

## The River Educator's Toolkit

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*June 2010*

International Rivers has been working to protect the world's rivers, and the rights of those that depend on them, for over 25 years. During this period of research, policy work, and capacity-building, we have developed a number of outreach materials based on our areas of expertise that are suitable for students and the general public.

This educator's kit synthesizes many of the classroom-friendly materials we have on major rivers and projects around the world, as well as lesson plans created by university curriculum developers. The goal of this kit is to provide ideas and resources for teachers and curriculum developers interested in teaching river ecology and the interaction of natural and human systems. We hope that by providing a more comprehensive information bank for educators and curriculum developers, teachers can engage their students in a life-long process of learning and curiosity around rivers, water, and energy.

### Contents

- The Three Gorges Dam (China): World's Largest Dam
- The Belo Monte Dam (Brazil): Striking at the Heart of the Amazon
- The Mekong River (Laos, Thailand, Cambodia, Vietnam): Lifeline of Southeast Asia
- The Gibe 3 Dam (Ethiopia): A People Divided

Each section contains a list of suggested background materials, videos and photos to share with students, where to look for further information, news articles, and some pre-made lesson plans.

The materials in this kit are generally suitable for ages 12 and up. For more age-specific lesson plans, please see: [www.internationalrivers.org/en/node/3750](http://www.internationalrivers.org/en/node/3750).



Contest winners from River of Words, [www.riverofwords.org](http://www.riverofwords.org)

*Was this toolkit useful?*

If you have any feedback or questions regarding this toolkit, or if you would like to receive future announcements regarding river-related education materials, please email Katy at [katy@internationalrivers.org](mailto:katy@internationalrivers.org).

## Three Gorges Dam: World's Largest Dam



The Three Gorges Dam is the world's largest hydropower project and most notorious dam. It sets records for size of project and the number of people displaced, and it is currently host to a number of environmental and health problems. A lesson on the Three Gorges Dam provides valuable insight for students into the costs of large dam projects, including issues of health, cultural loss, and endangered species.

### Background

- Overview of China's rivers:  
<http://www.internationalrivers.org/en/node/336>
- Overview of the Three Gorges Dam:  
<http://www.internationalrivers.org/en/node/356>

### Overview of the Issues

- International Rivers' latest fact sheet, "China's Three Gorges Dam: A Model of the Past," October 2009:  
[http://www.internationalrivers.org/files/3Gorges\\_FINAL.pdf](http://www.internationalrivers.org/files/3Gorges_FINAL.pdf)

### Multimedia

- *The New York Times* video about the plight of those displaced by the Three Gorges Dam, "Living with the Three Gorges Dam":  
[http://www.nytimes.com/interactive/2007/11/19/world/asia/choking\\_on\\_growth\\_4.html#story3](http://www.nytimes.com/interactive/2007/11/19/world/asia/choking_on_growth_4.html#story3)
- See the feature film *Up the Yangtze*, a true story about how two youths and their families were impacted by the Three Gorges Dam:  
<http://www.uptheyangtze.com/>
- Three Gorges picture album on *Flickr* courtesy of International Rivers:  
<http://www.flickr.com/photos/internationalrivers/sets/72157621781947702/>
- More photographs of the Three Gorges Dam:  
<http://www.internationalrivers.org/en/image/tid/111>
- Map of hydropower projects on the Jinsha River:  
<http://www.internationalrivers.org/en/node/3157>
- Check out the Three Gorges Dam on Google Earth:  
<http://www.internationalrivers.org/en/node/4292>
- *PBS* interactive map showing China's pressing water issues and how rivers and dams contribute to China's water issues:  
<http://www.pbs.org/teachers/connect/resources/867/preview/>
- View a slideshow on art inspired by the project, "Three Gorges Dam: Through the Lens of the Artist":  
<http://www.internationalrivers.org/en/node/4791>

### Current Events

- *New York Times* article, “Chinese Dam Projects Criticized for Their Human Cost” by Jim Yardley, November 19, 2007:  
<http://www.internationalrivers.org/en/node/2758>
- *United Press International* article, “No Fanfare for China’s Three Gorges Dam,” November 3, 2009:  
[http://www.upi.com/Science\\_News/Resource-Wars/2009/11/03/No-fanfare-for-Chinas-Three-Gorges-Dam/UPI-16151257283500/](http://www.upi.com/Science_News/Resource-Wars/2009/11/03/No-fanfare-for-Chinas-Three-Gorges-Dam/UPI-16151257283500/)
- *China Daily* article, “‘Grim situation’ at Three Gorges Dam,” May 24, 2010:  
[http://www.chinadaily.com.cn/china/2010-05/24/content\\_9882469.htm](http://www.chinadaily.com.cn/china/2010-05/24/content_9882469.htm)

### Go in Depth

- International Rivers’ report, “Human Rights Dammed Off at Three Gorges,” January 2003:  
<http://www.internationalrivers.org/files/3gcolor.pdf>
- Overview of rivers as a biome and human impacts by the California Academy of Sciences:  
<http://www.calacademy.org/science/biomes/rivers/>

### Lesson Plans

- *National Geographic* — “Rivers: Lifelines of the Land,” for grades 6-8. Introduces students to river ecology and addresses the societal and environmental impacts associated with dams and their construction:  
<http://www.nationalgeographic.com/xpeditions/lessons/14/g68/tgrivers.html>
- *Discovery Channel* — “The Biggest Dam in the World,” for grades 6-8:  
<http://school.discoveryeducation.com/lessonplans/programs/threegorges/>
- UNC School of Education — “Modern China: The Dam Debate” for grades 6-8:  
<http://www.learnnc.org/lp/pages/4456>
- *Discovery Channel* — “Asia’s Expansion: Treasures and Travels” for grades 9-12:  
<http://school.discoveryeducation.com/lessonplans/programs/asiaexpansion/>
- *PBS* — “China From the Inside” lesson plan for grades 9-12:  
<http://www.pbs.org/kqed/chinainside/edlesson2.html>
- *Primary Source* has a page called “The Yangtze River and the Three Gorges Dam: A Bibliography of Resources in the Primary Source Library.” This includes further resources for educators, students, teacher-created curriculum units, videos, and websites:  
<http://www.primarysource.org/bibliographies-the-three-gorges-dam-project>
- *PBS* — “Up the Yangtze: Yangtze Cruise” for grades 6-8, 9-12. Explores how China’s Three Gorges Dam project is changing the Yangtze River and the lives of those who live along its path:  
<http://www.pbs.org/teachers/connect/resources/6680/preview/>  
<http://www.pbs.org/teachers/connect/resources/6681/preview/>  
<http://www.pbs.org/teachers/connect/resources/6682/preview/>
- *National Geographic* — This class activity compares the Yangtze, Ganges, and Mekong rivers:  
<http://www.nationalgeographic.com/xpeditions/lessons/04/gk2/liferiverstudent.pdf>

## The Belo Monte Dam: Striking at the Heart of the Amazon



The Amazon Basin, home to 60% of the planet's remaining tropical rainforests, is an immense region nearly the size of the continental United States. The Amazon's incredible biodiversity is well known, and new research confirms the critical role it plays in regulating the global climate. The Belo Monte Dam on the Xingu River, a major tributary of the Amazon River, would divert the flow of the river and devastate an extensive area of the rainforest, displacing thousands of indigenous peoples. A lesson on the Belo Monte Dam would facilitate discussions on the interaction between rainforests and rivers, and the role of healthy rivers and forests and resilient communities in light of climate change impacts.

### Background

- Overview of the Amazon Basin:  
<http://www.internationalrivers.org/en/node/363>
- Overview of the Xingu River:  
<http://www.internationalrivers.org/en/node/794>
- Overview of Brazilian dams:  
<http://www.internationalrivers.org/en/node/358>

### Overview of Issues

- International Rivers' Belo Monte Dam fact sheet, "Massive Dam Project Strikes at the Heart of the Amazon":  
[http://www.internationalrivers.org/files/J4337\\_IRN\\_Factsheet\\_3.pdf](http://www.internationalrivers.org/files/J4337_IRN_Factsheet_3.pdf)

### Multimedia

- Pictures of the Amazon and the people who live there on International Rivers' *Flickr* site:  
<http://www.flickr.com/photos/internationalrivers/collections/72157618008856873/>
- Additional images courtesy of International Rivers:  
<http://www.internationalrivers.org/en/image/tid/499>
- Check out the Amazon and Belo Monte Dam on Google Earth:  
<http://www.internationalrivers.org/en/node/4292>
- Video by *Reuters*: "Anger over Rainforest Dam," May 2008:  
<http://www.internationalrivers.org/en/node/2908>
- Video, "Real News Online: Tensions Run High at Amazon Dam Protest," May 2008:  
<http://www.internationalrivers.org/en/node/2907>
- Video, "15,000 to be Displaced by Proposed Amazon Dams," May 2008:  
<http://www.internationalrivers.org/en/node/2868>
- Video by *Al Jazeera*, "Battling for Water in the Amazon," May 2008:  
<http://www.internationalrivers.org/en/node/2853>
- Film on Amazon dams (NB: This film is recommended for more mature audiences due to some graphic images):  
<http://culturesofresistance.org/xingu>

- *PBS* video clip on pink dolphins in Amazon:  
<http://www.pbs.org/teachers/connect/resources/6158/preview/>
- Check out “Amazonia: Voices From the Rainforest,” 70 min, 1991. Produced by Monti Aguirre and Glenn Switkes. This video documents the conflicting interests between indigenous peoples, colonizers and ranchers in the Amazonian rainforest:  
<http://www.videoproject.com/ama-111-v.html>

### Current Events

- *Reuters* article on Belo Monte Dam, “Huge Hydroelectric Dam Approved in Brazil’s Amazon,” February 2010:  
<http://www.reuters.com/article/idUSTRE6105MY20100201>
- *The Guardian* article on Belo Monte Dam, “Brazil to Build Controversial Belo Monte Hydroelectric Dam in Amazon Rainforest,” February 2010:  
<http://www.guardian.co.uk/environment/2010/feb/02/brazil-amazon-rainforest-hydroelectric-dam>
- *Times Online* article, “Fury as Amazon Rainforest Dam Approved by Brazil,” February 2010:  
<http://www.timesonline.co.uk/tol/news/environment/article7012769.ece>
- *New York Times* article, “Tribes of Amazon Find an Ally Out of 'Avatar,’” April 2010:  
<http://www.internationalrivers.org/en/node/5279>

### Go in Depth

- International Rivers’ “Xingu River” blogs:  
<http://www.internationalrivers.org/more?tid=448&type=blog>
- Overview of rivers as a biome and human impacts by the California Academy of Sciences, includes details on the Amazon River:  
<http://www.calacademy.org/science/biomes/rivers/>
- Independent Experts Panel report on the Belo Monte Dam: “Experts Panel Assesses Belo Monte Dam Viability,” October, 2009:  
[http://www.internationalrivers.org/files/EXEC%20SUMMARY%20ENGLISH\\_0.pdf](http://www.internationalrivers.org/files/EXEC%20SUMMARY%20ENGLISH_0.pdf)

### Lesson Plans

- *National Geographic* — “Rivers: Lifelines of the Land,” for grades 6-8. Introduces students to river ecology and addresses the societal and environmental impacts associated with dams and their construction:  
<http://www.nationalgeographic.com/xpeditions/lessons/14/g68/tgrivers.html>
- “Journey to Planet Earth” series by *PBS* has a lesson plan called, “Rivers of Destiny,” grades 5-8:  
<http://www.pbs.org/journeytoplanetearth/education/riversofdestiny.html>
- Rainforest Action Network — the Teachers’ Lounge has supplemental materials on rainforests:  
<http://ran.org/index.php?id=952>
- *PBS* — “Return to the Amazon” video and lesson plan:  
<http://www.pbs.org/teachers/connect/resources/6159/preview/>

## The Mekong River: Lifeline of Southeast Asia



As it passes through China, Burma, Laos, Thailand, Cambodia and Vietnam, the Mekong River bursts with color and life. Sixty million people live in the lower Mekong Basin and their livelihoods and cultures are intimately connected with the river's natural cycles. Boasting one of the world's most diverse and productive inland fisheries, the Mekong supplies local people with about 80% of their protein needs. However, since the 1960s, several mega-schemes to dam the Mekong River to generate electricity have been proposed, threatening downstream fisheries and livelihoods. A lesson on the Mekong River and its dams explores the complex and intimate relationship among cultures, peoples, and the role that their natural environment plays in food security.

### Introduction

- Overview of Southeast Asia:  
<http://www.internationalrivers.org/en/node/340>
- Overview of Mekong Mainstream Dams:  
<http://www.internationalrivers.org/en/node/2257>
- Overview of China and the Upper Mekong River:  
<http://www.internationalrivers.org/en/node/354>

### Overview of Issues

- International Rivers' Mekong River fact sheet, "Mekong Mainstream Dams: Threatening Southeast Asia's Food Security":  
[http://www.internationalrivers.org/files/Mekong\\_Mainstream\\_Aug09.pdf](http://www.internationalrivers.org/files/Mekong_Mainstream_Aug09.pdf)

### Multimedia

- Mekong images courtesy of International Rivers:  
<http://www.internationalrivers.org/en/image/tid/187>
- Additional Mekong pictures on International Rivers' *Flickr* site:  
<http://www.flickr.com/photos/internationalrivers/collections/72157616348462901/>
- Video, "Nam Theun 2: Risky Business," March 2010:  
<http://www.internationalrivers.org/en/node/5187>
- Video, "Still Waters, Deep Trouble:"  
<http://www.internationalrivers.org/en/node/4831>
- Video interview with Carl Middleton, Director of the Southeast Asia Campaign at International Rivers, on why he works on the Mekong River:  
<http://www.internationalrivers.org/en/node/5013>
- Video interview with Carl Middleton by Expedition: Blue Planet  
<http://www.internationalrivers.org/en/node/4792>
- Video, "Saving the Mekong:"  
<http://www.internationalrivers.org/en/node/4591>
- Map of Mekong proposed and existing dams:  
<http://www.internationalrivers.org/files/WRR%20Mekong%20Map.pdf>
- Slideshow, "Khone Falls: Soul of the Mekong," September 2008:

- <http://www.internationalrivers.org/en/node/3348>
- Slideshow, “Nam Theun 2,” June 2008:  
<http://www.internationalrivers.org/en/node/3123>

### Current Events

- *National Geographic Adventure Magazine* article “Southbound on the Mekong,” June/July 2004:  
<http://www.nationalgeographic.com/adventure/0406/excerpt5.html>
- *National Geographic Adventure Magazine* article “Laos by Riverboat” June/July 2004 (includes impressive picture gallery):  
[http://www.nationalgeographic.com/adventure/0406/photo\\_index.html](http://www.nationalgeographic.com/adventure/0406/photo_index.html)
- *WorldWatch Institute* article, “Greenwashing Hydropower,” January 15, 2010:  
<http://www.worldwatch.org/node/6344>

### Go in Depth

- International Rivers’ *World Rivers Review*, Focus on the Mekong, “The Mekong: Diverse, Magnificent, Threatened,” June 2007:  
<http://www.internationalrivers.org/en/node/1715>
- Overview of rivers as a biome and human impacts by the California Academy of Sciences, includes details on Mekong River:  
<http://www.calacademy.org/science/biomes/rivers/>

### Lesson Plans

- *National Geographic* — “Rivers: Lifelines of the Land,” for grades 6-8. Introduces students to river ecology and addresses the societal and environmental impacts associated with dams and their construction:  
<http://www.nationalgeographic.com/xpeditions/lessons/14/g68/tgrivers.html>
- “Journey to Planet Earth” series by PBS has a lesson plan called, “Rivers of Destiny” for grades 5-8:  
<http://www.pbs.org/journeytoplanetearth/education/riversofdestiny.html>
- University of Hawaii — by Mary Frances Higuchi, grades 3-5:  
<http://www.hawaii.edu/hga/gaw01/workshop/MEKONGLESSon.html>
- *National Geographic* — “Life on the Rivers of Asia:”  
<http://www.nationalgeographic.com/xpeditions/lessons/04/gk2/liferiver.html>
- *Smithsonian Folkways* — “Connecting Cultures: Music of the Mekong River:”  
[http://www.folkways.si.edu/explore\\_folkways/mekong.aspx](http://www.folkways.si.edu/explore_folkways/mekong.aspx)
- This is an educational site inspired by the 2007 Smithsonian Folklife Festival program, *Mekong River: Connecting Cultures*. The Festival program brought together numerous culture groups living along the Mekong River, from Yunnan Province, China, through Laos, Thailand, Cambodia and Vietnam. *Navigating the Mekong*:  
<http://www.folklife.si.edu/Mekong/index.html#>
- *National Geographic* — class activity comparing the Yangtze, Ganges, and Mekong rivers:  
<http://www.nationalgeographic.com/xpeditions/lessons/04/gk2/liferiverstudent.pdf>

## The Gibe 3 Dam: A People Divided



Ethiopia is a land of hydrological contrasts. Its uneven, often unpredictable distribution of water greatly impacts its efforts to address poverty. Dam development in Ethiopia is highly controversial and there is virtually no space for civil society to criticize the government's dam plans, such as the enormous Gibe 3 Dam on the Omo River. Ethiopia's plans to build Gibe 3 could threaten the food security and local economies that support more than half a million people in southwest Ethiopia and along the shores of Lake Turkana in Kenya. A lesson on Gibe 3 allows advanced students to have a lively debate regarding competing needs, poverty and access to energy, and the perspective of diverse stakeholders. It can also be a lesson in how dams impact downstream areas for hundreds of miles, and can change ecosystems quite far from the actual dam.

### Introduction

- Overview of Ethiopia's rivers and communities:  
<http://www.internationalrivers.org/en/node/2484>
- Overview of Gibe 3 Dam:  
<http://www.internationalrivers.org/en/node/3773>

### Overview of Issues

- International Rivers' Gibe 3 fact sheet, "Ethiopia's Gibe III Dam: Sowing Hunger and Conflict":  
[http://www.internationalrivers.org/files/Gibe3FS\\_051509final.pdf](http://www.internationalrivers.org/files/Gibe3FS_051509final.pdf)

### Multimedia

- Slideshow with photos and quotes from the people of Lake Turkana, "Resisting Gibe 3 Dam: Voices from Lake Turkana," features children singing:  
<http://www.internationalrivers.org/en/node/5558>
- Interview with Ikal Angelei from Friends of Lake Turkana, which attempts to represent affected communities. Ikal talks about dam development in the region and how Ethiopia is affected by development:  
<http://www.internationalrivers.org/en/node/5198>
- Listen to a radio program by the *BBC* on the Gibe 3 Dam, "Ethiopia: Troubles Downstream," March 2009:  
[http://news.bbc.co.uk/2/hi/programmes/crossing\\_continents/7951137.stm](http://news.bbc.co.uk/2/hi/programmes/crossing_continents/7951137.stm)
- Explore the recent *BBC* multimedia report exposing the dam's many flaws, "The Dam that Divides Ethiopians," March 2009:  
<http://news.bbc.co.uk/2/hi/africa/7959444.stm>
- Award-winning photographer, Brent Stirton, shares his photographs:  
<http://www.brentstirton.com/feature-omo.php>
- Visit "No Water, No Life," which charts photographer Alison Jones' expedition to the lower Omo River communities:  
<http://www.nowater-nolife.org/watersheds/omo/index.html>

## Current Events

- *Los Angeles Times* Op-ed, “Big dam, Bigger Problems,” May 2009:  
<http://articles.latimes.com/2009/may/14/opinion/oe-pottinger14>
- *National Geographic* article, “Africa’s Last Frontier,” on the different Omo River tribes, March 2010:  
<http://ngm.nationalgeographic.com/2010/03/omo-river/shear-text>
- Read Kenyan activist Ikal Angelei’s article in the *World Rivers Review*, “Ethiopia’s Gibe III Dam Endangers Kenya’s Lake Turkana,” March 2009:  
<http://www.internationalrivers.org/en/node/3923>

## Go in Depth

- International Rivers’ blogs on Gibe 3:  
<http://www.internationalrivers.org/more?tid=832&type=blog>
- Report by Terri Hathaway, “Ethiopia’s Endangered Lower Omo Valley,” January 2009:  
<http://www.internationalrivers.org/en/node/2794>  
Travel journal by Terri Hathaway:  
<http://www.internationalrivers.org/en/node/5553>

## Lesson Plans

- *National Geographic* — “Rivers: Lifelines of the Land,” for grades 6-8. Introduces students to river ecology and addresses the societal and environmental impacts associated with dams and their construction:  
<http://www.nationalgeographic.com/xpeditions/lessons/14/g68/tgrivers.html>
- *National Geographic* — explores Ethiopia’s geography and diversity beyond media misconceptions, for grades 6-8:  
<http://www.nationalgeographic.com/xpeditions/lessons/03/g68/morelldrought.html>
- *National Geographic* — explores the Blue Nile River in Ethiopia:  
<http://www.nationalgeographic.com/resources/ngo/education/xpeditions/lessons/03/gk2/morellnile.html>