

Water and the Environment in Asia

This new column will highlight digital resources related to Asia with an eye to how they might be useful in the classroom. Each issue will consider a different theme, and sources will be selected that are aligned to best develop that theme. In this issue, we examine present-day water security challenges in Asia. After pointing to some background sources, the emphasis below is on materials that might be useful in constructing teaching units around this potentially transnational and cross-disciplinary topic.

Note that when possible, I have left the original URLs intact, though longer or more complicated web addresses have been condensed with Google's link shortener. If you know of additional sources that would be worth attention, please send me an email (jhall@hotchkiss.org) for inclusion as an online supplement.



Loitak lake (Source: India Water Portal)

Source: *India Water Portal* website article "Floating National Park Calls for Help" at <https://tinyurl.com/ybc8zq9b>.

NEWS AND REPORTS

A lot can be gleaned from general news sources that have strong Asia coverage. Among these, I would recommend *The Guardian*, *The Economist*, and *The New York Times*. In addition to regular news stories, keep an eye out for special features, like the essay "The Mekong: Requiem for a River" that appeared in *The Economist* (<https://go.gl/7czl2X>) in February 2016.

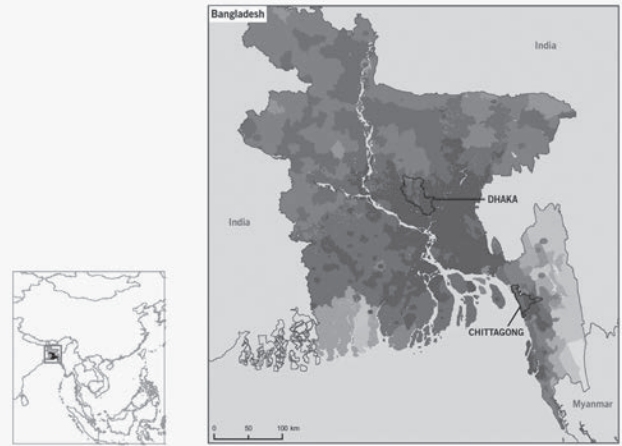
To dig deeper, I also consulted more specialized sites that assumed a bit more initial knowledge about Asia and that follow developments on individual stories (e.g., dam projects) more closely over time. These include:

The Diplomat (<http://thediplomat.com>) is dedicated to the Asia-Pacific region, broadly defined, and emphasizes political and institutional aspects of water access in areas ranging from water conflict in Afghanistan to mysterious fish deaths off the coast of Việt Nam. I also discovered two country-specific sites: *China Dialogue* (<https://www.chinadialogue.net/>) covers a range of environmental challenges in China and across its borders. Meanwhile, *India Water Portal* (<http://www.indiawaterportal.org/>) tracks water-related news in India, along with closer looks and community impact, data analysis, and a frequently asked questions section on topics like packaged drinking water.

The Asian Development Bank (ADB) issued its most recent "Water Development Outlook" in 2016 (<https://go.gl/1DoO5v>). Reports like this can take time to wade through, but the ADB delivers several

key facts upfront. I learned, for example, that 80 percent of water in Asia is still used for agriculture and that 1.7 billion people in the region lack access to basic sanitation. Especially useful for teachers are the "related" column to the right that includes a photo essay and a short video recap of the report's findings.

Map 2: Population Density in Low-Lying Coastal Areas: within and outside a 10 meter low elevation coastal zone (LECZ), 2000⁴⁵



Source: *Asia's Next Challenge: Securing the Region's Water Future*, an Asia Society report by the Leadership Group on Water Security in Asia, April 2009, 48.

LESSON PLANNING

Having a better sense of the issues, I then began looking for curriculum materials produced by universities or education-focused organizations like the Asia Society. I value these already-prepared curriculum units because tweaking them encourages me to consider approaches I might not have developed independently and helps me build on the experiences of other educators. The lessons below are divided between more general discussion of water security on the one hand and examination of particular rivers on the other.

General exploration:

The Asia Society's Center for Global Education includes at least one relevant lesson plan, "Water Is Life: A Lesson about Water Security" (<http://asiasociety.org/education/water-life>). The larger Asia Society site is also worth a search. One resource I found was the report "Asia's Next Challenge: Securing the Region's Water Future" (<https://go.gl/zKzmzqy>), which includes charts like one comparing the water per capita available in the United States and various countries in Asia, and maps like the striking one illustrating Bangladesh's potential vulnerability to rising sea levels.

"Exploring Asia & the Environment" (<https://go.gl/jeXasT>) by the University of Washington and *The Seattle Times* is a six-part series that includes two units that focus directly on water ("The Shrinking of a Sea" and "China's Water Blues") and at least two that link indirectly ("Human Impact on the Environment" and "Indonesia Set to Become Global Education Leader"). Units are structured with suggestions for objectives, focus questions, and assessment. However, since the lessons were put together in 2010, some of the examples and links may need to be swapped out for updated alternatives.

"To Sustain Life: Water and Development in Nepal" (<https://go.gl/HTu8R2>), by Educate the Children and the Cornell

University South Asia Program, is probably best-suited for those looking for middle school- or introductory high school-level materials. One of its strengths is the way it encourages personal involvement from students (how much water does it take to brush one's teeth?).

Rivers:

“**River Pollution in Asia**” (<https://goo.gl/DQWGgJ>) was created by Primary Source Inc. in 2015. It examines pollution along the Ganges River and can be scaled to middle or high school classrooms. The plan includes a guided look at authentic documents, a short video, and four extension options. Note that a handful of the links to *National Geographic* are now broken, but a quick search on YouTube quickly turns up the video that anchors one of the activities. (<https://youtu.be/4DRJt5RwDDU>).

“**Rivers of Asia**” (http://web.stanford.edu/group/spice/rivers_of_asia/) by the Stanford Program on International and Cross-Cultural Education (SPICE) concentrates on China's Changjiang (the Yangtze River). Interactive maps and short videos on environmental challenges stand out. Look for the robust fifty-one-page “Teacher's Guide, Rivers of China: The Yangtze” (<https://goo.gl/sYjRa6>) that includes teacher resources and four fleshed-out activities.



Source: The *ChinaX Map* at <https://worldmap.harvard.edu/maps/chinaX>.

THOUGHTS ON INDEPENDENT IMPLEMENTATION

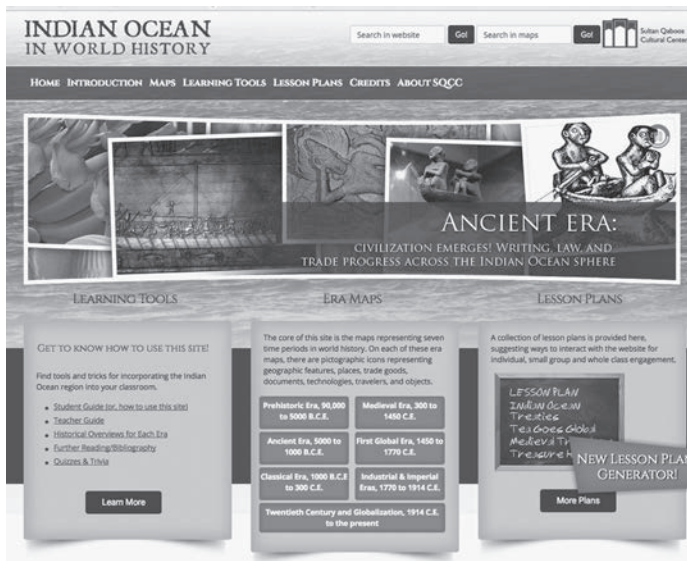
In addition to more fully fleshed-out lesson plans, other resources got me thinking about curriculum I might develop on my own. The following are a handful of resources that might be incorporated into a lesson.

Two online mapping tools might be useful for a scavenger hunt or examination of particular geographic features. The *ChinaX Map* (<https://worldmap.harvard.edu/maps/chinaX>) is an interactive tool with several water-related display options, allowing students to compare ancient and modern coastlines or explore watersheds and patterns of precipitation.

The *India Water Tool* (<http://www.indiawatertool.in/>) works similarly, but is even more focused on visualizing water-related data, allowing users to examine precipitation, groundwater levels, and water quality. Hydroelectric dam projects also seem like an opportunity for a debate or role-playing simulation in the classroom. These have divided conservationists and state energy planners, as well as upstream from downstream nations. The Mekong River is one such example. Students might compare arguments put forward by advocacy groups like *International Rivers* (<https://www.internationalrivers.org/>) to state media outlets like *China Daily* (<http://www.chinadaily.com.cn/>) or other perspectives. They might also consider the rich research materials and maps available from the *Research Program on Water, Land, and Ecosystems (WLE)* (<https://wle-mekong.cgiar.org/>).

In-depth student research might also benefit from the *WRIS Wiki* (<https://goo.gl/DxJxnx>), which is an Indian government-run informa-

tion clearinghouse of water-related data, policy papers, and data visualizations.



Source: *Indian Ocean in World History* at <http://www.indianoceanhistory.org/>.

OTHER APPROACHES TO WATER IN ASIA

Finally, I located several resources that did not fit neatly into the topic of water and the environment, but are connected more broadly to water and Asia, and might be useful for educators:

A robust website, *Indian Ocean in World History* (<http://www.indianoceanhistory.org/>) is maintained by the Sultan Qaboos Cultural Center (SQCC). It includes background, interactive maps, and lesson plans.

Another Indian Ocean-related theme is the *Voyages of Zheng He* (<https://goo.gl/LELo9f>) by Sue Gronewald for *Asia for Educators*.

With the South China Sea frequently in the news, the Council for Foreign Relations has several resources, including a Q&A-style *South China Sea Tensions* (<https://goo.gl/dCvwbQ>) with an interactive map, as well as *Teaching Notes: China's Maritime Disputes* (<https://goo.gl/nWBev1>), with discussion questions and activity suggestions.

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