

A Brief Description of a Research Project on Keoladeo National Park

Keoladeo National Park (the Park) is one of four UNESCO World Heritage Centres in the Agra area.¹ While the Taj Mahel, the Red Fort of Agra, and Fatehpur Sikri are very well known and highly visited, the Park doesn't seem to induce nearly as many tourists to travel the 50 kilometers from Agra.² Yet, the Park is an internationally significant wetland (it is listed under the Ramsar Wetland Convention³) known for providing breeding, wintering, and migratory resting areas for endangered waterfowl. Three issues related to the management of the park have existed for some time:⁴ scarcity of water, the spreading of invasive species, and encroachment into the park by neighbors. It is the first problem that interests me.

This problem first caught my eye as I was preparing to serve as the Resident Director for the 2006 Semester in India Program. As a bit of history, in the 18th century, the Maharaja of Bharatpur dammed a river to provide flood control for his capital city and to create more arable land. At the turn of the 20th century, the Maharaja dug a canal system from the dam to create this wetland; his goal was to attract waterfowl so he could have better hunting. In September 2004, the Rajasthan Chief Minister Vasundhara Raje decided to distribute the water captured by the newly constructed Panchana Dam (upstream of the Park) to that area's farmers rather than letting it flow to the Park. The result of the decision was summarized in one of the readings I assigned to the Semester in India students as: the "lack of water and the indifferent attitude of the authorities are sounding the death knell of the Keoladeo Ghana National Park."⁵

I planned the Program's travel from the city of Jaipur to Agra so that we would visit the Park. We walked on the grassy drylands that should have been wetlands if that summer's monsoon rains had not been diverted away from the Park to the farmers, and our bird watching attempts failed miserably as none of the expected significant migratory waterfowl were there that season. To the good, the 2008 monsoon provided enough water for both the Park and the farmers⁶ and the Rajasthan government has made arrangements to fund the engineering projects required to provide a secure water source for the Park, including a commitment from the Central Government to pay for a significant diversion of water from an area known as the Goverdhan Drain.⁷ As of my visit in August 2009, the diversion project had not been started and the very poor monsoon then in progress seemed to doom both the farmers and the Park.

¹ United Nations Educational, Scientific, and Cultural Organization. 31 January 2009. Keoladeo National Park. <<http://whc.unesco.org/en/list/340/>> Last visited 31 January 2009.

² Keoladeo National Park is located in the State of Rajasthan, which puts it in a different chapter of tourist guides than Agra, which is in the State of Uttar Pradesh.

³ The Ramsar Convention on Wetlands. 11 January 2006. *The Annotated Ramsar List: India*. <http://www.ramsar.org/profile/profiles_india.htm> Last visited 31 January 2009.

⁴ United Nations Educational, Scientific, and Cultural Organization. 15 June 2008. Mission Report: Keoladeo National Park (India) (34) 10-16 March, 2008. Available at <<http://whc.unesco.org/en/list/340/documents>>. Last visited 31 January 2009.

⁵ Sebastian, Sunny. 2005. Keoladeo Ghana: Last Gasp for Survival. *The Hindu Survey of the Environment 2005*. 55-59.

⁶ Bindra, Prerna. 10 November 2008. Bharatpur: Paradise Regained. *Indianaturally*. <<http://indianaturally.blogspot.com/2008/11/bharatpur-paradise-regained.html>> Last visited 31 January 2009.

⁷ UNESCO Mission Report cited in note 5.

So, my basic research question can be stated as (too) simply, what is the highest value use of the area's water? In one sense, this is a very straight-forward question of the type that economists have answered in many other situations, including situations in which agricultural interests have directly come up against ecological interests. Yet, it is precisely the richness of this particular context that makes this project an interesting one. In no case has the full set of social benefits and costs of any of the water diversions been identified or estimated. Yet, we can easily create a list of people who have been affected by these diversion projects (arbitrarily considering only those in the 21st century): the Central Government of India, which has signed both the Ramsar Wetland Convention and must protect the UNESCO World Heritage sites; the State of Rajasthan, which built the Panchana Dam and allocates its waters; the farmers upstream (who receive water from the Panchana Dam) and downstream (who do not receive water from the Panchana Dam); the people who gain employment and income directly and indirectly from the Park's activities; the nearby people who use the Park's resources as well as those who are served by its wetland functions; the tourists who visit the Park; the people who value the existence of the Park's unique ecological system, some of whom will never visit it; and the people who would be downstream of the water diversion at the Goverdhan Drain. There are nice economic twists, such as how to compare the values placed by Indian citizens to the values placed by international tourists and environmental advocates. There are interesting ecological aspects, such as the crucial role that the monsoonal climate creates in determining the quantity, quality, and timing of water flows in that area. Also, there are social, political, and legal factors that are unique to this particular place because of its distinctive history.

In June and July 2009,⁸ Alicia Frank '11 and I reviewed just about every publication dealing with the Park, including all of the UNESCO and Indian documents related to it. This allowed her to start a paper that describes the context for the interesting twists and turns I alluded to above. This draft also reviews the economics literature dealing with the valuation of the type of ecological aspects featured at Keoladeo as well as the value of water in developing countries and in India. It will allow us to be able to understand the right questions to ask as we begin to assess the values of the area's water quantitatively.⁹

I started that empirical research with a trip to India in August 2009.¹⁰ That trip allowed me to introduce myself to the important people dealing with these issues, including the Park Director, the project manager for W.W.F., and a UNESCO researcher. These conversations helped me to refine my thoughts on this project and suggested new avenues to explore. With the visitor data that the Park Director will send and data on Rajasthani water flows and agricultural incomes, it should be possible to construct an initial, very crude measure of the trade-offs involved with the water diversions. At a minimum, such empirical exercises should help to further identify the appropriate questions to ask and the appropriate data to be collected.

⁸ This research was funded by the Ratliff Endowment for the Davidson Economics Department.

⁹ The idea is to develop a stand-alone paper that would be suitable for Alicia to present at a conference like the Interdisciplinary Environmental Association's (IEA's) annual conference.

¹⁰ This research was funded by the Davidson College Faculty Study and Research Fund.