave errors in its environmental impact study, which ignored important risks such as possible seismic impacts. Due to public pressure and successful lawsuits that exposed problems with the consultation procedure, the Mexican government has suspended indefinitely construction on the project. Several other lawsuits have also been brought over the past four years that allege irregularities in the approval process of the project, and which local courts have yet to resolve.

### **Conclusions and recommendations for possible alternatives**

While the development of large dams in Latin America tends to ignore international law and standards that could protect the human rights of affected people and conserve the environment, this is not an inevitable consequence of the construction of dams or the development of the energy potential in the region. States, corporations, financial institutions and other involved actors can avoid these situations if they adequately comply with the international environmental and human rights law examined in this report. By respecting the applicable standards, such as the recommendations of the World Commission on Dams, governments can comprehensively evaluate all costs and benefits associated with a project, be they social, environmental or economic. This analysis will allow States to determine if the high costs for affected communities and the environment outweigh the benefits of large dams and hydroelectric projects. In this way, governments can also consider possible alternatives for supplying the internal demand for water and energy and thus evaluate if large dams are the appropriate solution for their energy needs. In addition, authorities can use this analysis to ensure that projects are actually beneficial for the country and society in the short and long term.

Thankfully, large dams are not necessarily the only option available for meeting the demand for energy, as other alternatives exist than can produce cleaner and cheaper energy. These options and how they are reflected in public policies, depend on the political will of each State, as well as that of the international agencies, corporations and other actors involved. Some of these alternatives include abandoning the general (erroneous) belief that it is necessary to increase the consumption of energy to promote economic growth. Examples which dispel this fallacy include countries such as Brazil and the United States, which have shown that they can grow economically while promoting energy efficiency.

Among the multiple options that exist for States are the creation of incentives to promote energy efficiency in homes and the business sectors, and also the use of truly renewable energies like solar, wind, geothermal and even small hydropower. In Latin America, many countries are successfully implementing energy efficiency programs that could be replicated elsewhere in the region. By using these alternatives, governments can seek truly sustainable development while respecting the human rights of affected people and conserving the environment for future generations.

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