

LARGE DAMS ARE NOT CLEAN OR SUSTAINABLE ENERGY SOURCES

GOVERNMENTS, INTERNATIONAL ORGANIZATIONS AND FINANCIAL INSTITUTIONS MUST IMPLEMENT REAL SOLUTIONS TO CLIMATE CHANGE

According to the World Commission on Dams, fifty thousand large dams had been built by the year 2000, disrupting more than 60 percent of Earth's rivers.¹ In Latin America alone, 973 hydroelectric dams of different sizes are operating, and roughly 1,600 more are in planning or construction phases; as many as 254 of these are expected to be built in the Amazon Basin.² One of the major arguments for the current, unprecedented boom of dam construction around the world is that large hydro projects provide a "clean energy" solution to the climate crisis.

On the contrary, scientific evidence reveals that large dams:

1. Emit greenhouse gases, including methane, especially in tropical regions;
2. Demonstrate high vulnerability to extreme droughts and flooding that are increasingly common in a changing climate;
3. Cause severe and irreparable environmental damage, especially to freshwater ecosystems and biodiversity, with consequences for vital ecosystem services at the local, regional and global levels, including regulation of the climate system;
4. Frequently involve human rights violations, such as lack of free, prior and informed consultation and consent with indigenous peoples and other traditional communities, loss of territories and livelihoods (with especially negative impacts on women, children, elderly citizens and others in vulnerable situations) as well as exploitative labor conditions among dam construction workers;
5. Incur cost overruns that average twice the initial budgets, causing major economic difficulties in developing countries, including diversion of scarce funds from investments that could be made in truly sustainable energy sources;
6. Take a long time to become operational, including frequent schedule overruns, making them an inefficient solution to the urgent energy and climate crises that they are intended to tackle;
7. Cause significant social, environmental and economic losses rarely considered in the projects' official budgets, impoverishing local communities and gravely conflicting with their primary advertised objectives of poverty alleviation and energy for the poor.

Nevertheless, hydroelectric dams continue to be promoted as clean and sustainable energy sources to meet increasing energy demand.³

TODAY there are cleaner, more efficient, less costly and faster alternatives to respond simultaneously to legitimate energy needs and the climate crisis. Therefore we **DEMAND** that Governments, international organizations and financial institutions immediately:

1. **Stop** considering large dams as clean energy sources, given the proved negative impacts mentioned above.

2. **Implement sustainable energy solutions** that prioritize incentives for energy efficiency and decentralized renewables such as solar, wind, biomass and geothermal;
3. **Avoid** incentives for large dams from international institutions and from UNFCCC mechanisms, such as the Clean Development Mechanism or the Green Climate Fund;
4. **Incorporate** in the planning and licensing of new proposed hydroelectric projects:
 - a. evaluation of the potential for greenhouse gas emissions, including methane produced by reservoirs;
 - b. rigorous analysis of vulnerability to severe droughts and flooding, given scenarios of climate change;
 - c. lessons learned regarding the true economic costs and schedule overruns of large dams;
 - d. comprehensive evaluation of social and environmental impacts and risks, including cumulative impacts of dam cascades and related infrastructure projects, making use of planning instruments such as Strategic Environmental Assessments at the basin level;
 - e. full respect for the rights of indigenous peoples and other local communities, including territorial rights and the right to free, prior and informed consultation and consent;
5. **Adopt** inclusive and transparent decision-making processes, taking into account the whole spectrum of energy alternatives, identifying options that are best suited to meet the needs of societies and communities, while avoiding harmful and unnecessary projects.

Signed:

Argentina

Alianza Sistema de Humedales Paraguay Paraná
 Asociación Amigos de los Parques Nacionales (AAPN)
 Foro Ciudadano de Participación por la Justicia y los Derechos Humanos (FORO)
 Fundación M'Biguá, Ciudadanía y Justicia Ambiental
 Grupo Ecologista Cuña Pirú
 Los Verdes-Foro de Ecología Política

Austrália

Werribee Riverkeeper

Bangladesh

Blue Planet Initiative (BPI)

Bolivia

Fundación GaiaPacha
 Red Jurídica Amazónica (RAMA)

Brazil

Articulação dos Povos Indígenas do Brasil – APIB
 Coordenação das Organizações Indígenas da Amazônia Brasileira – COIAB

Associação Indígena Pahyhy'p (Munduruku People of the Middle Tapajós)
 Movimento Munduruku Iperreg Ayu
 APREC - Ecossistemas Costeiros
 Apremavi - Associação de Preservação do Meio Ambiente e da Vida
 Associação ARUANA
 Coletivo de Mulheres de Altamira
 Conselho Indigenista Missionário - Cimi
 Ecologia E Ação (ECOA)
 Federação de Órgãos para Assistência Social e Educacional (FASE)
 Fórum Mudanças Climáticas e Justiça Social
 Frente por uma Nova Política Energética para o Brasil
 Greenpeace Brasil
 Grupo Carta de Belém
 Instituto de Estudos Socio-Econômicos (INESC)
 Instituto Madeira Vivo (IMV)
 Kanindé - Associação de Defesa Etnoambiental
 Movimento de Mulheres Campo e Cidade Regional Transamazônica e Xingu
 Movimento Ficha Verde
 Movimento Negro de Altamira
 Movimento Tapajós Vivo
 Movimento Xingu Vivo Para Sempre
 Uma Gotinha no Oceano

Chile

Chile Ambiente, Chile
Coalición Cuidana Aisén Reserva de Vida
Comisión Justicia y Paz
Consejo de Defensa de la Patagonia
Corporación Privada para el Desarrollo de Aysén (CODESA)
FIMA
Fiscalía del Medio Ambiente (FIMA)
Fundación Melimoyu
Funcación Sociedades Sustentables
Fundación Terram
Futaleufú Riverkeeper
Hora Constituyente
Maule Itata Coastkeeper
Programa Chile Sustentable

China

Beiyun Waterkeeper, China

Colombia

Asociación Ambiente y Sociedad
Bogotá Riverkeeper
Centro de Estudios para la Justicia Social "Tierra Digna"
Fundación Río Urbano
Instituto Latinoamericano para una Sociedad y un Derecho Alternativos (ILSA),
Río Cravo Sur Waterkeeper
Río Meta Waterkeeper

Costa Rica

Asociación de Ecología Social (AESO)
Asociación Palmareña para la Recuperación del Ambiente (APRA)
Asociación Proyectos Alternativos para Desarrollo Social (PROAL)
Asociación Regional Centroamericana para el Agua y el Ambiente (ARCA)
Bloque Verde
Cooperativa de Talamanca Sostenible
Federación Ecologista de Costa Rica (FECON)
Finca Amalur
Oilwatch Mesoamérica
Unión Norte por la Vida
Justicia para la Naturaleza

Dominican Republic

Instituto de Abogados para la Protección del Medio Ambiente
Ozama Waterkeeper

Ecuador

Asociación Guayllabamba Waterkeeper
Centro de Documentación en Derechos Humanos
"Segundo Montes Mozo S.J." (CSMM)
Coalición por Justicia Climática
Comisión Ecuménica de Derechos Humanos (CEDHU)
Iniciativa de Estero Salado Waterkeeper
La Comisión Ecuménica de Derechos Humanos (CEDHU)
Plataforma Interamericana de Derechos Humanos, Democracia y Desarrollo (PIDHDD Regional)

France

Thérapie et de Relation d'aide par la Médiation Animale (Fitram)

Guatemala

Asociación Ceiba
Colectivo MadreSelva
Consejo de Pueblos de Tezulutlán
Alianza de Derecho Ambiental y Agua (ADA2)
Río Motagua Waterkeeper

Honduras

Asociación de Juntas Administradoras de Agua, de San Francisco y de El Porvenir
Instituto de Derecho Ambiental de Honduras
OFRANEH

India

Centre for Organisation Research & Education (CORE)

Malaysia

SAVE Sarawak Rivers Network
School of Acting Justly, Loving Tenderly, Treading Humbly (SALT)
Suara Rakyat Malaysia (SUARAM)
Persatuan Belia Perubahan Iklim,

Mexico

Bahía de los Ángeles Coastkeeper
Abogadas y Abogados para la Justicia y los Derechos Humanos, A. C.
Acción Colectiva Socio Ambiental, A.C.
Alianza de Comunidades y Usuarios del Río Bobos Nautla
Amigos del Río San Rodrigo
Asamblea Veracruzana de Iniciativas y Defensa Ambiental (LAVIDA)
Bios Iguana
Bios Iguana AC.

Centro de Derechos Humanos de la Montaña -
"Tlachinollan"
Centro Mexicano de Derecho Ambiental, A.C.
(CEMDA)
Colectivo Defensa Verde Naturaleza para Siempre,
Consejo de Ejidos y Comunidades Opositores a la
Presa La Parota (CECOP)
Consejo de Pueblos Unidos en Defensa del Río
Verde
Consejo Tiyat Tlali
Fundar, Centro de Análisis e Investigación, A.C.
Instituto Mexicano Para el Desarrollo Comunitario,
A.C. (IMDEC)
JASS, Asociadas por lo Justo
LaVida
Movimiento Mexicano de Afectados por las Presas
(MAPDER)
Movimiento Mexicano de Afectados por las
Represas (MAPDER)
Otros Mundos AC
Promoción y Desarrollo Social A.C.,
Pueblos Unidos de la Cuenca Antigua por los Ríos
Libres,
Servicios para una Educación Alternativa A.C.
Unitierra en Puebla
Makxtum Kgalhaw Chuchutsipi

Nicaragua

Centro Humboldt
Fundación Popol Na,

Nigeria

Centre for Health Rights Advocacy, Nigeria

Panamá

Alianza para el Desarrollo Integral Unidos por
Panamá
Alianza para la Conservación y el Desarrollo
(ACD)
Amigos del Parque Internacional La Amistad
(AMIPIA),
Asociación Agro Ecoturística La Amistad
(ASAELA)
Asociación Agroecológica Macho de Monte
Asociación Ambientalista de Chiriquí
Asociación Conservación de la Biosfera
Asociación de Productores Agroecologistas La
Amistad (ADPAELA)
Asociación de Productores de Cultivos Exportables
(APCE)
Asociación de Productores de Renacimiento
Asociación Ecologista de Productores Orgánicos de
Rovira,

Centro de Incidencia Ambiental de Panamá (CIAM)
Centro Misionero de la Concepción
Colectivo Voces Ecológicas (COVEC),
Comité por la Defensa del Río Gariché y sus
Afluentes
Comité Pro Defensa del Recurso Hídrico y
Biodiversidad de Renacimiento
Fundación para el Desarrollo Integral, Comunitario
y Conservación de los Ecosistemas
Grupo Conservacionista de Santa Rita
Grupo Ecologista de Renacimiento para la
Protección del PILA
Grupo Orgánico de Agricultores Cerro Punteños
Red Ecologica, Social y Agropecuaria de Veragias
(RESAVE)

Peru

Amazónicos por la Amazonía (AMPA)
Asociación Pro Derechos Humanos (APRODEH)
Central Ashaninka del Rio Ene (CARE)
Centro de Desarrollo Étnico (CEDET)
Centro de Investigación y Promoción Rural-Urbana
(CIPRU)
Centro de Promoción y Defensa de Derechos
Humanos Arequipa (CEPRODEH)
Centro para la Sostenibilidad Ambiental de la
Universidad Peruana Cayetano Heredia (CSA-
UPCH)
Comisión de Derechos Humanos de Ica
Coordinadora Nacional de Derechos Humanos
Derecho Ambiente y Recursos Naturales - DAR
Derechos Humanos y Medio Ambiente
Fórum Solidaridad Perú
GRUFIDES
Grupo de Formación e Intervención para el
Desarrollo Sostenible (GRUFIDES)
Ingeniería Sin Fronteras
Movimiento Ciudadano frente al Cambio Climático
- MOCICC
Plataforma Interinstitucional Celendina
Pronaturaleza-Fundación Peruana para la
Conservación de la Naturaleza
Río Mapacho Waterkeeper
ACCP
Sociedad Peruana de Derecho Ambiental (SPDA)
Urku Estudios Amazónicos
Fundación Ecuménica para el Desarrollo y la Paz
(FEDEPAZ)

Philippines

Freedom from Debt Coalition (FDC)

Portugal

Quercus-Associação Nacional de Conservação da Natureza, Portugal

Waterkeeper Alliance

Spain

Asociación Catalana para el Agua y el Ambiente (ASCA)

Asociación para la Justicia Ambiental

Centro de Documentación y Solidaridad con America Latina y Africa

Coordinadora de Afectados por Embalses y Trasmases (COAGRET)

URA Nueva Cultura del Agua en Navarra

Switzerland

Freshwater Action Network (FAN) Geneve

Bruno Manser Fund

Turkey

Doga Dernegi, Turquía

Ukraine

EcoClub Ukraine,

United Kingdom

Bianca Jagger Human Rights Foundation (BJHRF)

United States

Amazon Watch

Apalachicola Riverkeeper

Cahaba Riverkeeper

Center for International Environmental Law

Friends of the Earth US

Indigenous Environmental Network

Milwaukee Riverkeeper

Save The Colorado,

South Riverkeeper

Spokane Riverkeeper

Poudre Waterkeeper

Regional Organizations & Networks

Red Centroamericana de Acción del Agua (FANCA), Regional

Red Latinoamericana contra represas y por los ríos, sus comunidades y el agua – REDLAR

Asociación Interamericana para la Defensa del Ambiente (AIDA), Regional

International Organizations & Networks

Coalición Internacional para el Hábitat, Oficina para América Latina

International Rivers

Oilwatch

Survival International

Why are dams not clean energy sources and why are alternatives needed?

1. Because large dams contribute to climate change

Construction and operation of large dams causes emissions of CO₂ and, especially in tropical regions, they emit methane from the large amounts of decaying organic matter retained in flooded reservoirs. The greenhouse gas effect of methane is 20 to 40 times more powerful than that of CO₂.⁴

2. Because they make adaptation more difficult

Dams are not flexible enough to endure climate change. On the contrary, they are inefficient in droughts and unsafe in floods, which aggravates the risk of disasters.⁵ Moreover, they threaten entire hydrologic systems and destroy key ecosystems and fisheries, thus compromising the ability of communities to adapt to climate change.

3. Because of the cost overruns, delays and economic damage that they entail

Data show that the majority of dams that have been built cost 96% more than their initial budgets. This expense has been linked to the increase of public debt and to economic crisis in several countries.⁶

4. Because of the long time it takes them to become operational, which makes them an inferior solution to the urgent energy crisis that they are intended to tackle

Construction of large dams takes approximately 8.6 years; and more time is needed to begin operations. Experts have documented that eight out of every ten dams exceed their initial construction-time estimates by more than 44%.⁷ They last, on average, only 50 years.⁸ Dams are not an efficient solution to urgent energy demands.

5. Because they cause great and irreparable environmental damage

Large dams cause environmental damages to rivers, hydrologic basins and surrounding ecosystems, including: the worsening of water quality in rivers; the degradation of aquatic ecosystems and the disappearance of many riparian ecosystems; and serious harms to biodiversity, including the extinction of species.⁹

6. Because their inadequate implementation generates human rights violations and impoverishment of communities

The human rights of the people affected by large dams have been systematically ignored. Large dams have led to forced displacement,¹⁰ health problems, loss of food sources and traditional ways of life, community impoverishment,¹¹ and criminalization of social protest. Permitting processes are generally flawed: permits are issued without comprehensive environmental or social impact assessments, and without adequate public participation and consultation, including free, prior, informed consent processes.

For more information:

AIDA on dams: <http://www.aida-americas.org/es/project/grandesrepresas>

International Rivers: <http://www.internationalrivers.org/>

Report: http://www.aida-americas.org/sites/default/files/InformeAIDA_GrandesRepreseas_BajaRes_1.pdf

Blogs: [Desmantelando el mito de las represas](#), [Grandes represas elefantes blancos](#)

Notes

¹ World Commission on Dams Report. http://www.internationalrivers.org/files/attached-files/world_commission_on_dams_final_report.pdf

² State of the World's Rivers. <http://www.internationalrivers.org/worldsrivers/>

³ For example, see: Directions for the World Bank Group's Energy Sector. <http://www.worldbank.org/content/dam/Worldbank/document/SDN/energy-2013-0281-2.pdf>

⁴ Fearnside, Philip. 2007. *Why hydropower is not clean energy*. Scitizen, Paris, França. http://www.scitizen.com/future-energies/why-hydropower-is-not-clean-energy_a-14-298.html Fearnside, P.M. & S. Pueyo. 2012. Underestimating greenhouse-gas emissions from tropical dams. *Nature Climate Change* 2(6): pp. 382–384 Otros textos de P. Fearnside: <http://philip.inpa.gov.br> International Rivers 2006. *Fizzy Science: Loosening the Hydro Industry's Grip on Reservoir Greenhouse Gas Emissions Research*, International Rivers, 2006 <http://www.internationalrivers.org/resources/fizzy-science-loosening-the-hydro-industry-s-grip-on-reservoir-greenhouse-gas-emissions>

⁵ IPCC 2013 Supplement to the 2006 Guidelines for National GHG Inventories: Wetlands <http://www.ipcc-nggip.iges.or.jp/public/wetlands/> International Rivers, 2013. *Wrong Climate for Big Dams: Destroying Rivers Will Worsen the Climate Crisis* <http://www.internationalrivers.org/resources/wrong-climate-for-big-dams-fact-sheet-3373>

⁶ Ansar, Atif, Bent Flyvbjerg, Alexander Budzier and Daniel Lunn, Should We Build More Large Dams? The Actual Costs of Hydropower Megaproject Development (March 10, 2014). *Energy Policy*, March 2014, pp.1-14. Leslie, J. *Large Dams just aren't Worth the Cost*, OP-ED, New York Times, 8/22/2014, <http://www.nytimes.com/2014/08/24/opinion/sunday/large-dams-just-arent-worth-the-cost.html?emc=eta1&r=1> Furthermore, the Brazilian Federal Court of Accountability carried out a study of the energy projects developed between 2005 and 2012, and it concluded that almost 80% of dams will not comply with their schedule. <http://oglobo.globo.com/economia/tcu-constata-atrasos-nas-obras-de-energia-leiloadas-pelo-governo-de-2005-2012-13822128>

⁷ Ansar, A., et al.

⁸ Friends of the Earth, et al. *Dam Removal Success Stories*. (1999).

<http://www.michigandnr.com/publications/pdfs/fishing/dams/SuccessStoriesReport.pdf>

http://www.teachengineering.org/view_lesson.php?url=collection/cub/_lessons/cub_dams/cub_dams_lesson08.xml

⁹ AIDA. *Grandes Represas en América: ¿Peor el remedio que la enfermedad?*

http://www.aida-americas.org/sites/default/files/InformeAIDA_GrandesRepresas_BajaRes_1.pdf (Spanish) Little, Paul 2013. *Megaproyectos en la Amazonia - Un análisis geopolítico y socioambiental con propuestas de mejor gobierno para la Amazonía*, RAMA/ARA/DAR

<http://raisg.socioambiental.org/system/files/Megaproyectos%20Amazon%C3%ADa%20Paul%20Little.pdf>

Fearnside, Philip M. 2014. *Análisis de los Principales Proyectos Hidro-Energéticos en la Región Amazónica*. DAR, CLAES http://philip.inpa.gov.br/publ_livres/Preprints/2013/Fearnside-ANÁLISIS-Hidroelectricas-Preprint.pdf; - Nobre, Antônio

2014. *O Futuro Climático da Amazônia*, ARA/INPE, <http://www.ccst.inpe.br/wp-content/uploads/2014/10/Futuro-Climatico-da-Amazonia.pdf>

¹⁰ Oliver-Smith, Anthony. 2010 *Defying Displacement: Grassroots Resistance and the Critique of Development*, University of Texas Press. <http://utpress.utexas.edu/index.php/books/olidef> According to the World Commission on Dams, between 40 and 80 million people have been displaced due to large dams—approximately one out of every 100 people alive today.

¹¹ Thayer Scudder, California Institute of Technology, promoted construction of dams for 58 years, believing that they were an option for the relief of poverty. He publicly changed his mind when he was 84 years old, declaring that they are not worth their cost and that many of the dams currently under construction will have disastrous consequences. Leslie, Jacques *Large Dams just aren't Worth the Cost*, New York Times, 8/22/2014,

<http://www.nytimes.com/2014/08/24/opinion/sunday/large-dams-just-arent-worth-the-cost.html?emc=eta1&r=3>

Bosshard, P. 2014: Ten things you should know about Dams, http://www.huffingtonpost.com/peter-bosshard/dams-environmental-issues_b_5399264.html

Millikan, Brent 2014. "The Amazon: Dirty dams, Dirty Politics and the Myth of Clean Energy," *Tipiti: Journal of the Society for the Anthropology of Lowland South America*: Vol. 12: Issue 2, pp. 134-138 <http://digitalcommons.trinity.edu/cgi/viewcontent.cgi?article=1189&context=tipiti>