Dammed and the Damned: Draining the Bucket Dry

Carla Steiger
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DAMS AND THE DAMMED: DRAINING THE BUCKET DRY

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts

By

CARLA STEIGER
A.B., Oberlin College, 1973
M.F.A., University of Minnesota, 1977

2010
Wright State University
I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY Carla Steiger ENTITLED Dams and the Dammed: Draining the Bucket Dry BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE Degree of Master of Arts.

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ABSTRACT


This thesis investigates how people displaced from the construction of large dams in seek environmental justice. I studied the importance of regime type, the creation of protest groups and the formation of alliances with national, international organizations, and the media. In a comparison between protest movements against the Three Gorges Dam in China and the Sardar Sarovar Dam in India, displaced populations suffered from loss of community, livelihood, and health and were victimized by corrupt actors that supported the dams. The rapid economic development of these two countries emerged as a major point of comparison between the two. Regime type was notable in that it informed the structure of the protest movements, but was not a major determinant of the end results if the protestation. Both countries had avenues for protests. National and international NGOs and the media gave the protesters a voice in cessation of building destructive new dams. Protest movements also influenced the dissenting opinions of some politicians regarding large water infrastructure projects.
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Table 1.1

Acronyms

ADC – Asian Development Bank
ANCOLD – Australia National Committee on Large Dams
ARCH – Action Research in Community Health and Development
BRAC – Building Resources Across Communities
BDI – Building Resources Across Communities Development Institute
CASS – Chinese Academy of Social Sciences
CIDA – Canadian International Development Agency
CP – Communist Party of China
CPPCC – Chinese People’s Political Consultative Committee
CSDS – Centre for the Study of Developing Societies
CYJV – Canadian Yangtze Joint Venture
EDF – Environmental Defense Fund
EPB – Environmental Protection Bureau
EPO – Environmental Protection Office
GOG – Government of Gujarat
GOI – Government of India
GOMP – Government of Madhya Pradesh
GONGO – Government Organized Non-governmental Organization
HDR – Human Development Reports of the United Nations
IAIA – International Association of Impact Assessments
ICOLD – International Committee on Large Dams
IDA – International Development Association
IDB – Inter-American Development Bank
IFI – International Financial Institution
IISD – International Institute for Sustainable Development
IMF – International Monetary Fund
IR – Independent Review of the Sardar Sarovar Project
IRN – International Rivers Network
MDBs – Multilateral Development Banks
MLARR – Management of Land Acquisition, Resettlement and Rehabilitation
MOF – Ministries of Finance
MOWR – Ministry Environment and Forests Ministry of Water Resources
MP – Madhya Pradesh
MRD – Ministry of Rural Development
MWREP – Chinese Ministry of Water Resources and Electric Power
NBA – *Narmada Bachao Andolan* - Save the Narmada
NCA – Narmada Control Authority
NGO – Non-governmental organization
NPC – National People’s Congress
NPRR – National Policy on Resettlement and Rehabilitation
NPV – Net Perceived Value
NVDA – Narmada Valley Development Authority
NWDT – Narmada Water Disputes Tribunal
PPP – Perceived Purchasing Power
OXFAM – Oxford Committee for Famine Relief
PAF – Project Affected Family,
PAP – Project Affected Person
R & R – Resettlement and Rehabilitation
SEPA – State Environmental Protection Agency
SETU – Centre for Social Knowledge and Action
SIA – Social Impact Assessment
SSNNL or Nigam – Sardar Sarovar Narmada Nigam Limited
SSP – Sardar Sarovar Project
TGD – Three Gorges Dam
TGP – Three Gorges Project
TGPDC – Three Gorges Project Development Corporation
TVE – Town and Village Owned Enterprise
UNESCO – United Nations Educational, Scientific, and Cultural Organization
UNICEF – United Nations Children’s Education Fund
USTGWG – United States Three Gorges Working Group
WCD – World Commission on Dams
WID – Women In Development
WHO – World Health Organization - WHO

WWF – World Wildlife Fund – WWF
Table 1.2

Glossary

catchment – reservoir or other basin for catching water

million acre feet - the equivalent volume of water that will cover an area of one million acres to a depth of one foot – MAF

dam – A concrete or earthen barrier constructed across a river and designed to control water flow or create a reservoir

floodplain – broad flat lands along a river or stream or river that normally become inundated with sediment

greenwashing – what corporations and governments do when they try to make themselves look more environmentally friendly than they really are.

hectare – land measurement which equals approximately 2.4 acres

hydrology – the scientific study of water on earth and its interaction with the environment.

megawatt – is a measurement of electric energy that will provide power for 1,000 people for one hour

megawatt – measurement of electric energy that will provide power for 1,000 people for one hour – MW

million acre feet - the equivalent volume of water that will cover an area of one million acres to a depth of one foot – MAF

oustee – a person displaced from their home due to development projects
riparian area – area of land and vegetation adjacent to a stream or river which includes

riverine habitat– the aquatic habitat within streams and rivers

sedimentation – deposit of soil particles transported by a river or stream

watershed – the land that drains to a particular water body, woodlands, vegetation and floodplains
Table 1.3

Translations

adivasi – Indigenous tribal and non-caste people

Akyamancha – Unified Forum

bhajans – Indian devotional songs

Chhatra Yuva Sangharsh Vahini (Student Youth Struggle, also known as Vahini)

crore – unit of measure that equals 10,000,000

dargah – a Sufi shrine built over the grave of a religious figure

doobenge, par nahin hatenge – we will drown, but not leave

Falun Gong – a belief system from China that emphasizes morality without daily religious observance. Until it was banned in 1999, there were an estimated 70 million members in China.

Ganga – Ganges River

ghat – a broad flight of stairs leading down to a river

Gongmeng – Open Constitution Initiative

Guangming Riboa – Enlightenment Daily

Hukou – family registration system in China

Lokayan – Transformation

Narmada Ghati Dharagrastha Samiti – Committee for the Dam-Affected of the Narmada Valley

Narmada Ghat Navnirnman Samiti – Narmada Valley New Awakening Committee

Nimad – India

Nujian Zhi Sheng – The Voice of the Nu River.
oustees – dam-placed people in India

Patidars – wealthy landed class in India

Sangharsh Yatra – non-violent march

Sayhayog – an association founded by Medha Patkar of professionals who contributed 2% of their annual income to the cause of developing an alternative developmental for oustees

Samarpit Dal – sacrificial squad

satyagraha – policy of non-violent resistance used by Mahatma Gandhi in 1919, from Hindi, insistence on the truth

SETU – bridge

shih – village clan

yuan – Chinese currency

Vahini – Student Youth Struggle, also known as Chhatra Yuva Sangharsh Vahini

Vikas Sangharsha Yaga – Long March of the Valley

Vishamata Nirmoolan Samity – Disparity Eradication Committee

xinfang – petition, which literally means “letters and visits or calls”
Table 2.1  
Narmada Timeline for Sardar Sarovar Dam

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>Central Government sets up Narmada Water Disputes Tribunal</td>
<td>1994 – May</td>
<td>NBA files petition with the Supreme Court</td>
</tr>
<tr>
<td>1985</td>
<td>World Bank (WB) sanctions $450 million loan for Sardar Sarovar Dam (SSP)</td>
<td>1994</td>
<td>Powerhouse flooded by the monsoons</td>
</tr>
<tr>
<td>1986</td>
<td><em>Narmada Bachao Andolan</em> (NBA) is created</td>
<td>1995</td>
<td>Supreme Court orders dam height stopped at 80 meters</td>
</tr>
<tr>
<td>1987</td>
<td>SSP receives clearance from the Ministry of the Environment</td>
<td>1999</td>
<td>Supreme Court orders work to continue to 85 meters</td>
</tr>
<tr>
<td>1988</td>
<td>Steady construction begins</td>
<td>1999</td>
<td>800 protesters arrested. Planned dam height is 163 meters</td>
</tr>
<tr>
<td>1989</td>
<td>5,000 protest dam in the Narmada Valley</td>
<td>2000 – October 18</td>
<td>Supreme Court gives permission for SSP construction at new height. Global protest ensues as well as the court case NBA vs. State Governments of Gujarat, Maharashtra, Madhya Pradesh</td>
</tr>
<tr>
<td>1990 – December</td>
<td>6,000 people walk 100 kilometers and form a seven member sacrificial squad when the government starts flooding the Narmada Valley.</td>
<td>2000 – November 14</td>
<td>World Commission on Dams releases report that questions the value of large dams.</td>
</tr>
<tr>
<td>1991 – January</td>
<td>Members of the sacrificial squad begin a 22 day hunger strike and demand dam review.</td>
<td>2005</td>
<td>SSP goes into operation</td>
</tr>
<tr>
<td>1991 – June</td>
<td>WB appoints Bradford Morse Chair of the IR, later known as Morse Report</td>
<td>2008</td>
<td>Tata Institute Issues: Performance and Development Effectiveness of Sardar Sarovar Project</td>
</tr>
<tr>
<td>1993</td>
<td>World Bank withdraws funding from SSP</td>
<td>2020 -</td>
<td>Projected completion of entire Narmada River Project</td>
</tr>
<tr>
<td>1993 - August</td>
<td>New Committee established by Indian Union Water Resources Ministry called the Five Member Report</td>
<td>2008</td>
<td>Tata Institute Issues: Performance and Development Effectiveness of Sardar Sarovar Project</td>
</tr>
<tr>
<td>1994</td>
<td>Five Member Group agrees with Morse Report</td>
<td>2020</td>
<td>Projected completion of entire Narmada River Project</td>
</tr>
</tbody>
</table>

(*most information from Thimmakka’s Resources for Environmental Education)*
Table 2.2

Tata Institute for Social Sciences

Performance and Development Effectiveness of the Sardar Sarovar Project 2008

<table>
<thead>
<tr>
<th>Benefits Promised from SSP</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Irrigation</strong></td>
<td><strong>Irrigation</strong></td>
</tr>
<tr>
<td>90,000 km. irrigation canals</td>
<td>2007: 17,100 (19% completion)</td>
</tr>
<tr>
<td><strong>Water User Groups</strong> (Stakeholders)</td>
<td><strong>Water User Groups</strong></td>
</tr>
<tr>
<td>1,186 planned</td>
<td>2006: 10% active, none had distribution system</td>
</tr>
<tr>
<td><strong>Number of Villagers to Receive Drinking Water</strong></td>
<td><strong>Number of Villagers to Receive Drinking Water</strong></td>
</tr>
<tr>
<td>10,800</td>
<td>Completion rate of 29%-33% promised water</td>
</tr>
<tr>
<td><strong>Kutch Industrial/Municipal</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2006 – <strong>Received</strong> 61% promised water</td>
</tr>
<tr>
<td><strong>Saurashtra Industrial/Municipal</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2006 – <strong>Received</strong> 80% promised water</td>
</tr>
<tr>
<td><strong>Gujarat – Industrial/Municipal</strong></td>
<td></td>
</tr>
<tr>
<td>Promised .2 MAF</td>
<td><strong>Received Water</strong>: 1.0 MAF</td>
</tr>
<tr>
<td><strong>Maharashtra</strong></td>
<td><strong>Received</strong>: .25 MAF from total of 28 million MAF</td>
</tr>
<tr>
<td></td>
<td>(See Sardar Sarovar Project – Maharashtra Report)</td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td><strong>Costs</strong></td>
</tr>
<tr>
<td>6,406.04 crores (Rs.)</td>
<td>2020 <strong>projected costs</strong> – 70,000 Rs.</td>
</tr>
<tr>
<td><strong>Power From Increased Dam Height</strong></td>
<td><strong>2006-2007 – Received Power in MW</strong></td>
</tr>
<tr>
<td>Dam Height 110 – 121. meters</td>
<td>500 MW from Increased Dam Height</td>
</tr>
<tr>
<td>3500 MW</td>
<td></td>
</tr>
<tr>
<td><strong>Expected Arable Land from Irrigation</strong></td>
<td><strong>Received Arable Land From Irrigation</strong></td>
</tr>
<tr>
<td>3.5 lakh ha</td>
<td>1.53 lakh ha</td>
</tr>
<tr>
<td><strong>Afforestation Expected</strong></td>
<td><strong>Successful Afforestation</strong></td>
</tr>
<tr>
<td>46,358 acres</td>
<td>20% (9,271 acres)</td>
</tr>
</tbody>
</table>
Table 3.1
Timeline for Three Gorges Construction

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>Sun Yat-Sen proposes dam to create hydro-electric power and to boost industrial growth.</td>
</tr>
<tr>
<td>1932</td>
<td>Chiang Kaishek and the Nationalist government begin planning the dam.</td>
</tr>
<tr>
<td>1946</td>
<td>The Resources Committee of the Republic of China and the U.S. Bureau of Reclamation negotiate an agreement to plan a dam on the Xiling Gorge.</td>
</tr>
<tr>
<td>1954</td>
<td>Mao Zedong asks the Soviet Union for help in constructing the Three Gorges Dam due to extreme flooding at that time.</td>
</tr>
<tr>
<td>1958</td>
<td>Mao inspects plans for the Three Gorges Dam.</td>
</tr>
<tr>
<td>1969</td>
<td>Mao turns down the Three Gorges Dam Proposal based on national security issues. There is fear that it could become a target for hostile attacks on China.</td>
</tr>
<tr>
<td>1982</td>
<td>Deng Xiaoping announces support for the Three Gorges Dam.</td>
</tr>
<tr>
<td>1984</td>
<td>The government decides to build a large reservoir at the Xiling Gorge site. Objections from Chongqing change to plan to the current location of the Three Gorges Dam.</td>
</tr>
<tr>
<td>1989</td>
<td>The Yangtze Valley Planning Office decides to increase the height of the dam.</td>
</tr>
<tr>
<td>1992</td>
<td>The National People’s Congress passes the proposal to build the dam despite internal opposition.</td>
</tr>
<tr>
<td>1993</td>
<td>Construction begins with the establishment of the Chinese Three Gorges Construction Committee for oversight.</td>
</tr>
<tr>
<td>1997</td>
<td>The China Construction Bank approves loan to finance the dam’s construction.</td>
</tr>
<tr>
<td>December 2001</td>
<td>Construction of treatment plants commences.</td>
</tr>
<tr>
<td>April, 2004</td>
<td>State Environmental Protection Administration Report</td>
</tr>
<tr>
<td>2007</td>
<td>Expected completion of the dam</td>
</tr>
<tr>
<td>2008-2009</td>
<td>Construction of treatment plants completed</td>
</tr>
<tr>
<td>2009</td>
<td>Final completion of dam construction</td>
</tr>
<tr>
<td>2013</td>
<td>Generators fully operational</td>
</tr>
</tbody>
</table>
Table 3.2
Cost-benefit Analysis for the Three Gorges Dam

Perceived Financial Benefits *

<table>
<thead>
<tr>
<th>Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic growth $ 82 billion</td>
<td></td>
</tr>
<tr>
<td>Construction $27.2</td>
<td>$88 billion</td>
</tr>
<tr>
<td>Power generation $31 billion</td>
<td>$17 billion (cost of environmental damage saved)</td>
</tr>
<tr>
<td>Clean power</td>
<td>Resettlement costs: $12 billion</td>
</tr>
<tr>
<td>Flood Control $3.6 million</td>
<td>Environmental clean-up $37</td>
</tr>
<tr>
<td>Navigation $3 billion</td>
<td>Displaced people from TGP 1.4 - 1.9 billion</td>
</tr>
<tr>
<td>Electricity generated 18,200 megawatts</td>
<td></td>
</tr>
<tr>
<td>Clean water – not originally considered</td>
<td>300 million people without access to clean water</td>
</tr>
</tbody>
</table>

ACKNOWLEDGEMENTS

Finishing the International and Comparative Politics program and completing this thesis have been among the most challenging and fascinating endeavors of my life. I have been changed by my experiences and trained to perform meaningful work in the area of social justice. Everything I see in the world around me is informed by my new understandings.

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Chapter 1
Thirst for Environmental and Human Equity

Introduction

*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*

International Institute for Sustainable Development (IISD) 2010.¹

This thesis compares promised benefits and net gains of the Three Gorges Dam in China with the Sardar Sarovar Dam in India. The core of this research begins from the idea that environmental justice protects the needs of poor people by placing limitations on technology and resource use which are prerequisites for environmental sustainability (Kurian, 2000, p. 842, IISD, 2010). From the beginning, the anti-dam movements of the Sardar Sarovar Dam in India and the Three Gorges Dam in China, were asymmetrical struggles between agrarian, uneducated people and the privileged elite. The educated and wealthy, along with the government officials wielded the power of control over large infrastructure projects. This group benefited from the influx of capital from national and international investors and corporations. Those at the helm of large projects perceived the protesters as obstacles of progress.

Research Questions

Despite ardent protest movements against the construction of the Three Gorges Dam and the Sardar Sarovar Dam, these giant water infrastructure projects were indeed built over a time period that stretched from the 1980s to 2010. Regardless of construction, the protest movements

¹This concept was formulated at the October, 1987 meeting of the Bruntland Commission, commissioned by United Nations General Assembly to define and provide guidelines for sustainable development.
remained intact and grew more vocal over the last thirty years in their struggle to meet the needs of the dam-displaced populations. India is a democracy, while China is has an authoritarian government. In what ways does regime type inform the social and environmental justice issues that arise in the development of large water infrastructure projects? How did the poor minority populations in China and India mobilize international and domestic resources to raise awareness of the environmental costs of large water infrastructure projects? In countries of over a billion people spread across thousands of miles, how did rural and educated urban people unite to challenge much more powerful adversaries? Although large dams are touted as a safe and effective way to create electric power and produce water for irrigation, what were the real costs to the environment and the people displaced by these infrastructure projects? Finally, the most important question is what were the social and economic gains achieved by these movements?

**Sub-questions**

What is the legacy of the impact of anti-dam movements in India and China that goes beyond the individual targets of these movements? What bearing does it have for future anti-dam and anti-development movements? Will methods used by the two anti-dam movements, such as partnership with international organizations and use of star power, still affect the course of social protest movements for the dam displaced and can they be expanded? Nature is retaliating against unchecked economic development in the form of global warming, water scarcity, and other resource deprivations. These questions and problems are found globally where there is a fast rate of economic growth. Hopefully, the ideas generated by these protest movements will help form a more productive and human paradigm for development globally.
Literature Review

The Three Gorges Dam and the Sardar Sarovar Dam were built despite extensive local, national and international publicity. While the battles against building the dams were lost and the dams were ultimately constructed, it is worthwhile to assess the substantive gains of these two protest movements. Accessibility to information about the two protest movements varies, although there is a substantial body of knowledge about both anti-dam movements.

Environmental Effects of dams

Dam-building beginning in the 1950s was seen as essential for the generation of power and other benefits to fuel the economic growth and increased quality of life necessary for the developing countries of India and China. Because the social protest movements arose out of the negative impact of these development projects, the vast majority of the literature surveyed for this paper supports an anti-dam position. The books on the effects of dam-building were extremely critical of dams on several levels. Elmer Peterson (1954), who favored small scale water projects, wrote in scientific but impassioned prose condemning the practice of building large dams, noting their negative social impacts (Peterson, 1954). “For every claim to virtue made by the proponents of big dams, there is a clear-cut factual and demonstrable refutation” (Peterson, 2001, p. 133). This sentiment is echoed throughout the book.

In addition to the high cost of building dams, environmental problems caused by these water projects include reservoir sedimentation, the loss of spawning beds for fish and the loss of water through evaporation from the reservoirs (Peterson, 1954, p. 55). Peterson’s critique of the top-down decision-making and profiteering in dam construction and the need for communities to have a stake in decision-making, appears in most critical literature about large dam building. Huang Wanli, Peterson’s counterpart, another strenuous anti-dam scientist in China, argued in
the 1950s that blocking a flowing river (with a dam) was “a violation of the laws of nature” (Shapiro, 2001, p. 62). He correctly foresaw that holding the Yellow River’s sediments upriver by building the Samnenxia Dam to provide clear water downstream, would cause flooding in the upriver communities. The resulting dam reservoir would fill with silt unless sluice gates were built into the original structure and opened to allow the silt to flow down river (Shapiro, 2001, p. 62). Adding sluice gates would diminish the size of the dam, so his recommendation to downsize it to accommodate these gates was a “break with Soviet gigantism” (Shapiro, 2001, p. 62). As a result of his bold attempts to influence construction, he was persecuted and punished. The sluice gates were added at a later date and cost ten million yuan each (Shapiro, 2001, p. 62).

Judith Shapiro, Director of Global Environmental Policies at the School of International Service at American University, noted that the soil erosion, siltation, and deforestation caused by large dams coincided with the enormous suffering of the dam-displaced people (Shapiro, 2001, p. 64). Huang’s fight against the construction of Sanmenxia Dam prefigured Dai Qing’s struggle against the construction of the Three Gorges Dam. In Yangtze! Yangtze!, journalist and scientist Dai Qing assembled a group of essays from scientific and engineering experts that unequivocally opposed the building of the Three Gorges Dam. However, she left people out of the equation. The social impacts of the involuntary displacement of between 1.3 – 1.9 million people are immense and are inimical to the prominent issue of environmental degradation from the dam.

What happens to people who cannot grow their food because their new land is infertile, or to those that have no land rights and wind up fully unprepared for living in the foreign environment of China’s growing number of cities with a population of a million or more? Outside of selective interviews with a few people, expansive sociological and economic studies are missing. Identification of the displaced may be difficult to impossible, since they have dispersed to urban
areas as well as new rural locations. The vast problems of the dam-displaced people now reflect government failures, and so the pressure for these studies will only come from international sources.

Why have the Chinese turned their back on protecting nature? Another important voice is that of Elizabeth Economy (2005, 2007) an expert on environmental degradation in China. She places dam building in the context of China’s war on nature which dates back thousands of years (Economy, 2005, p. 27, pp. 35–36). Reconciling aggressive economic growth and massive technology with the high cost of environmental destruction, Economy argues, is a fundamental problem for the state. Social stability is undermined by unanchored, angry people, who are dealing with pollution, disease, and loss of livelihoods weakens the foundation for China’s future growth (2005, p. 263).

Asit K. Biswas (1997) employs detailed hydrological and engineering issues to understand the social and political contexts involved in large dam construction. Two of his most important conclusions are that water use grows at three times the rate of population growth and that once water tables are depleted they cannot be replaced (Biswas, 1997, p. 3). Biswas, a life-long expert on water resources, is the Founder and the President of the Third World Centre for Water Management and has continued to help shape views on water management as the author or editor of over sixty-nine books on the subject. Understanding the severity of the environmental damage and the fact that it is irreversible in most cases emphasizes the enormity of the problem and the absolute desperation of the dam-displaced people.

\[\footnote{The primary objective of the Centre in Mexico is generation of new knowledge, synthesis and application of existing knowledge, and dissemination of this information from around the globe. Retrieved from: \url{http://www.thirdworldcentre.org/english.html.}}\]
Social and Economic Impacts of Large Dams

Chinese books about protest movements against the Three Gorges Dam are rare because information inherently critical of government decision-making is not politically acceptable. Accounts of the anti-dam movement in China come from foreign media such as Human Rights Watch, Probe International, National Public Radio, the BBC, The New Internationalist, The Independent (U.K.), China Daily, China Network News, and Chinadialogue. Foreign-based scholarly sources such China Quarterly, China Economic Review, and the Chicago Review also provide coverage of the Three Gorges Dam.

Yan Tan, a human geographer and demographer, studies the “population and migration issues in China...and social applications of geographical information systems” (Tan, 2008, back-flap) as member and Research Fellow in the Department of Social Sciences at Flinders University of South Australia. Tan’s work is a descriptive scientific account of the factors involved in resettlement in general and the Three Gorges in particular. Through historical background, policy, government documents and some interviews with the displaced, she reviews the initial plan for “developmental resettlement” (Tan, 2008, p. 80) in which she maps out in a flow chart with three major systems: control, development, and support which govern ten categories such as policy, dispersal of funds, science and technology etc. The outcomes of this plan were economic profit, sustainable environments, and social benefits for the displaced (Tan, 2008, p. 80). As a realist, she notes the discrepancies between planned benefits which do not work and the added agony of displacing people again. A plan to cultivate higher elevation plots of land near the dam site did not work, and as a result, the dam-displaced people had to move again to places that were more distant and culturally unfamiliar to them.
John Mertha, a professor in Government at Cornell University, agrees that official rhetoric about resettlement is optimistic and that hurdles can be overcome by planning. While he analyzes other dams, his findings regarding the results of resettlement are almost the same as resettlement at the Three Gorges Dam, which included many false promises. Dam proponents intimated that there would be profit sharing for displaced people, although a “Developmental Resettlement” plan never congealed (Mertha, 2008, p. 30, Tan, 2008, p. 77). Duan Bin, Director of the Nujiang Prefecture Party Committee Propaganda Office, stated that resettlement offers opportunities to get out of poverty due to the creation of new jobs from tourism (Mertha, 2008, p. 30). A closer look at the post-resettlement situation of the displaced near the dams built along the Longyang Gorge in Qinghai province revealed that they did not have access to the water or the electricity generated by the dam. Their net annual income dropped to one fifth of the national average at about $220 a year, and one fifth of the people disrupted by the dam earned less than $70 a year (Mertha, 2008, p. 30).

Books that chronicle the struggles against the government and the developers of the Sardar Sarovar Dam, are primarily published in India and England and are relatively plentiful due to freedom of the press in India. The books about the social movements of the Sardar Sarovar Dam are detailed chronological descriptions of the “sustained, tedious struggle” (Sangvai, 2002, p. 147) of the protests through time such as those by Amita Bakiskar (1995), John Wood (2007) and Sanjay Sangvai (2002). The process of both the adivasi (tribal people) and non-tribal rural populations going from uninformed victims of traumatizing displacement, to locally organized movements which later connected with national and international NGOs and research, with substantive leadership by women including adivasi women and young girls (Sangvai, 2002, pp. 148-49), is probably unprecedented in the development history of India.
The *adivasi* comprise a plethora of tribal groups throughout different states in India. Many have their own social and cultural traditions, languages, and forms of economic activity. The banks of the Narmada River have provided livelihoods from tribes including the “Baiga, Gond, Korku, Bhil and Bhilala …for millennia” (Sangvai, 2000, p. 9). In the literature strong voices develop such as Medha Patkar of the *Narmada Bachao Andolan* movement and Dr. Anil Patel of the ARCH-Vahini organization in the anti-dam movement. The Sardar Sarovar dam has been extensively and publically studied by Indian scholars and the press as well.

**Resettlement and Rehabilitation**

There are many more in-depth books about issues concerning sustainable development analysis and practical guides to resettlement and rehabilitation of *oustees* from the Sardar Sarovar Dam than the Three Gorges Dam. Within this literature there is a divide between authors who maintained expectations that the Government of India would provide resettlement and rehabilitation to development-displaced people (Fisher, 1995, Cernea, 1999, & Sangvai, 2000) and later authors, who recognized that it was unlikely to happen (Scudder, 2003, Wood, 2007), although specific guidelines have been available since 1988 (Rew, Fisher, & Pandey, 2006).

The problem with displacement benefits enforcement, according to many scholars, is that sources for resettlement and rehabilitation (R&R) funds are always in competition with money needed for further investment (Rew, Fisher, & Pandey, 2006, p. 39). Financial gain is the main driver for most dam construction policy questions. The costs of environmental degradation and inadequate resettlement and rehabilitation are staggering, so the equation of financial decision-making processes for dam building must change to accommodate this.

Studies have found that the restoration of livelihoods and provisions for displaced people is cheaper and more humane in the long run (Burra, 2001). The specific financial gains of a
properly handled resettlement are unknown at this time because proper resettlement and rehabilitation has not yet occurred. Instead those funds have been lost due to corruption, post-construction action, and a lack of follow-through with nationally devised development norms carried out by local agents.

According to Hu Ming, a Chinese sociologist, even in the early stages of resettlement there has been widespread fabrication about the number of people who have been permanently resettled. County officials in Sichuan and Hubei stated that 200,000 people were successfully relocated (International Rivers Network & Human Rights in China, 1998), while in January of 1998 The Wanxian Daily reported that only 100,000 people had completed resettlement. Hu Ming also mentioned a lack of cultivatable land, inadequate compensation, and rampant corruption (International Rivers Network & Human Rights in China, 1998). The lack of specificity regarding the number of people that have been successfully resettled flows through the story of both large dams (Barber & Ryder, 1993, Del Moral, 2007, TATA Institute of Social Sciences [T.I.S.S.] 2008; World Commission on Dams [WCD], 2000).

More recent publications, such as those of Thomas Scudder (2005) and Chris de Wet (2006), analyze local, state and transnational level policies and governmental decision-making to avoid the injustices of early large dams. Other studies, such as The World Commission’s Report (2000) and Woelfle-Erskine, Cole, & Allen (2007) detail the social and environmental problems with dams as an international phenomenon, as well as presenting an array of possible solutions for water management problems.

**Women and Dam Displacement: A Loss of Power**

Women suffer more from development displacement than men, both in the home and in the planning of large development schemes. Globally, there is an inverse relationship between

The struggle over the Sardar Sarovar Dam in particular “has been marked by patriarchal conceptions of power” (Kurian, 2000, p. 853) which has negatively impacted the success of the Narmada Bachao. International Financial Organizations (IFIs), such as the World Bank, the International Monetary Fund (IMF), and other funding sources were especially criticized for providing funding for the Sardar Sarovar Dam (Yudelman, 1994, p. 251). Ultimately, changes in inheritance laws in the 2005 Hindu Succession (Amendment) Act gave women the same property rights as men and gave the family as a whole a better footing for future survival (Agarwal, 2005). Gains include increased income, better educational and nutritional opportunities for children, and better use of funds earned by the family. Owning even a small piece of land increases the chance of positive outcomes (Indian Government Planning Commission, 2007, p. 117).

Until the World Commission on Dams (2000) there had been little research on the fact that women suffered disproportionately from dam creation in areas of “social disruption, trauma, and health impacts” (McCully, 2001, p. xxxi). Understanding the dire implications of displacement for women globally is imperative since women and children form 80% of those displaced by development globally (Soto, 2005; Fernandes, 2007). The literature links the development policies of IFIs with dam-related gender issues since 65% of World Bank funding is for dams (Kumar, 2007). The study of women in development is grows daily and there is a
significant amount written about gender and dam displacement. On May 3, 2010 there were 321,000,000 internet listings for *women and development* and 148,000 for *women and dam displacement*.

There is cause for hope regarding dam development in the People’s Republic of China, as well. While China tries to censor news sources that are critical of its decision-making, the spotlight cast by the international media was instrumental in stopping the construction of dams on the Nu River. Rather than just dwell on the message that “economic growth is good for the western part of China” (Mertha, 2008, p. 145), the discussion has enlarged to issues of biodiversity and respecting cultural heritage. The hundreds of stories from international and national media contained printed information from both sides of the dam debate between 2003 – 2004 which gave rise to valuable discussion and debate within China (Mertha, 2008, p. 145).

The risk of social instability is one of the prime motivations behind better and more binding changes (Wines & Ansfield, 2010, p. A8). The politically charged debate about land usurpation in urban areas has become public as larger and more highly publicized protests are staged in China. Local protest about levelling property for development in the Laogucheng neighborhood of Beijing incited “a frenzy of of popular resistance” (Wines & Ansfield, 2010, p. A1) which highlighted similar development dramas in over seventy Chinese cities and nearby agricultural areas. The stubborn resistance from landowners and protesters, and the fact that property ownership spurs financial growth, finally convinced the National People’s Congress to rewrite the property laws in March 2007 to protect property rights in China. The law was dubbed “China’s Next Revolution” (*The Economist*, 2007) at that time because private ownership is antithetical to core tenets of Maoism. (*The Economist*, 2007).
Hypotheses

Does Regime Type Matter for Environmental Justice?

This study of the protest movements against the Three Gorges Dam and the Sardar Sarovar Dam begins with the assumption that regime type matters for how a country deals with the environment and those disadvantaged by the impact of major infrastructure projects. Political openness associated with democracies, such as “intellectual freedom, political participation and government accountability and transparency and local self-governance” (Shapiro, 2001 p. 18), would seem to indicate better environmental and social accountability. Shapiro has argued however, that the form of government itself does not seem to predict different outcomes (Shapiro, 2001, p. 17). A democracy, such as India, should provide better environmental and social outcomes from the construction of large dams. Civic freedoms such as a free press, a multi-party government, and the freedom of foreign and national NGOs to operate in India ought to constrain rapacious developers and corrupt officials from illegal actions and encourage development actors to provide enlightened resettlement and rehabilitation for its citizens. This hypothesis, by extension, examines China with the expectation that its development performance would not match that of India’s in the areas mentioned.

Financial Analysis

A primary assumption of this thesis is that local, state, and national governments would attempt to rationally calculate financial, environmental, and social costs of large dams. Why didn’t the escalating trauma of environmental destruction and unfulfilled resettlement mandates, in addition to the enormous construction costs of raising these structures cause more discussion and debate? The governments of India and China experienced rapid economic growth after World War II, however they were economically challenged at the outset of that growth.
Protesters Would Not Be Heard

Finally, the last hypothesis tested in this thesis is that uneducated tribal anti-dam protesters would not be heard in heavily populated nations that were on expedited economic growth tracks. In China and India the creation of the largest dams in the world were symbols of national power and growth and those that protested them were portrayed as unpatriotic by propaganda generated by their governments. Fear of retaliation should have stayed or significantly diminished their attempts to influence government as well as their lack of experience in seeking larger audiences for their demands.

Research Methods

Qualitative methods of research are used in the preparation of this thesis. An examination of the history of these movements includes descriptions of the movements, government policies and law, and a close view of the major personalities and organizations that propelled the anti-dam protests into long-lasting movements. The symbolic and functional reasons for dam-building are researched and the timing of the beginning of the protest movements, along with the reasons for their start in the late 1970s, is analyzed.

The Human Development Index of the United Nations is also utilized to provide a basic social and economic comparison between the people of the two countries. While economic growth has been dramatic in both countries, the dam displaced poor to begin with, are becoming even poorer. Despite the economic booms and fast annual growth rate, both India and China are still considered to be developing world countries, or countries in “the south” (Sheppard, 2010).

Finally, the actual voices of the victims of government are included in journalists’ accounts of their experiences. While measurement of the degree of trauma is the prerogative of
psychologists, a sampling of peoples’ testimony in this thesis gives insight to the suffering of those damned by this particular form of economic development.

Promised benefits, as stated in the thesis, form a moving target for anyone intent on serious financial analysis, as they are infinitely adjustable according to the propaganda needs of the governments involved and the development companies that competed for the jobs and enormous payments. The net gains also comprise an elusive target, as environmental degradation, construction failures, and the costs of the as yet unpaid bill for resettlement and rehabilitation of dam-displaced people are incaluable and will continue into the future.
Chapter 2

Sardar Sarovar Dam

*The millions of displaced people in India are nothing but refugees of an unacknowledged war.*


*If you do not move out now...when the waters rise, you will run like rats.*


Introduction

India is a unique country and has been continuously since civilized since 2500 B.C.E. and was founded by uniting a plethora of small kingdoms with shifting boundaries, similar to China. It was originally founded, like most ancient civilizations, for agriculture and trade (*Indianchild*, no date). There was great suffering and hardship during World War II and after partition, but India is now prospering at a rapid clip.

Although India is growing economically, millions live below the poverty line and lack access to basic human services. In 2009 India’s Human Development Index ranking was 134 out of the 182 countries included in the survey (Human Development Report ‘HDR’ 2009) which is low for a country with an average Purchasing Power Parity (PPP) ranking of $2,753 per annum. According to the study of 1990-2005, 34.3% of Indians live on $1 a day or less, and 80.4% live at $2 per day. 11% of the country currently does not have an improved water source (HDR, 2009). There is a terrible shortage of drinking water and currently 220 million in this increasingly dry country lack access to clean drinking water (*The Economist*, p. 30, 2009).
In the summer of 2009 there was widespread drought in over half of India’s 604 provinces but was the worst in the most poor and heavily populated states. Rice crops and wheat were down 50%-60% (The Economist, 2009, p. 27). Drought underlines a grim truth. While there is a national effort to capture and conserve water, if the monsoons don’t generate enough water, half of India’s population which is still dependent on agriculture is in dire straits. Historically, India has had water deficiencies exacerbated by a weak Indian bureaucracy that could never efficiently manage water distribution. While water is provided by rainfall, and tapping ground water through wells and pumps, the amount of water in India is decreasing, and with may disappear completely by 2050 when the population reaches 1.7 billion people (The Economist, 2009, p. 28). Some think that climate change is causing the problems which increase water scarcity and eventual disappearance. When the monsoons are abbreviated or do not occur are paired with the vanishing flow of water from the Himalayas which provide water for the Indus, Ganges and Brahmaputra Rivers water for irrigation disappears. When the rain does fall in violent storms, it often falls in the wrong place and causes flooding (The Economist, 2009, p 28).

Indian leaders have historically favored building dams for irrigation, even though two-thirds of the estimated amount of water provided by new dams is lost to siltation of dams across the country due to a total lack of maintenance (The Economist, 2009, p. 28). In addition to causing widespread environmental degradation the social havoc caused by submerged villages has caused forced displacement of untold thousands of people. Resettlement and rehabilitation (R & R) of the people variously known as Project
Affected People (PAPs), oustees, or in some cases encroachers, was minimal and varied from state to state (Saxena, 2006, p. 101).

Beginning in the 1980s, grassroots movements against dam-induced displacement emerged with the help of national and international actors. The first demonstrations and petitions called for a right to information, participation in decision-making and fair compensation packages. As momentum increased, the scale and range of demands widened considerably, including a cessation of all dam-building activities. Although the Sardar Sarovar Dam was later built, victories were achieved by the Sardar Sarovar social protest movements from 1990 - 1995 in the areas of human rights, especially for victims of displacement, that will hopefully inform planning for future economic development projects around the world. The background for their struggle and what they achieved forms the contents of this chapter.

History and Background

The Narmada River has been called “the lifeline of central India from time immemorial” (Sangvai, 2000, p. 7). The headwaters begin in the Maikal ranges of Eastern Madhya Pradesh and the river flows 1,312 kilometers through 16 Indian districts before uniting with the Arabian Sea. There are two different drainage lines. One consists of hundreds of streams from the Vinhya and Satpuda mountain ranges traveling a short distance to a main trunk line. The second system consists of slower-moving streams from rocks in the Satpuda which join into a main trunk which drains the lower valley (Sangvai, 2002, p. 7). It passes through the Indian states of Madhya Pradesh (MP) and Maharashtra where it is a 35 kilometer boundary between those states, and a 38 kilometer
boundary between Maharashtra and Gujarat. Twenty-five million people make their home in the massive river valley (Roy, 2001).

The Narmada is considered one of the seven holiest rivers in India and is celebrated in ancient tracts. According to legend, the river sprang from the sweat of Lord Shiva as he was performing the _tandav_ dance. (Shiva’s vigorous dance was believed to be the source of the cycle of life including the creation, preservation and dissolution of all things.) Thousands of temples to Shiva line the Narmada banks (Sangvai, 2002, p. 8).

There are thousands of pilgrims to the temples, _ghats_ (broad flights of stairs leading down to a river), _samadhis_ (mausoleums to honor spiritual leaders) and dargahs (Sufi shrines built over the grave of a religious figure), which line the shores on both sides of the river. Tribal and village celebrate the river in their own ways (Sangvai, 2002, p. 9).

After India’s independence in 1947, Prime Minister Jawaharlal sought to increase India’s agricultural and economic self-sufficiency by creating a five-year plan that called for the construction of several large dams (Ward, 2003). Veneration for building large multi-purpose dams was so great that at the dedication of the Bhakra Dam on the Sutlej River in 1963, Nehru named Bhakra, “the temple of a free India, at which I worship” (Ward, 2003). The fate of the Narmada Project, with its large dams, “was a foregone conclusion for Indian planners and politicians,” (Diwedi, 2006, p. xii.), despite the dire threats caused by dams to riverine communities.

India, like other nations before it, claimed the land it needed for the Sardar Sarovar Project (SSP) through the right of eminent domain, which put the national good ahead of the rights of the individuals displaced by the project. The Land Acquisition Act of 1894 established clear rights for the Indian Government to “acquire land or other
removable property for roads, canals or other public purposes on payment of fair value” (Das, 2006, pp. 139 - 40). After the Indian Independence, the Act was amended in 1967 and 1984 to expedite land acquisition and compensation (Das, 2006, p.140). The social movements that resisted displacement made this dam project one of the most passionately debated mega-projects in contemporary India and across the world.

The Sardar Sarovar Dam is part of the Narmada Valley Development Project, which is comprised of 301 large dams, 3,000 small dams, and 135 medium-sized dams on the Narmada River. This post-independence project was planned as the second-largest dam in the world and was initially proposed to address the irrigation needs of Gujarat, Madhya Pradesh and Maharashtra (Tata Institute of Social Sciences, 2008). Economic growth was the driving force behind this massive water infra-structure project. Increasing irrigation capacity through a large water project was viewed as necessary because of widespread poverty as unchecked population growth put “tremendous pressure on limited natural resources” (Ray, 2008, p. 10).

Serious consideration for the development of the Narmada River was not undertaken until 1947 when the Central Waterways, Irrigation and Navigation Commission commissioned topographic and hydrological surveys of the Narmada basin. The initial objectives of the project were flood control, power generation, and expansion of inland navigation (Report of the Narmada Water Resources Development Committee (NWRDC) 2000, p. 7). Later objectives included drinking water for all villagers as well as irrigation (T.I.S.S., 2008, pp. vii-viii.) Harnessing the Narmada River was put on the back-burner for the next several years due to a lack of funding and staffing. The pressing need for water for irrigation never diminished, so it was only a matter of time until
construction would resume and people living in the zones slated for dam construction would have to move and reconstruct their lives.

**The Displaced**

Original estimates of the number of displaced people from the Sardar Sarovar Dam start at about 200,000. Approximately 44,000 hectares of fertile farmland and woods were submerged and more than 248 farms and villages (Scudder, 2006, p.194). Due to a lack of political will, prioritization, and implementation skills, comprehensive Resettlement and Rehabilitation (R & R) for those displaced by the SSP Project were doomed almost from the start.

Proper resettlement required meeting a host of needs including providing fertile land for agrarian workers and keeping kin groups and villages intact. There was also the problem of relocating large numbers of displaced people to communities that did not necessarily have enough land for oustees or want displaced people to relocate to their towns (Wood, 2006, p. 45). Helping the unseen poor in distant rural locations was never a concrete goal for either the local or state governments. It is unsurprising then, that according to Thayer Scudder “India’s record with development-induced resettlement, I consider to be the worst of any democratically elected government” (Scudder, 2006, p. 194).

Before work began on the SSP, the Narmada River Valley residents slated for resettlement were largely self-governing, remote *adivasi* (tribal people and non-scheduled castes) settlements. The *adivasis* cultivated the valley and the forests for over a thousand years using their own established agricultural and gathering techniques to provide for 75-85% of their needs (Sangvai, 2002, p. 9). These tribal populations had their own markets,
language, and cultural and political norms. In these closely-interwoven societies, women and men were accorded equal status in inheritance, marriage and other social institutions since both participated fully in making economic decisions (Sangvai, 2002, p.10.)

The illiterate and marginalized adivasis were a disproportionate number of those caused to move out of their villages since their land was slated for submergence. 57.6% of the displaced are tribal people and 60%, according to the Commission for Scheduled Castes and Tribes (Roy, 2001). Since the tribals were a small fraction of the Indian population, their ethnic minority status provided no pressure on the government to invest in their needs. Costs for R & R were considered superfluous to the costs of the project in the eyes of the planners. In the case of the Sardar Sarovar, Project-Affected People (PAP) fit the profile of those most often harmed by development projects. Already poor, the dam-displaced people were “the most likely to become even more impoverished as a result of the move” (Turton, 2006, p. 15).

**Resettlement Agreements**

Resettlement norms were mandated by the Government of India through the Supreme Court and the 1979 Narmada Water District Tribunal (NWDT), in which water and responsibility for the displaced were to be shared among the states of Gujarat, Madhya Pradesh, Maharashtra and Rajasthan. Gujarat and Rajasthan were nominally compliant, while Madhya Pradesh and Maharashtra resisted implementation. There were also expectations based on the NWDT decision of 1979 states that the oustees would receive water for drinking, irrigation, power generation, fishing and flood control (Wood, 2007, p. 21). If the displaced were not farmers, they would receive career training. The
agreement also guaranteed that the land and services, such as water and power, would be ready for a year in advance of submergence.

The allotment of a minimum of two hectares of agricultural land was guaranteed to titled land-owning families and to major sons over the age of eighteen. This was problematic on many levels. Most native people living on the banks of the Narmada had no formal title to the land, similar to the relationship of Native Americans to the land in the United States. Many *adivasis* made all or some of their living in harmony with the forests that lined the shores and from fishing enterprises. However, those using the land, water, and forests for survival needs were termed encroachers and were not considered eligible for Resettlement and Rehabilitation (Patel, 1995, p. 180). Women at that point in time did not have the right to inherit land.

Several draft versions of a National Policy on Resettlement and Rehabilitation (NPRR) were written over the years and there was conjecture that these versions were created because of pressure from the World Bank to extend R & R to those displaced by dam projects (Fernandes, 2004; Sah, 2004, p. 6).

Problems regarding resettlement were aggravated because of the competition for water rights between the states of India due to the reorganization of the states after independence. As a result, the Government of India (GOI) created the Inter-State Water Disputes Act in 1956 which enabled a central government tribunal to make binding decisions on states competing for shared river water (Sangvai, 2002, p. 12). In 1967 the Madhya Pradesh (MP) government officials maintained that the waters of the Narmada should be for its use. The Chief Minister of MP was against the dam project because of the impending submergence of fertile farmland and his wish that the water remain for the
benefit of MP residents (Directorate of Information and Publicity, Madhya Pradesh, 1967, p. 13). Rivalry for water resources was especially intense between Gujarat and Madhya Pradesh. In 1969 the Government of India (GOI) therefore created the Narmada Water Resources Development Committee (NWRDC) chaired by Dr. A.N. Khosla, the former Governor of Orissa, to investigate competing claims (Sangvai, 2002, p. 13).

Scarcity only increased the competition and Gujarat, the more drought-prone state, tried to establish its right to a greater share of the Narmada’s water based on its irrigation needs (86.8% of the catchment area of the Narmada lies in MP and over 99% of the water is generated from there (Sangvai, 2002, p. 15). The NWDT had jurisdiction over Madhya Pradesh, Gujarat, Maharashtra, and Rajasthan. Despite opposition from Madhya Pradesh, the Tribunal divided use of Narmada water between the four states in 1979 but named Gujarat as a main beneficiary due to its extreme irrigation needs.

The award was as following: Madhya Pradesh was allowed 18.25 million acre feet (MAF) of water, Gujarat received 9 MAF, Rajasthan was awarded 0.50 and Maharashtra got only 0.25 MAF of the Narmada water (Sangvai, 2002, p. 16). This ruling was considered unfair by Jashbhai Patel, an Indian reporter (Sangvai, 2002, p. 17). Although Gujarat was a riparian state, it only contributed 0.5% of river flow to the catchment area, while it was consuming 33% of its water and 16% of the Narmada River Valley electricity (Sangvai, 2002, p. 17). The ruling also specified the dam height should be no taller than 455 feet (Sangvai, 2002, p. 16). (The height of the dam signals the amount of land submerged for the reservoir. The taller the dam, the larger the reservoir is and includes attendant dangers of flooding and the potential for causing earthquakes.)
The NWDT also mandated that all PAP and Project Affected Families (PAFs) must relocate to Gujarat. Included in the package was land that could be cultivated, civic services, and alternative living arrangements in rehabilitation villages. Gujarat was therefore ordered to “rehabilitate the affected within its territories, (provide land and services) specifically in the command areas, (those downstream) of the SSP” (Garikipatai, 2005, p. 342). This thirsty state was also ordered to compensate those unwilling to move with transportation costs. The remaining states were ordered to share in the costs of the Resettlement and Rehabilitation.

The 1979 NWDT awards failed to recognize the monetary worth of the non-wage labor of women such as child-rearing, farming, and domestic work. The tribunal specified that only men (head of households and major sons over the age of 18) who owned land should be given two hectares of cultivatable land in the area set aside for resettlement and rehabilitation. The official award offered no remuneration for women which perpetuated the patriarchal Hindu division of roles regarding labor and maintained the complete dependence of women on men for their welfare. According to Ratna Kapur “failure to take Women in Development (WID) into account…has reduced opposition to the dam to a solely male discourse which operates within the logic of the system it is trying to oppose” (Kapur, 1993, p. 61). International financial institutions (IFIs) “such as the World Bank and the International Monetary Fund (IMF), government lending agencies, as well as NGOs, ignored women’s rights in economic development planning” (O’Bannon, 1994, p. 251).

Implementation of the National Policy of Resettlement and Rehabilitation of Project Affected People (later renamed NPRR) drafted by the Ministry of Rural
Development (MRD) varied greatly by state. “No uniform and comprehensive national policy existed until 1997” (Saxena, 2006, p. 100). There were fresh attempts in 1985, 1993, and 1994 to create a new NPRR, possibly under pressure from the World Bank which in 1980 was the first development institution to create a structured and specific policy for R & R created by “social scientists, and grounded in social science research” (Fernandes & Paranjpye, 2004, p. 6). The World Bank had been heavily criticized by Michael Cernea, senior advisor to the World Bank before this point for not creating an R & R program requirement for displaced persons from its investment projects (Fernandes & Paranjpye, 2004, p. 6). “Our study found that impoverishment and brutal violation of basic human rights happen most frequently in programs that are not subject to agreements on policy guidelines and to professional outside review, supervision and evaluation,” (Fernandes & Paranjpye, 2004, p. 6).

**Information**

The 1997 NPRR also specified that all affected members of the community had a right to information including “women and members of disadvantaged groups, in all phases of planning, execution and monitoring of the Resettlement and Rehabilitation plan” (Saxena, 2006, pp. 102-103) and that all phases of the plan should be completely transparent. This compulsory right to information included the illiterate and people located in the most distant areas of the country although the literature did not reveal how it was to be implemented. The proposal also reversed the former policy of who was eligible for benefits, which had been exclusively male, and made it gender neutral.

In this document the concept of ‘family’ was defined as “every major adult member, her (his) spouse along with minor children below the age of 18 years” (Saxena, 2006, p. 105).
Every person, regardless of gender was thus entitled to equal benefits. However, those without children would receive half that of displaced people with families. While this draft recognized that a cash settlement was insufficient to buy land or obtain job training, cash compensation was the only right guaranteed to the displaced villagers (Saxena, 2006, p. 101).

In the 2002 Definition of Entitlement to Mitigation the MP state government created an “arbitrary distinction between permanently and temporarily affected families, which radically reduced the number of PAFs. However, in March 2005, the Supreme Court rescinded this ruling and “asked the state governments to rehabilitate all the affected families and major sons and included women, encroachers, and untenured laborers (T.I.S.S., 2008, p. x). Although no relationship was established in the literature, one may connect the passage of this 2005 Mitigation Ruling with that of the 2005 Hindu Inheritance Act. Both enable women to become coparceners in situations where land rights are established. A growing educated middle class would logically stand behind equal rights for women in India. The notable exception is Islamic women who under The Muslim Personal Law (Shariat) Application Act in 1937 do not have the right to inherit (Agarwal, 2005, p. 1).

Protests

Political activists in India were initially invigorated by the 20 months in 1978-1979 in which the Janata Party came to power after two years of Indira Gandhi’s tight grasp on power in her 1975 - 1977 Emergency Rule. When Gandhi returned to power in 1980, a shroud of disillusionment with the political system descended on people fighting for social change. Rather than give up, this group of experienced protesters decided to
work for social justice through activism. Their lens on the world was “socialist, Gandhian, humanist and feminist” (Wood, 2007, p. 132). This emphasis was on human rights and their objectives were to aid *oustees* obtain “the right to equality and dignity; the right to be consulted not exploited; the right of present and future generations to an undamaged environment” (Wood, 2007, p. 132). Protesters of the SSP and their national and international counterparts became part of world-wide movement to redefine the economic and social order (Wood, 2007, p. 132). During the 1980s and 1990s, NGOs concerned with the SSP proliferated in every area of India.

The loss of human rights for the dislocated people exposed a fundamental contradiction in the idea of a nation-state (Cernea, 2000, p. 17). One of the main goals of the government is to serve and protect the rights of all its citizens but building economic capacity through large infrastructure projects often compromised the rights of minority groups. The ceaseless protests of the displaced against the construction of the Sardar Sarovar Dam, was a case in point. The welfare of most *oustees* was far worse once construction of the dam commenced. While the initial protests were about submerged farmland, villages and dam height, the struggle widened to the issues of community rights and social justice.

**Violence against Protesters**

Violence in many forms was perpetrated by police on protesters who were committed to *satyagraha*, non-violent mass social action events. Sanjay Sangvai reported that on April 6, 1990 at a peaceful anti-dam demonstration in Badwani, protesters were attacked by mounted police who went “beserk, beating (with batons), jailing, and injuring hundreds of people” (Sangvai, 2000, p. 54). Attacks on villages,
arrests, grain thefts and especially incidents of raping and beating women with batons persisted until 1994. On December 25, 1990, 6,000 non-violent protesters began walking towards the Narmada dam site of Badwini. The walk was called the Vikas Sangharsha Yatra (Long March of the Valley) (Sangvai, 2000, p. 56). The marchers sang bhajans, Indian devotional songs, of Mother Narmada and walked from village to village with food and bedding along with the Samarpit Dal (the sacrificial squad) who were willing to die by drowning to save the valley (Sangvai, 2002, pp. 56 - 57).

The pro-dam faction which included politicians, industrialists and commercial interests among others created mass hysteria about the march through the regional press (Sangvai, 2002, p. 57). Chief Minister Chimanbhai Patel called the march, “aggression against Gujarat” (Sangvai, 2002, p. 57) and called on Gujarat citizens to stop the march. Thousands of police were sent to stop the marchers, who ultimately were joined by sympathizers from around the country (Sangvai, 2002, p. 57). In January a handful of the marching protesters initiated a hunger strike in order to force the World Bank to conduct a review (Sangvai, 2002, p. 58). After twenty two days of fasting by the protesters, the World Bank promised to create an Independent Review of the problems of the Sardar Sarovar Dam.

The promise of the review did nothing to inhibit unchecked political violence from the province of in other states. On July 14, 1991 activists and supporters from different parts of India convened for a Satyagraha in Manibeli, the first Maharashtra location slated for submergence (Sangvai, 2002, p. 59). The Andolan called on this group to display their steadfast resolve of doobenge, par nahin hatenge (we will drown, but not
leave). Hundreds of protesters remained in the area for approximately two months (Sangvai, 2002, p. 59).

Another attack on villagers who were reluctant to move occurred on March 21, 1992. Approximately five hundred people from the pro-dam factions from Maharashtra including police, workers, and officials from pro-dam NGOs such as ARCH-Vahini fell upon the village of Manibeli (Sangvai, 2002, p. 60). The perpetrators arrested people who had not yet moved to their resettlement location, and dismantled eighteen houses and put the house parts in trucks in full view of the inhabitants (Sangvai, 2002, p. 59). Forceful removal of village homes and destruction of their belongings sent a clear signal that there was nothing to stop the displacement of the oustees. The police stated that by enforcing the move, they were protecting the human rights of those who had elected to leave (Sangvai, 2002, p. 60). Other pro-dam supporters believed that they were supporting national interests.

In 1993, the first year whole villages were submerged, violence against activists continued unabated. It was also then that police enforcing displacement began using pre-emptive arrests in their hurry to get residents out of villages that were scheduled for submersion (Gossman, 1992). State government appeared to be complicit. “Local governments in Gujarat, publicly derided groups and individuals critical of the project, portraying activists ….whether illiterate tribal villagers or urban intellectuals ….as environmental "terrorists" and as "tools of foreign intervention" (Triedman, 1993, p. 3). Members of the Narmada Bachao Andolan (NBA) in particular were targeted.

In addition to beatings, “in other cases, whole families were pulled from their homes and forced into police vans without official warrant or explanation early in the
morning, only to be released from distant jail cells in the middle of that night” (Triedman, 1993, p. 4). There was even violence between members of the same village between those who had agreed to displacement and those who had not. Following a fight in the tiny village of Antras in Gujarat, police appeared at midnight to supposedly investigate of these fights. One victim, Thunya Khima Vaseve, described the beating.

_They beat me twice on my left cheek and three times on my right eye. They hit me with a stick on my hip...then they took me outside and beat me again four times on the hip and around three times on the left shoulder and twisted my arm. The police dragged out my mother-in-law even though she was not wearing a blouse and beat her._

Triedman, 1993, p. 6

During Thunya’s beating, his mother-in-law, was incorrectly identified by authorities as an anti-dam activist, and was taken outside to be raped and beaten with a cane on her back, hands, feet and stomach (Triedman, 1993, p. 6). The rapist was a high level official who terrorized this woman with the help of local police. She was later told "we will teach you a lesson because you think you have become greater than the government” (Triedman, 1993, p. 6). This and many other first-hand accounts of violence were presented in a report prepared by the Narmada Human Rights Panel of 1993.

As news of the violence spread, support groups for protests against the Sardar Sarovar Dam sprang up in cities like Mumbai, Delhi, Pune, Indore, Bhopal, Ahmedabad and, later, in Bengal, Karnataka Kerala, Tamil Nadu, Bihar and Rajasthan. _Asia Watch_ in June 1992 reported that those participating in demonstrations were subjected to arbitrary arrests, illegal detentions, beatings and other forms of physical abuse. These abuses appear to be part of an increasingly repressive campaign by the state governments involved to prevent the groups organizing support for the protests…and
disseminating information about the environmental and social consequences of the project (Gossman, 1992, p. 207).

At that time in India, it was also against the law to question Supreme Court judgments, according to Arundhati Roy who was arrested for speaking out against the court for criticizing large dams in (Goodman, 2009; Shahin, 2002, p. 6). Injustice against her and Medha Patkar did not go unnoticed in the press. After a demonstration of 2000 people against the Supreme Court’s decision to continue SSP construction in New Delhi, the group’s leaders including Patkar, Roy and Prashant Bhushan were accused of calling on the crowds to kill the opposition’s lawyers (Rushdie, 2001). Roy stated that the fabricated charges “indicate(s) a disquieting inclination on the part of the court to silence criticism and muzzle dissent, to harass and intimidate those who disagree with it” (Rushdie, 2001).

**NGOs**

Gujarat was a hotbed of activism created by an impressive group of NGOs that originally sprang from small groups in larger cities such as New Delhi or Ahmedabad. Among them was *Lokayan* (Transformation) formed in 1980, which was comprised of social scientists at the Centre for the Study of Developing Societies (CSDS). Its goal was to create dialogue among ordinary people affected by development projects, researchers, activists, and policy makers. It had branches in several cities. The Gujarat branch sent several articles to the local paper, *Jansatta*, which challenged the provisions of award for the *adivasis*. The *Vishamata Nirmoolan Samity* (Disparity Eradication Committee) NGO lobbied the government on behalf of the poor.
In 1982 the Centre for Social Knowledge and Action, SETU (which meant “bridge” in the Gujarati language) was created with the objective to “help marginalized people and create leadership” (Wood, 2007, p. 134). The most well-known face of anti-dam resistance in India eventually became Medha Patkar of Mumbai. From the outset of her career, she was a champion for social justice. She was a United Nations Children’s Education Fund (UNICEF) worker, social worker and a teacher at the Mumbai Tata Institute for Social Sciences. Ms. Patkar joined SETU in 1985 to help the adivasi population in the Narmada Valley. She and the Chhutra Yuva Sangharsh Vahini (Student Youth Struggle, also known as Vahini) group took the lead in protesting for the rights of the dam-displaced people since they were located close to where dam construction was already ruining lives. A pacifist couple, Ambrish and Trupti Mehta, joined Anil Patel to establish the Action Research in Community Health and Development (ARCH) (Pandey, 2007, p. 135.)

ARCH protesters joined Vahini activists and ARCH-Vahini was born in 1980 and became Gujarat’s largest social protest NGO. Another local NGO was The Rajpipla Social Services Society, which was run by Mathey Kalathil, an attorney and Catholic liberation theologian. He worked with adivasis in Kevadia where the land of six tribal villages was usurped for a worker colony of dam laborers. Among other services, Kalathil provided free legal aid to the poor. Despite these efforts, Kevadia’s population was never considered for resettlement and rehabilitation (Wood, 2007, p. 136).

When Medha Patkar began living among the project affected people in Maharashtra, she created two anti-dam groups. In 1986 the Narmada Ghati Dharagrastha Samiti (Committee for the Dam-Affected of the Narmada Valley) based in Khule,
Maharashtra, was founded and the next year The Narmada *Ghat Navnirman Samiti* (Narmada Valley New Awakening Committee) in Barwani, Madhya Pradesh (MP) began. Grassroots activist groups worked on educating the villagers about the impact of the coming submergence and how it would affect them. These activists also focused on the lack of basic services provided in resettlement communities and increased literacy in the villages by forcing the government to provide schools and adult education programs. Thus encouraged, the villagers began to conduct their own surveys on land and livestock ownership, trees, house size and the goods that they grew or collected that formed the economic basis of their lives (Oliver-Smith, 2001, pp. 77-79). In 1989 all the groups from Gujarat, Madhya Pradesh, and Maharashtra merged under the leadership of Medha Patkar and became the most well-known Narmada River NGO, the Narmada Bachao Andolan (Save the Narmada). The NBA quickly became a national organization with 150 branches (Wood, 2007, p. 140).

The displaced population in Maharashtra was completely composed of *adivasis*. In Madhya Pradesh *oustees* were primarily *adivasis*, however two-thirds of those displaced were *Patidars*, a wealthy landed class that typically exploited the landless *adivasis*. Funding for the NBA came primarily from the *Patidar* members and from a related group called *Sayhayog*, an association founded by Medha Patkar of professionals who contributed 2% of their annual income to the cause of developing “an alternative developmental path” (Wood, 2007, p. 142) for those displaced by the submergence of their villages.

The NBA worked within the Indian government’s laws to protest the construction of the SSP. The increased height of the dam combined with monsoons in 1993 and 1994
caused more villages to be submerged. As a result of both violence and horrendous damage from flooding, the NBA filed a petition “in the Supreme Court against the dam and displacement” (Sangvai, 2000, p. 67). On December 13, 1994, the Supreme Court made the report of the Five Member Group public and the court’s judgment, which called a halt to the construction at the SSP (Sangvai, 2000, pp. 67 - 69). NBA’s ability to influence a major court decision was a victory for this effective non-governmental organization.

There was a major split between the Narmada Valley NGOs in the 1980s. Essentially everyone had the same end in sight, which was to protect the environment and improve the lives of the displaced people from the SSP, however the groups decided to accomplish their goals in starkly different manners. Anil Patel and ARCH-Vahini were completely dedicated to expanding the R & R rights of Gujarat displaced people through moderate non-violent Gandhian forms of resistance. ARCH-Vahini members were embedded in the community and benefited from knowing officials who worked to promote humane arrangements for the displaced people. The group’s effectiveness was also aided by its implicit threat of social unrest in Gujarat through demonstrations unless the concerns of ARCH-Vahini were viewed sympathetically (Wood, 2007, pp. 133 - 137). ARCH-Vahini was able to achieve an increase in compensation from Rs. 3000 to Rs. 4500. This NGO eventually achieved promises of substantive resettlement benefits for the people of 19 Gujarat villages that were losing their homes (Sangvai, 2002, 19).

After rallies in 1984 ARCH-Vahini attracted the attention of the Oxford Committee for Famine Relief (OXFAM), which brought the struggle to an international level. By 1987, the Government of Gujarat gave the Sardar Sarovar PAPs the
resettlement and rehabilitation package that at least on paper, “gained recognition not only as the best ever provided in India but the best available anywhere in the third world” (Wood, 2007, p. 139).

In contrast, Medha Patkar and the NBA did not focus on resettlement and rehabilitation. Patkar’s thrust became total opposition to the Sardar Sarovar Dam. She feared that PAPs in states other than Gujarat might never be fairly compensated. “The issues of all three states should be looked at together. Since that time the Vahini and we had different paths to follow” (Baviskar, 1995, pp. 140 - 141). Some of the adivasis in these two provinces made their living through use of forest materials, fishing, and small village businesses as well as farming (Baviskar, 1995, pp. 140 - 141). As more became known about the dam, the supposed benefits of the project became suspect. The protester leaders did not believe that the project was environmentally and socially sustainable (Dharmidhikary, 1995, p. 23).

As the international profile of NBA increased, there were also criticisms from within the organization. Amita Baviskar who strongly opposed the SSP, criticized the NBA for making decisions without consulting people in the valley (Patel, 2001, p. 96). Others believed that their resettlement issues were being overlooked and that the NBA was seen “to have been as full of empty promises as the dam authorities” (Oliver-Smith, 2006, p. 78).

**Media Attention**

In addition to street demonstrations, Medha Patkar used modern media including newsletters, press briefings, films, lobbying techniques, and hunger strikes to get her anti-dam message out. The NBA worked in cooperation with the U.S. Environmental Defense
Fund (EDF), the National Wildlife Defense Fund, Japanese Friends of the Earth, and other international entities. These transnational organizations put considerable pressure on the World Bank to eventually end its funding of the SSP (Baviskar, 1995, pp. 203-205).

Two major films were produced about the Narmada struggle. *Narmada: A Valley Rises* was created by the filmmaker Ali Kazimi which documents the five-week *Sangharsh Yatra* (non-violent march) through the villages about to be submerged by the Narmada, in 1991 (The Free Library, 1996). The film was widely seen and won many awards. Another award-winning documentary film entitled *A Narmada Diary* was created by Anand Patwardhan in 1996 (Patwardan.com, 1996).

High profile publications also supported the Indian anti-dam movement. The first volume of *The Social and Environmental Effects of Large Dams* edited by Edward Goldsmith and Nicholas Hildyard was printed in 1984 and drew worldwide attention by systematically presenting the major problems with large dams for lay readers. *The Ecologist*, an environmental magazine to which Goldsmith and Hildyard also contributed, published a series of arguments against large dams (Khagram, 2004, p. 186).

Added luster for the NBA was gained by the support of famous Indians such as film star Shaban Azmi, B.D. Sharma, Commissioner for Scheduled Classes and Tribes, and one of the most famous people in the country, Baba Amte, a Gandhian social worker respected for his work with lepers. Baba Amte’s anti-dam passion was inflamed because of his eviction from his leprosarium in Anandvan, Maharashtra due to its impending submergence. Medha Patkar’s star status grew as well. In December of 1991 Medha
Patkar and Baba Amte won the Swedish Right to Livelihood Awards which recognized them as heroic international figures (Wood, 2007, p. 145).

Another important milestone in the movement against the SSP was achieved in 1999 when author Arundhati Roy, who is known for her prize-winning book, *The God of Small Things*, took up the cause of the protesters and published a lengthy essay called *The Greater Common Good*, in two Indian weekly magazines, *Outlook* and *Frontline*. The piece also appeared in excerpted form in *The Guardian*, a British newspaper. Her article detailing the history of the resistance movement against the Sardar Sarovar Dam Project defined large dams as weapons of mass destruction, along the same lines as nuclear arms (Shahin, 2002, p. 4).

**Criticism within the Indian Government**

There were also bureaucrats in the Union Water Resources Ministry who openly disagreed with the construction of the SSP. Their investigatory body, named the Five Member Group (FMG), turned in its report to the Union Government on July 21, 1994 (Sangvai, 2000, p. 66). The findings of the report mirrored that of the *Independent Review* (IR) of the World Bank (Morse Report), and criticized several aspects of the project such as the total lack of drinking water in the SSP plan, absence of adequate R & R plans for the displaced, and inadequate hydrology reports on which the SSP construction was based (Sangvai, 2000, p. 66).

**Resettlement and Rehabilitation Guidelines**

Political changes in the Indian Government coalesced around environmental issues. In November, 1980 Mrs. Gandhi was behind the creation of the Department of Environment. Later that year Parliament passed the Forest Conservation Act which gave
the Department (then Ministry) of Environment and Forests (MOEF), several new responsibilities. These included the right to demand environmental impact assessments before clearance would be given for the construction of large infrastructure projects. These agencies were mandated to look out for the rights and livelihoods of the oustees as well as the environment.

In order for the Narmada project to proceed, Gujarat and Madhya Pradesh had to “prepare alternate afforestation sites to compensate for submerged forest land; improve the rehabilitation package for displaced people; create sanctuaries for wildlife; and prepare both command and catchment areas for the dam’s negative environmental effects” (Baviskar, 1995, pp. 205-209). Clearance was not given to these two states to continue work on the Sardar Sarovar and the Narmada Sagar Dams until 1987 when drought in Gujarat made clearance inevitable. The promises made by these government agencies regarding afforestation, resettlement, and environmental restoration were never fulfilled.

International Reviews, Declarations, and Formal Studies

The protests and attendant world publicity led to several important project reviews. In 1992 the World Bank commissioned an investigation of the SSP project. It became the Independent Review (IR) from the World Bank and was headed by Bradford Morse and was later known as the Morse Report. The findings were conclusive. Lewis Preston of the Review wrote the following to the president of the World Bank:

We think that the Sardar Sarovar Projects…..are flawed, that resettlement and rehabilitation of all those displaced by the Projects is not possible under prevailing circumstances, and that the environmental impacts of the Projects have not been properly considered or adequately addressed. Moreover, we believe that the Bank shares responsibility with the borrower for the situation that has developed.

After publication of the Independent Review, the European Parliament strongly encouraged its member countries in the World Bank to stop all subsequent aid to the dam project. In the United States there were several groups working to stop the dam construction. A group called Campaign to Stop Sardar Sarovar, in league with 27 NGOs, exhorted the readers of *The New York Times* to put pressure on the World Bank to stop funding the SSP (Wood, 2007, p. 161). Leading up to the decision was also an international document calling for a cessation of World Bank Funding of large dam projects. In 1992 the World Bank’s chief lenders, the United States, Germany, and Japan led the World Bank in a vote to stop funding the SSP (Wood, 2007, p. 161). In March 1993 the Government of India announced that it would continue construction of the dam without the remainder of the World Bank funds. Pressure continued from other fronts.

The Manibeli Declaration of 1994 was named after the small Indian village of Manibeli which was submerged under more than 20 meters of water in preparation for the construction of the SSP. The Declaration, signed by over 2,000 NGOs from 44 countries, listed nine pre-conditions relating to the solution of environmental and social problems of large dams (Cultural Survival, 2009). This declaration put India’s Narmada River Project, especially the SSP, under a world spotlight greater than that of any previous development project. As a result of the negative findings of these review panels, the Supreme Court ordered the dam construction stopped on May 5, 1995 and construction was not resumed until 1999. The intended completion date was June 2005 however work was not completed until March, 2007 (Sardar Sarovar Construction Advisory Committee, 2007).
**Dam Investigations**

After a 1997 meeting convened to study some of the “controversial issues associated with large dams” (The World Commission on Dams [WCD], 2000, p. 1), representatives of the World Bank and the World Conservation Union commissioned another more comprehensive study on the development of large dams. The World Commission of Dams had 39 independent inspectors from governments, the private sector, international financial institutions, civil society organizations and affected people around the world. This was the “first comprehensive global and independent review of the performance and impacts of large dams,” (WCD, 2000, p. 1). The WCD Report, published in November 2000, was named *Dams and Development: A New Framework for Decision-Making*. This non-partisan international document supported the anti-dam position of the protest movement on the Narmada River Valley Project in particular and all other large dam projects, such as the Three Gorges Dam in China.

The most recent comprehensive review of the SSP and its failures is the 102 page review titled, *Performance and Development Effectiveness of the Sardar Sarovar Project* published in 2008 by the Tata Institute of Social Sciences (T.I.S.S.). Between 1987 – 1994 the institute had previously gathered data on the social, demographic, economic and environmental aspects of large dams on communities affected by the SSP. The summary of the 2008 document clearly showed that the planned benefits of this massive project were far below expected outcomes. (See Table 2.2 for details). Rural areas did not receive enough water however the water needs of most industrial and municipal cities were met. Financially the project was a disaster (T.I.S.S., 2008, p. x.). The planned cost of construction was rupees (Rs.) 6,406.4 *crores* at 1986 levels. The estimated cost of the
The project is expected to hit 70,000 crores by 2012 with 37% of SSP project funds used for debt repayment.

As predicted, the human displacement costs have been large. Based on the study, the original number of displaced families was 48,304, of which 37,533 were from Gujarat alone. According to the study, 40,000 families are still waiting to be resettled. Although R & R norms were created by the NWDT, the Tata Institute report showed that Madhya Pradesh constructed its own R & R package, called the Special Rehabilitation Package which allowed the state to disburse money instead of restoring cultivable land to PAPs (T.I.S.S., 2008, p. x).

**Financing**

In 1979 The World Bank became interested in the Narmada Valley Project which was called “the most ambitious river valley project ever conceived in human history” (Roy, 2001, p. 5). The project was partially secured by a $450 million World Bank loan in 1985. (Inability to repay the World Bank in a timely manner resulted in India’s need to pay 478 million dollars over the cost of the loan in financing charges (Roy, 2001, p. 5). $300 million was loaned by the International Bank of Reconstruction and Development (IBRD), and $150 million was promised in loans by the International Development Organization (Sangvai, 2002, p. 24). The Government of India’s Ministry of Environment (MOEF) had not yet sanctioned the project. “This loan from the Bank was then used to put pressure of the MOEF to accord clearance for the project.” (Vijay Paranjapye, an Indian economist, Sangvai, 2002, p. 24).

Inattention to the possibility of human suffering was also intentionally accompanied by foggy fact gathering. Policy makers and potential funders typically
preferred vague financial projections and a simplification of costs (Waterbury, 1979, p. 240). This posture explains why the elasticity of the Indian cost-benefit analysis was acceptable and how the expected benefits of the SSP project were so far off the mark.

Once the political goods of building a huge water project were established, a truly critical look at finances and future difficulties such as environmental consequences, only stood in the way of construction (Waterbury, 1979, p. 242). The dams were seen by leaders as a form of economic development which would ultimately generate “an increase in living standards, improved health and well-being for all” (Thomas, 2000, p. 23).

In the case of the dams however, these benefits did not extend to those displaced by the massive water projects. Instead, these people were viewed obstacles to progress. However the Ministry of the Environment gave clearance for the SSP on the condition that eight important studies were to be concluded before 1989 that which included: resettlement and rehabilitation, catchment area treatment, command area treatment, flora and fauna, carrying capacity, compensatory afforestation, seismicity, and health impacts. The need for these studies was not a part of the NWDT agreements (Sangvai, 2002, pp. 24-25). The Planning Commission gave its approval on October 1988 based on the conditions of the MOEF and others such as a benefit-cost ratio and a projected time for the completion of the dam. (The GOI had started displacing villages in the early 1980s even before these agreements were reached.)

There was little public accountability in the form of existing policy norms. Macro-economic emphasis on overall growth trumped the “dirty detail of sectoral resettlement schemes (Fisher, Pandey, & Rew, 2006, p. 39). Due to a lack of expertise in resettlement and rehabilitation matters and a lack of political will “some governments
prefer to maintain a policy vacuum rather than issue norms and legislation for activities for activities they know are going to be problematic, difficult and controversial” (Cernea, 1999, p. 2006, p. 42).

In a stunning reversal of past policy, the Supreme Court validated Women’s Rights to Inheritance in The Hindu Succession (Amendment) Act of 2005, (Agarwal, 2005, September 13). It gave a woman the right to inherit property equally with males “in the same manner if she had been a son” (Indian Legislation, 2005). Prior to this the “inequalities adversely affected millions of women” (Agarwal, 2005). Over half of Indian’s population is involved in agriculture which is critical for survival. Inheritance rights give women security in commonly held family property. “Symbolically it signals that daughters and sons are equally important members of the parental family….which will enhance women’s self-confidence and social worth” (Agarwal, 2005). Women suffering from dam-displacement from the SSP would be doubly-disadvantaged if they were not allowed to retain even the meager resources of their inheritances. This law gives them a better chance at survival since women make better financial decisions that benefit the entire family.

**Conclusions**

At the grassroots level, the SSP protest spearheaded by the *Narmada Bachao Andolan* movement was the first time that the marginalized tribal population had a place at the table in India. They became heroes rather than victims. Increased literacy, and the ability to collaborate with local and national advocates, allowed them to participate in shaping their own destiny. Even if PAP goals were not attained, these groups were no longer the silent victimized minority. With the help of national and international NGOs,
the news media, including print and broadcast journalism and the explosion of internet information, gave transparency to many of the issues surrounding the SSP. The longevity of the NBA is still a potent force in environmental protest to date.

There are other well-known dam protesters in India. Famous Swami, Sanderlal Bahuguna, began fighting against destructive dams such as the Tehri Dam that threaten the Ganges River in the 1980s (Sharma, 2009, p. 35). His struggle was founded on the Hindu religious traditions that stressed the importance of the Ganges River. In 2004, other holy men joined in a vocal protest of the Tehri Dam. “We have taken a vow to protest against the construction of Tehri dam. According to Swami Narendranath Saraswati, “Until Ganga (Ganges) is allowed to flow freely from Gangotri to Gangasagar and the garbage is cleaned up we will not live in peace. We are against the dam,” (Bhakta, 2004). The religious Hindu community was joined by environmentalists in protesting the interruption of the flow of the Ganges.

The bravery of the Five-Member Group of the Union Resources Ministry who in 1994 dared to disagree with the the Government of India regarding the dam project is notable. Although few in number, they created a report for the Government of India that was critical of the construction of the Sardar Sarovar Dam and related projects. This provides an opening for future acts of conscious among the well-situated government elite.

It is also a positive outcome that the Supreme Court decisions regarding the right to inheritance however did become a durable legacy for the people in India. The 2005 Hindu Succession Act has to be viewed in conjunction with the 2005 Court Decision which entitled women to R & R compensation equal to male head of households and sons
over the age of 18. More progress in this area is necessary because Muslim women at this time still do not have the right, under their laws to inherit property.

Presently the fight for basic rights for the poor and marginalized in India is highlighted by the struggles of the adivasis of the Narmada River Basin. While protestation for social justice in India will have long-term benefits, it still entails short-term risks. The legal framework of new Resettlement and Rehabilitation guidelines give credibility and hope to those that are fighting for these rights.

Presently the fight for basic rights for the poor and marginalized in India is highlighted by the struggles of the adivasis of the Narmada River Basin. This study shows that even in a democracy, while protestation for social justice in India will have long-term benefits, it still entails short-term risks. The legal framework of 2007 Resettlement and Rehabilitation guidelines gives credibility and hope to those that are fighting for these rights.
Chapter Three

Three Gorges Dam

*Economic growth is supposed to solve the problem of poverty, but it causes so much environmental destruction that poverty continues and development is undermined.*

He Bochuan, *China On the Edge*, pp. 50-51

*It is more dangerous to silence the people than dam a river.*


Introduction

After years of suffering starvation during Mao’s Cultural Revolution and failed economic policies, China is now an economic superstar. China’s influence extends across the globe as it seeks the natural resources it needs to fuel its economic expansion. For the last thirty years China’s annual economic growth has averaged 10% per year, making it the “envy of the world” (Bergsten, Freeman, Lardy & Mitchell, 2009, p. 105). The combination of trade balances and financial reserves in China was calculated to be $1 trillion dollars in 2006 (Sutter, 2008, p. 92).

China’s “furious pace of economic development” (Sutter, 2008, p. 92) has forced the country into engagement with the rest of the world to meet its need for resources, political power, and international standing (Eisenman, Heginbotham, & Mitchell, 2007, p. x). The Gross Domestic Product (GDP) is thirteen times greater than it was in 1978 when Deng Xiaoping began his program of sweeping economic reforms to increase China’s growth by opening to the global market (Bergsten, Freeman, Lardy & Mitchell, 2009, p. 105).
China’s quest for resources including oil, gas, timber, copper, steel, iron ore, and uranium pale in importance to the need for its most basic natural resource…water. Managing water resources will be the key to China’s continued rise and the key to leadership stability.

Although China has 20% of the world’s population, and has just 7% of the world’s water, it consumes 13% of the freshwater on the planet (Sekiguchi, 2006). Deserts cover 27% of China’s land and “320 million Chinese lack adequate access to clean drinking water” (Jakes, 2006). Fully one-third of these people will fall ill due to drinking tainted water and 30,000 children a year die as a result (Sekiguchi, 2006). The Chinese on average use only one-quarter of the water that consists of the per person global average. As in India, large scale dam building was seen as a key part of China’s economic growth plan by leaders from Sun Yat-sen and Mao Zedong to Wen Jiabao. While the Three Gorges Dam (TGD) was originally conceived to control flooding on the Yangtze River, providing water for irrigation and electricity for industry became more urgent goals (Yang, 2007 pp. 1-2).

Despite China’s robust economy in the past several years, its 2009 ranking of Human Development Indicators placed it only at a ranking of 92 out of 182 countries listed (United Nations Development Program, 2009). While the estimated Purchasing Power Parity (PPP) of each person was $5,383, roughly twice that of India ($2,753), this figure does not show the extreme difference between the haves and the have-nots. While the middle-class has grown significantly in China, the poor, and particularly the rural poor, have less than ever. “There’s a lot of billionaires, but there’s also a lot of poverty,”
according to C. Fred Bergsten, Director of the Peterson Institute for International Economics” (Barboza, 2009, p. 4).

This is particularly true of people who have been displaced because of reservoir building. According to a 1989 China’s Poverty Relief Agency report, seven million of the twelve million people displaced by reservoir building lived in acute poverty that includes an extreme lack of food, clothing and shelter (Kang, 1995). New York Times reporter David Barboza estimates farmers earn as little as $1 per day (Barboza, 2009, p. 4). To date, 1.138 million Chinese have been resettled, but the removal of 300,000 more people from the Three Gorges Reservoir area is pending (Wang, 2010, p.1).

**History and Background**

The Yangtze River, at 6300 kilometers, is the world’s third-largest river and has a total drainage area or basin of 1.8 million square kilometers. The head-waters begin in the high mountains of Tibet and snake their way through the mountainous southwestern area of China. The river narrows as the flow begins to move northwest to a narrow canyon called the Three Gorges. At that point it widens as it swirls towards the East South China Sea at Shanghai (Ryder and Barber, 1993, p. 1).

As of 2008, the Yangtze Valley supported 400 million people and produced 40% of the nation’s grain and 70% of its rice (Cutler, 2008, p. 1). Despite its productivity, the river has often flooded and caused the deaths of 300,000 people in the last century alone. Preventing flooding to protect the 10 million people adjacent to the river is often given as the primary reason to build the Three Gorges Dam.

Since ancient times there have been conflicting philosophies about how to control rivers. The occurrence of floods on China’s rivers was an indication to Chinese subjects
that an Emperor had lost the Mandate of Heaven, which governed his right to rule. From the 5th century B.C.E., Taoists have believed that rivers should flow freely and be directed through low levees that were widely spaced so that the river could “seek its own course” (Delfs, 1990, p. 23). The massive earthworks built in 250 B.C.E. in Dujiangyan are still able to tame Min River floods and provide water for irrigation. Conversely, Confucians stated that nature was meant to be used for the benefit of mankind and should be tightly controlled. They put their faith in high dykes constructed close together to control the flow of the river (Delfs, 1990 p. 2).

Karl Wittfogel reiterated this position in 1957 when he postulated that power in Asia comes from the control of water. He explains that the mechanical construction of large water infrastructure projects for irrigation necessitates control by a government with absolute power. By mechanically creating a “hydraulic state” (Wittfogel, 2000) that controlled monsoons to benefit rather than destroy people and crops, humans could triumph over nature (Mertha, 2008, p. 1). Equally important, a guaranteed food supply also allowed the creation of cities and areas of dense population (Wittfogel, 2000).

Sun Yat-Sen promoted building the Three Gorges Dam in the 1920s arguing that China’s path to greatness lay in water management through modern hydraulic engineering. In addition to flooding, he believed a multi-purpose dam would create large amounts of hydro-electric power, irrigation capacity, and large canals for navigation (Barber & Ryder, pp. 2-3).

The symbolic value of building the largest dam in the world also was to “trumpet commitment to nationalistic (Chinese) ideals” (Boxer, 1988, p. 99). The great dams built by the Tennessee Valley Authority inspired the construction of other large dam projects.
around the world in the 1930s (Barber & Ryder, 1993, p. 1). In the 1940s Chinese
engineers worked with engineers from the United States Bureau of Reclamation to
develop early plans for Chinese dams. The American engineers were replaced with
Soviet advisors in the 1950s. By 1958 government officials, with Chairman Mao’s
agreement, decided to build the Three Gorges Dam at a later date. Builders at the time
were fearful that the reservoir would build up too much sedimentation which could
damage the navigation aspects of the water project (Barber & Ryder, 1993, p. 4).

In 1970 the Yangtze Valley Authority proposed constructing the 40 meter-high
Gezhouba Dam 40 miles away from the site of the proposed TGD to gain needed
experience in dam building techniques. In the 1980s the dam was completed six years
behind schedule and at twice the anticipated budget (Barber and Ryder, 1993, p. 1).

In 1981, American engineering experts visited the Three Gorges Dam
construction site and subsequently signed a five year plan to provide technical assistance
to the Chinese. However, they were concerned that the dam would not stop flooding and
that it would provide a vulnerable target for military attack. They also voiced a host of
environmental concerns such as fear that the dam would trigger landslides, earthquakes,
and increased sedimentation. Their recommendation was to build a series of smaller dams
instead (Barber & Ryder, 1993, p. 5).

Mao and communist party leaders created the Great Leap Forward so China could
leap past the traditional trajectory of economic growth through the heroic outpouring of
hard work by the masses (Lieberthal, 2004, pp. 103). Mao wanted Chinese peasants to
dramatically increase the amount of grain grown and vastly accelerate the production of
steel produced without assistance from the urban economy (Lieberthal, 2004, pp. 103–
Degradation of the land was speeded by this vast increase in agricultural production. Forests, wetlands, lakes, ponds and beaches were utilized to grow the crop that ultimately destroyed all natural cover (Smil, 1984 p. 6). Despite soil scientists’ warning about “unabated soil erosion” (Barber & Ryder, 1993, p. 6) in the Yangtze Valley, which would worsen flooding and limit the efficiency of the large reservoir specified for the TGD, planning for the dam began in earnest in 1983 and was approved as a project for the Seventh Five-Year Plan (1986-1990). The reservoir project would include a 175 meter dam and a 150 meter reservoir. During this period of time when free expression was tolerated, academics, intellectuals, and the press expressed worry about building such a dam that could have so many negative impacts (Barber and Ryder, 1993, pp. 6 - 7).

Opposition to the project was so intense that members of the Chinese People’s Political Consultative Committee (CPPCC) took a 38 day trip in 1986 so that they could consult government ministries, bureaus, experts, scholars and other members of the committee in 40 open forums. The committee has a wide range of representation from different parts of the Chinese government including the Communist Party and public personalities from different professions and walks of life. It aids the government as a consensus-building mechanism. The committee’s combined recommendation was that the dam should not be built in the near future since it promised to cost $21 billion dollars (three times the original estimate) and would not be effective in flood control and navigation (Barber and Ryder, 1993, p. 1). There were also concerns about lack of control of sedimentation, the cost of power generation and the possibility of landslides and earthquakes as the American engineers had warned (Barber and Ryder, 1993, pp. 7 -
8). As a result of these concerns, creation of the dam was not included in the Seventh Five Year Plan.

Meanwhile, the United States’ dam building industry was eager to become involved in building the TGD and created a consortium called the U.S. Three Gorges Working Group, which included representatives from the U.S. Bureau of Reclamation, the U.S. Army Corps of Engineers, the American Consulting Engineers Council, Bechtel Civil and Mineral Inc., Coopers and Lybrand, Guy F. Atkinson Company, Merrill Lynch Capital Markets, Morgan Bank, Morrison-Knudsen Inc. and Stone and Webster Engineering Corporation. The U.S. Three Gorges Working Group (USTGWG) sought a joint venture with the Chinese government, with possible funding from international funding sources as well as aid from other countries. They reviewed technical aspects of a 150 meter and 180 meter plan, and also suggested cost-benefit analysis as well as social and environmental impact studies (Barber & Ryder, 1993 p. 8). This cooperative effort was to be symbolic of the long friendship between China and the U.S.

The Canadian engineers had simultaneously worked with the Chinese to secure the contracts to build the TGD and formed a working committee of their own called the Canadian Yangtze Joint Venture (CYJV) in 1986. This consortium, which included the Canadian International Development Agency (CIDA), the foreign aid arm of the Canadian government, and China’s Ministry of Water Resources and Electric Power (MWREP), along with three private Canadian companies and two Canadian state-owned utilities joined together to finance a feasibility study of their own. The World Bank in combination with CIDA and MWREP created an oversight committee for the feasibility study (Barber & Ryder, 1993, pp. 9-10).
The Canadian study was reviewed by a 400 member Examination Committee under the guidance of Qian Zhengying, then Minister of the MWREP. The Three Gorges Water Control Project Feasibility Study was completed in 1989 and recommended that a 185 meter dam with a 160 meter reservoir was possible environmentally and economically. (This report was soon criticized by Probe International in Damming the Three Gorges, What Dam Builders Don’t Want You to Know, written by nine experts [United Press International, 1990]). Probe International is an “independent environmental advocacy group that fights to stop ill-conceived aid, trade projects and foreign investments,” (Probe International, no date).

Although more than a million people were initially moved to make way for the project, the local people and the village governments had little or no objections to the plan, according to the study (Barber & Ryder, 1993, pp., p. 12). Ultimately the figure will rise much higher according to Shai Oster who stated that an additional four million people would need to be resettled because of dam projects (Oster, 2007, p. 622). In 1989, the Three Gorges Dam was one of twelve high-capacity dams to be built on the Upper Yangtze with four others slated for completion by 2020 (Brown, Magee, & Xu, 2008, p. 619). By 2008 seven of these dams were completed and two were under construction (Brown, Magee, & Xu, 2008 p. 22). The plan for the construction of twelve dams on the Yangtze is called the Three Gorges Project (TGP).

The Displaced

The most obvious problem facing the resettlers concerns the sheer number of towns and villages displaced by the 660 kilometer reservoir due to the high dam height of 175 meters. Eight county seats and 106 towns will be completely submerged (Heming,
Rees, & Waley, 2001, p. 201). Changzhou plus 34 other towns were partially inundated (Heming, Rees, & Waley, 2001, p. 201). 1599 factories and industrial locations were also flooded which meant that 484,700 urban residents were included in the number of people to be resettled (Heming, Waley, & Rees 2001, p. 201).

34,000 hectares of fertile farmland were flooded and the government did not permit the clearing of more forest land for agricultural purposes (Jen, 2004, p. 622). About 40% of the resettlers were directed to live in urban areas where they had to pay a mortgage (Jen, 2004, p. 622). As uneducated peasants, they did not necessarily have the skills needed for employment in a city. In addition to employment problems, resettlement necessitated social fragmentation. Chinese people identify with a village clan (shih), and have strong family ties but despite massive relocation efforts, “it has proven impossible to resettle whole communities at once (Lovell, 2005, p. 622.)

The displaced populations from the TGD include rare minority groups in China including the Naxi people, “one of the worlds’ only surviving matriarchal societies” (Becker, 2004, p.1). Other unique minority groups threatened by displacement are the Tibetans, Miao, Yi, Bai and Lisu groups who stand to lose their livelihoods, ancient and architecturally distinct villages, and cultural heritage sites (Becker, 2004, p.1).

A researcher for the 2003 International Rivers Network report on the TGD, Human Rights Dammed at the Three Gorges, an Investigation of Resettlement and Human Rights Problems in the Three Gorges Dam Project, summarized the major problems for the people displaced by the dam.

1. When compensation has been offered to resettlers, it has been insufficient to replace their property.
2. The land that has been offered to resettlers does not exist, or has been of inferior quality. (Chen Guojie of the Chengdu Geological Institute of China stated that even without submersion, “the local population already exceeds the environmental capacity of the Three Gorges area by 15%” (Qi, 1998, p. 57).

3. Local officials appeared to have siphoned resettlement money to infrastructure projects such as roads, schools or hotels.

4. It is widely believed that local officials have lined their own pockets with resettlement moneys. (While resettlement money is dispersed from Beijing, it is up to local officials to implement resettlement.)

5. Excessive force has been used against resettlers who protest the dam or resettlement issues. “The Three Gorges Dam has become an instrument of repression with widespread human rights abuses,” (International Rivers Network, 2003, p. 2).

   The majority of the displaced have suffered major human rights violations and significant changes in their lives and livelihoods. The lethal nature of the attacks includes beating and imprisoning people, including the elderly people who participate in the protests. In May 2002, frustrated elderly villagers along with others from town sat on rocks that were moved into the road in the village of Yaowan. The next day the village was swarming with hundreds of police and paramilitary troops in riot gear that bused away several villagers and handed down prison sentences for several (Becker, 2003, p. 3). “Peasants cannot defy the state. We dare not speak out now, or we’ll be arrested,” (Becker, 2003, p. 3).
Misinformation and Missing Information

One notable obstacle to a coordinated grassroots protest at the local, state and transnational level was the purposeful misrepresentation of the local impact on the villagers who would be affected. This took the form of a lack of information about the upcoming dam project and rosy representations by government authorities of the project benefits as well as compensation packages (Chen, 1998, p. 64). In 1992, ground-level research in three villages including Badong in Hubei Province, Yangjiapeng on the southern bank of the Yangtze, and Luoping on a tributary of the Northern part of the Yangtze, looked at the awareness level of the villagers about the TGD and what benefits they expected from the project. 100 households out of a total of 570 were questioned.

A major propaganda effort was waged by the Chinese government to sway public opinion in favor of building the Three Gorges Dam. Late in 1991 all newspapers in China, including the controversial Enlightenment Daily were ordered to publish reprints of Questions and Answers On the Three Gorges Dam composed by the Preparation Group of the Three Gorges Development Corporation which spread across several pages (Dai, 1994, p. 30). The China Daily subsequently ran a plethora of front-page dam endorsing articles by famous people including Liu Guogang, an economist who at the time was an alternate member of the Communist Party of China, CCP Central Committee who had previously been publically outspoken about his opposition to the dam construction (Dai, 1994, p. 30). The vast scale of this propaganda campaign exceeded the scope of those run during the Resistance War (1937 - 1945), the anti-Rightist campaign (1957), and the Great Leap Forward (1958 – 1960) (Dai, 1994, p. 30).
While 72% of the villagers were aware of the proposed dam, 28% did not know where it would be located. 16% of the people had heard about the dam through government sources in the form of documents or announcements, while the rest had heard about it from TV or “through the grapevine” (Ding, 1998, p. 72-73). 98% stated that the primary purpose of the dam was electricity because this was a large focus of the propaganda campaign about the dam. Villagers said that it would improve transportation in the area and attract new industries. While half of those interviewed thought that the government could build the dam with no problems, the rest agreed that there would be negative ramifications which included the submersion of homes and orange groves. A substantial number were concerned that new fertile land in the mountain areas that were home to them would be unavailable and more costly than the 550 yuan per mu (.165 acre) of land compensation that they were promised (Ding, 1998, p. 74-75).

While 67% said that they would resettle because it served the national interest, the remainder were adamantly against resettling on what they perceived as poor quality land which would lessen their standard of living. The villagers’ primary concern was with the quality of their replacement housing and also their ability to stay together as a community (Ding, 1998, pp. 79 - 80.) Those who objected to the plans were labeled as “class enemies” (Chen, 1987, p. 64) and suffered persecution and often exile. In 2002 the county government even labeled fifty-six migrant dam protesters as Falun Gong supporters and arrested them in Gaoyang, their home city, as they were preparing to march to Beijing to lodge their complaints (Economy, 2004, p. 207).
The fact that the majority of those questioned in 1992 accepted forced moves however was contraindicated in another study in a 1993 which was funded by the Ford Foundation Report which surveyed 5,461 people in six provinces. In 1995 Chinese legal scholars wrote the subsequent report, *Marching Towards the Era of Rights* to show that many Chinese were more aware of their civil rights and had faith in due process (Pei, 2003, pp. 40 - 41). (According to Pei, the study is flawed because of its “inability to correlate socioeconomic attributes with rights consciousness” [Pei, 2003.]) The survey found that almost 80% of the respondents agreed with the statement, “Private property must not be violated,” and two thirds opposed the notion that “The government may confiscate private property under any circumstance in the national interest” (Pei, 2003, p. 41).

**Protests**

In a one-party state such as the PRC, forms of protest within the government structure alerted leaders to citizen concerns. An established form of protest in China is the petition system or *xinfang*, which literally means “letters and visits or calls” (Zou, 2006, p. 1). Although there are many inadequacies in this means of protest, it is largely a satisfactory and safe way to lodge protest. The petition system is “an activity of a citizen, legal person, or other organizations to provide information, submit proposals and opinions or express grievances and petition to relevant government at all levels” (Zou, 2006, p. 1). It derives from the Confucian belief system which holds that while local officials may be found to be corrupt, the Emperor, or currently the central government, is good. A Chinese lawyer in the 2005 Human Rights Report on the Chinese petition system stated that even uneducated farmers who are unfamiliar with the legal system
maintain a persistent belief in the system. “The petitioning system shows a deep concern with fairness in Chinese society, a deep-rooted belief in Chinese culture that if you speak reasonably, you will get a good result,” (Human Rights Watch, 2005, p. 2). While the system allows the grievances of people to be heard, it gives priority to maintaining social stability (Zou, 2006, p. 3). To date there have been no reports of investigations into the systematic retaliation against petitioners in Beijing or elsewhere in China (Human Rights Watch, 2005, p. 35).

Despite the charged and dangerous political environment of the early 1990s protestation in the form of both petitions and street demonstrations resumed after 1992. The impetus for protest were commonly from people who did not want to leave their land, were inadequately compensated or received no compensation at all, and from those unable to make a living in the new locations where they were relocated. The consequences to Chinese people from the construction of the Three Gorges dam were considered “dire,” (Becker, 2003, p.1) and the towns near the TGD look as though they have been “carpet-bombed,” (Becker, 2003, p.1).

In July 1997, 10,000 peasants supported a petition and sent a stream of protests, petitions and delegations from Gaoyang to Beijing (International Rivers Network, [IRN] 2003, p. 16). This is one of the first groups to share information and cooperatively fight for sufficient compensation, (IRN, 2003, p. 16). Other towns filed early petitions as well. A May 1997 petition from Hongmiao village accused local officials of faking resettlement certificates in return for bribes (IRN, 2003, p. 17).

In September 1999, 300 peasants twice actively attacked officials in charge of resettlement (IRN, 2003, p. 16). A petition dated from January 9, 1999 charged that the
Gaoyang Party Secretary, Wang Ying, used settler relief funds for entertaining fellow officials, with “banquets, liquor and women,” (IRN, 2003, p. 17). 1,000 peasants gathered in protest in 2000 to press for fair compensation and to see the documents that detailed the disbursement of their compensation (Becker, 2003, p. 4). In response, in October 2000, Guo Shuyan, deputy director of the Three Gorges Construction Committee, told a press conference that the peasants’ complaints would be properly reviewed (IRN, 2003, p. 16).

Peasants from other towns presented petitions so that they could return home. One group marched on the Qingdao city government to present their petition on July 8, 2002 while other settlers in 2001 and 2002 staged protests to return to Fujian (IRN, 2003, p. 17). 20%-30% returned home on their own without government sanction. Others returned home to Wushan County from Suijianfu in Anhui stating that they were not provided housing and that they couldn’t find work (IRN, 2003, p. 17). Some persistent protesters stayed in their homes. These people were called “old nails” (Becker, 2003, p. 3) because they refused to move. An aged woman recounted to journalist Jasper Becker that she was staying put because the 400 yuan that she had been granted would not pay her moving costs and that affordable housing was simply not available (Becker, 2003, p. 3). Other petitions partnered with demonstrations have been successful.

In 2004, the Chongqing Green Volunteer Union collected 15,000 signatures to protest the construction of new dam on the Nu River. Local grassroots protest continued over the dam into the 1990s through 2009, especially regarding resettlement and rehabilitation, and work on the dam ceased. In March 2009, 2000 people confronted hundreds of police over the theft by local officials of $1.5 million designated for
resettlement in Jiannan township in Chongqing, according to The Information Center for Human Rights and Democracy (AP News, Inform, 2009).

Dam protests are still common in China. On April 24, 2010 residents of Hanyuan county staged a last-ditch protest over displacement from the Pubuguo dam in Sichuan province. The local government flooded the scene with armed police, firefighters, and excavators to threaten the unwilling to leave their homes or have all their belongings demolished (Adams, 2010). In 2004 the Pubuguo Dam experienced violent opposition from 10,000 protesters. Suppression of this group required the assistance of the People’s Liberation Army which imprisoned many people, some of whom were later executed (Adams, 2010).

The number of clashes between citizens and authorities especially about corruption and “the absence of property rights and the rule of law” (Adams, 2010) have grown dramatically. Outlook Daily, a Chinese news magazine reported in 2008 that mass demonstrations have risen 8,700 in 1993, to 87,000 in 2005, and to 90,000 in 2006 (Adams, 2010). There is no way to determine how many of these demonstrations are related to dams, and how many are violent. However recent violence by authorities against the Uighurs in the western portion of China demonstrates that the Chinese state is often willing to use force.

Some demonstrations of dissenting opinions in China invite retaliation. The 2005 Xinfang Regulations regarding petition rights curtailed the peoples’ right to be heard at courts in Beijing if the matter could be handled in a grassroots level and demanded that the petitioners as individuals or organizations should not face retaliation or legal action (Zou, 2006, p. 6). Instead of protecting petitioners, a 2004 study by Chinese professor
Yu Jianrong of the Chinese Academy of Social Sciences (CASS) found that 50% of the petitioners had been beaten by an official, 40% had family members that had been beaten by officials and over 50% of petitioners had been detained or imprisoned because of their petition activities (Human Rights Watch, 2005, p. 2).

Attorneys who protect protesters are not safe from persecution. While environmental protest activities that mirrored government concerns were allowed, free speech and internet freedom are still not permitted in China, although free speech is a right in the Chinese Constitution. While China has recently permitted some peaceful dissent, powerful dissident voices are not allowed. Attorneys who represent clients in civil rights and corruption cases are as vulnerable as their clients. On July 17, 2009 the offices of Gongmeng (Open Constitution Initiative) were shut down by officials from the Beijing Municipal Civil Affairs Bureau. In a related incident, Xu Zhiyong, a member of the Gongmeng, stated that the licenses of 53 other lawyers had been canceled (Wong, 2009, p. A4).

Opposition to the dam came from scientists, activists, international groups and members of the press. In the era of relative political openness preceding the protests at Tiananmen Square in 1989, guidance propulsion engineer and journalist Dai Qing published Yangzte!, Yangzte!, a book of essays from multiple authors who spoke out forcefully against building the Three Gorges Dam (Topping, 1998, p. xxii). The essays held quantifiable data about economic considerations, hydrological, ecological, and engineering issues about construction of the Three Gorges Dam. The publication of the book instigated an outpouring of articles from several newspapers and periodicals including The People’s Daily, Enlightenment Daily, Literary Gazette, Workers’ Daily,
People’s Liberation Daily, Science and Technology Entrepreneur, Literature & Arts, China Daily, Beijing Youth News, Newspaper Digest, Chinese Human Resources and Chinese Science (Rong, 1994, p. 13). Dai Qing was jailed for ten months and threatened with death after the Tiananmen protests and the book was banned. Despite government seizure of most of the books, 5,000 copies of Yangtze, Yangtze remained in circulation within the PRC due to the actions of many National People’s Congress (NPC) members who brought copies of the book back to their home districts (Rong, 1994, p. 14).

Following the ban and media attention, booksellers in Chengdu and Sichuan province realized that another edition of Yangtze, Yangtze would be a lucrative venture (Rong, 1994 in Dai, 1994 p. 15). Although the Yangtze Valley Planning Office wanted to ban the book based on factual errors, the Communist Party group within the publishing house took a stand in favor of republishing the book. According to a statement by Chief Editor Xu Yinong, the publisher believed that public debate was in order on the TGD since it would affect both the economy and local people for a long time (Rong, 1994 p. 16). Second, it was hoped that a more open discussion of the dam would facilitate further scientific studies on the dam’s merits and problems in the future (Rong, 1994 p. 16). Chengdu merchants aware of the book’s popularity had 50,000 new copies of the books published by the People’s Publishing House of Guizhou. These were circulated in the Yangtze Valley area through private distribution and retail outlets (Rong, 1994, p. 15). The first English translation was published in Great Britain in 1994.

Chinese environmentalism was championed by Tang Xiyang, author of A Green World Tour. On an eight month journey through China, he was inspired to protect the environment and threatened species and started Green Camps (Economy, 2004, p. 141).
He Bochuan, author of *China on the Edge, the Crisis of Ecology and Development*, wrote an indictment on the environmental destruction caused by economic growth, and in 1988, predicted a terrible future for China unless radical political and economic reforms were put in place (Economy, 2004, p. 141). He sounded early warnings about the surging speed of the water shortage that affects both rural and urban populations (He, 1991, pp. 35-40). The book sold 400,000 copies prior to its banning after the Tiananmen Square protests and it was circulated among the students at the historic protest (Economy, 2004 p. 141). Despite government efforts to squelch the information on dissent over the TGD, the project was under media and print scrutiny on a global scale.

**Media Attention**

After the trauma of the Tiananmen Square crackdown on June 4, 1989, Chinese protestation was effectively quashed for four years by a heavy-handed government that feared of social instability. Chinese activists lacked access to independent courts, or the ability to influence politicians. The 1.2 – 1.9 million people displaced due to the building of the Three Gorges Dam were dispersed across three provinces and did not have the ability to mount a united transnational grassroots movement against the dam (Khagram, 2004, p. 171). (This began to happen at a later date through increased leadership, media advances and the growing professionalism of protest organizations.)

Unconstrained, the world press continued to challenge the Chinese-Canadian feasibility study, called the Yangtze Joint Venture (CIPM). Articles in *The International Herald Tribune, Engineering Dimensions, The British Columbia Report* and *The Vancouver Sun* questioned the integrity of the plan citing a failure on the part of engineers to account for the “protection of lives and property” (Barber & Ryder, 1993, p.
16). In February of 1992, The International Water Tribunal in Amsterdam, which was formed to settle water mismanagement contestation, condemned the Three Gorges Project and stated that the rights and interests of the people who are affected by the dam were not being addressed. Beginning in 1992, Chinese citizens again mounted criticism of the dam (Barber & Ryder, 1993, p. 18). The building of the Three Gorges Dam was approved in 1992 despite the international firestorm.

**Criticism within the Chinese Government**

In 1992 dissidents were not the only critics of the dam. Hundreds of delegates attending that year’s National People’s Congress, wanted to postpone the construction of the dam for at least five years since they viewed previous studies about dam construction inadequate. Many in the CPPCC publicly expressed doubt about the scientific integrity of the Chinese feasibility study and called for a “complete reappraisal” (Barber & Ryder, 1993, p. 13). Criticism of this magnitude was unprecedented within the NPC. When Premier Li Peng’s proposal for the Three Gorges Dam reached the National People’s Congress in 1992, it passed with the “smallest margin in the legislature’s history” (Yang, 2007, p. 1). Fully one-third of the body voted against it. Voicing opposition to the dam and voting against it took tremendous courage, since these actions were considered anti-party and anti-government (Sullivan, 1994, p. xv).

In December 1998 Premier Zhu Rongji, who had previously voted for the TGD, forcefully criticized the dam on several counts in a government committee meeting he called for this purpose (Wang, 1999, p.1). Due to flooding in the previous year, one of his top concerns was to raise and strengthen embankments along the Yangtze River, even though this was in opposition to the Chinese feasibility study which dismissed the idea.
due to cost (Wang, 1999, p.1). Zhu Rongji also opposed the plan of resettling displaced people on higher, steeper slopes because the deforestation and terracing of the hillsides destabilized the land and encouraged soil erosion (Wang, 1999, p. 2).

According to Chinese engineer, Wang Weiluo, farming on slopes that are steeper than 25 degrees is against China’s Water and Soil Conservation Law for that very reason. As Premier of the PRC, Zhu Rongji was able to stop farming at elevations that invited soil erosion (Wang, 1999, p. 2). In his book on the TGD called * Fortune and Misfortune*, Wang also criticized the TGP based on cost overruns, inadequate resettlement plans, the dangers of dam-induced earthquakes and mudslides and quality control (Wang, 1999, p. 1 - 2). Wang also maintained that secrecy about the dams many problems could be maintained because the Three Gorges Project Development Corporation (TGPDC) had monopolistic control on the entire construction project. The corporation was in charge of everything from bidding out the project to the actual construction (Wang, 1999, p. 3). The TGPDC which is directly under the State Council had control of all the funding for the TGD, and also owned “its own newspapers, journals, colleges, and technical schools (Wang, 1999, p. 3). Negative news could not be withheld forever however.

Wang Xiaofeng, a former promoter of the TGP, broke the government silence on environmental criticism of the project on September 25, 2007 in Wuhan. He warned of hidden dangers of the project such as water pollution, landslides and “geologic disasters” (Yardley, 2007, p. 3), which were probably earthquakes. Most large reservoir projects pose earthquake hazards because of their great weight which puts extraordinary stress on geological faults. President Hu Jintao and Prime Minister Wen Jiabao demonstrated
implied criticism for the Three Gorges Dam Project by not appearing for the 2006 opening ceremony for the partial completion of the TGP.

NGOs

In China, “social activists and independent non-governmental organizations (NGOs) function independently and are not always accountable to their members, even within the environmental movement” (Wu, 2003, p. 36). Government organized non-governmental organizations (GONGOs) instead, are sometimes formed to strengthen the state as its foremost goal and the promotion of other agendas is of secondary importance. GONGOs and NGOs do serve as a link between societal, political and financial elements in China and can ease tension among diverse layers of society and government (Wu, 2003, p. 36). The most recent estimate is that there are approximately 300,000 NGOs in China (Wang, 2006).

The Chinese government made space for environmental protection activities and this has led to an uptick in the growth of environmental GONGOs and an increase in environmental action by universities, research centers, journalists and green GONGOs (Turner, 2003, p. 1). More than fifty registered green groups in 2003 promoted peaceful activities such as increasing educational awareness about local and national environmental problems. Chinese green NGOs and GONGOs were joined by journalists, scholars, students and international environmental groups without harassment from the government beginning in the early 1990s (Turner, 2003, p. 2). Many NGO members begin as government officials, journalists or editors with excellent skills in media relations. This helps smooth their relationship with party officials, especially when they shared the same message.
Partnerships with global groups such as the World Wildlife Fund (WWF), the Environmental Defense Fund (EDF), and the Canadian Civil Society Program were successful as well. These organizations promote environmental education, conduct environmental and energy-efficiency research and are responsible for on-the-ground and sustainable development projects (Turner, 2003, p. 1). An excellent example is the partnership of the HSBC Bank and the WWF to restore wetland areas in the Yangtze River region in South China. HSBC has committed over (Hong Kong) $62 million to this effort which will include Lake Hong in Hubei province, Haifeng Nature Reserve in Guandong province, and Zhangjiang Estuary Nature Reserve in Fujian province (HSBC, no date, p. 1). The EPA also is partnering with China for a Clean Fuel and Vehicles educational project, (EPA, 2005), while the Canadian International Development Fund (CIDA) is studying and supporting civil society in China (Gilley, Inbodin, & Naokes, 2008).

Print media such as *China Environment* and *China Green Times*, TV and online sources were also allowed relative press freedom as long as there was no criticism of the government (Turner, 2003). Major print criticism of the Three Gorges Dam would not be tolerated within China since the dam is still a symbol of national pride and power. Most media coverage of the negative impacts of the dam still derives from outside media sources such as *Probe International*.

**Financing**

The World Bank refused to finance the Three Gorges Project and Chinese plans to issue bonds on the international market were impeded by lack of interest. The Three Gorges Project Development Corporation founded in 1993 raised money through the China
International Capital Corporation which is 35% owned by Morgan Stanley (Yardley, 2004, p. 206). Overall, U.S. investment firms provided $830 million in funds for China Development Bank whose top investment was the Three Gorges Dam (Economy, 2004, p. 206).

The *International Rivers Network*, an international environmental NGO, created a campaign to urge Morgan Stanley to withdraw its support of the dam. Part of the pressure campaign included boycotting the Discover credit card, owned by Morgan Stanley. Trillium Asset Management, from Boston, a socially responsible investment firm, put pressure on the Citigroup and Chase Manhattan firms, among others to not aid the TGP. Bank of America declined to invest in the project (Economy, 2004, p. 206). Financial strain was heightened by corruption among local officials who were managing the site and the resettlement. Elizabeth Economy estimates that as much as $60 million was siphoned off the project which was left with shoddy engineering, dubbed by former premier Zhu Rongji as “tofu” engineering (Economy, 2004, p. 207).

Despite allegations of corruption and construction mismanagement, immediate financing for the Three Gorges Project did follow the NPC approval. The Canadian International Development Agency and the World Bank did not immediately step up to the plate and lend money to this venture. Instead, the U.S. company Merrill Lynch, a Taiwanese investment firm, and the Lippo Group of Indonesia were offered a special deal by the People’s Republic of China to provide financial support for the TGP. Financing for the dam also came from private corporations in China, Italy, Switzerland and the United States.
Environmental impact assessments and social impact assessments that were written by experts would show huge potential costs and would not serve the publicity needs of potential large dam builders. Additionally, a true cost benefit analysis which determines the net perceived value (NPV) of the Three Gorges Dam project is not possible because the figures are not backed up by hard data. (See Table 3.2) The data consists of estimates by government actors, environmentalists and activists and are easy to manipulate in different ways. NPV analysis changes in response to the reliability of future funds that the project will generate. There is also a 5% discount rate (a percentage that lowers the total profit) (Morimoto & Hope, 2005, pp. 209-210). It is inevitable that the value of the TGP will decline over time due to increased land salinization, sedimentation, desertification, low prices for electricity, high maintenance costs and diminished income from lost tourism (Morimoto & Hope, 2004, pp. 209-210). This overall depreciation is true for all large dams and is dependent on the amount of social and environmental damage incurred. The NPV also is factored by the price of electricity set by the government. If the price is low, the projected income is low.

If officials decide to paint a rosier profit picture, they can simply write into their planning that the projected cost of electricity will be higher. This is a double-edged sword as both industry and the agricultural areas both want to acquire electricity for as little as possible. In addition, longitudinal detailed geologic environmental impact studies were never done prior to dam building so both profits and costs are little more than conjecture at the outset of any dam project. The probabilistic cost benefit analysis by Risako Morimoto and Chris Hope concluded that the negative social and
environmental impacts of the TGP will always be large despite the amount of electricity generated (Morimoto & Hope, 2004, p. 213).

**International Review**

The World Commission on Dams (WCD) wrote a “rigorous, independent and global review,” (World Commission on Dams, 2000, p. ii) titled *Dams and Development: A New Framework for Decision-making*, on large dam building. Among the twelve commissioners of this global report was Medha Patkar, who led much of the Sarvar Sarovar dam protests in India (World Commission on Dams, 2000, p.vi). The inclusive report analyzed the technical and financial aspects on dams as well detailing the environmental and social issues.

This study which highlighted China’s dam building history was largely an extensive indictment of world dam building. Building large dams in riverine communities was found to have disrupted local ecosystems, biodiversity the richness of human life. “The social and cultural implications of putting a dam into such a landscape are spatially significant, locally disruptive, lasting and often irreversible,” (World Commission on Dams, 2000, p.102).

The numbers of displaced people typically undercounted the poorest people, which included those dependent on common resources such as water and forests, and those that did not have formal title to the land (World Commission on Dams, 2000, p. 105). Luo Qujin, who was displaced by the Three Gorges Dam said in an interview with reporter Melissa Chan, “I have not had a home for six years, I have no way to make a living, and I have no way of knowing what the future will bring,” (Chan, 2010, online-video). Ma Quoming a displaced father, stated that his family of six lived in one room and he is
uncertain what the future will bring for his children, (Chan, 2010, online-video). As a result, approximately 46% of the ten million resettled due to dam construction in China continue to live in extreme poverty (World Commission on Dams, 2000, p. 108). *Dams and Development*, while highlighting specific dams such as the Three Gorges Dam and the Sardar Sarovar Dam, brought critical discussion of large dam building to a global level.

**New Media Opportunities for Information and Protest Activities**

Opportunities to expand civil discourse have greatly expanded with the phenomenal growth of internet users and those who own fixed and mobile phones. Statistics published during the 2009 China Internet Conference held in Beijing, by the end of September 2009 put the number of China's Internet users at 360 million. According to Li Yizhong, director for China's Ministry of Industry and Information Technology, at the end of September 2009, China had 1.044 billion phone users, of which 720 million were mobile phones, an increase of 67.7 % over the previous year (China Tech News.com, 2009).

While Chinese central leaders have aggressively censored much of the internet through its “Great Firewall” (Fallows, 2008) technology whose level of detail allows users to scan the contents of each page, protesters have successfully used networks to organize environmental protests. In the spring of 2007 those who opposed the construction of a chemical plant in Xiamen circulated close to one million text messages to close it down. The texts alerted citizens to the toxic nature of paraxylene, a petrochemical used in the creation of polyesters (BBC News, 2007), which the factory would produce and likened it to an “atomic bomb …released over Xiamen island” (*BBC*)
News, 2007). The project was stopped, but the episode highlighted the disconnect between the central government, which is trying to limit industrial pollution, and local officials who are dedicated to money-making new plants (BBC News, 2007).

Internal protests that turn violent are rarely reported, but the annual number of public protests in China is huge. The State Security Bureau released information showing that in 2005 there were 87,000 protests, an increase of 6% from 2004 with an average of 240 incidents each day (Feuerberg, 2006, February 13). According to police in 2004 at least 3.76 million people were involved in protest demonstrations (Kahn, 2006).

**Conclusions**

One of the main accomplishments of the social protest against the TGP was attention for social justice, or the rights of people negatively affected by environmental degradation due to economic growth. China’s development projects, which include large dams, have displaced 45.1 million since 1949 (Fruggle, & Smith, 2000, p. 83). The World Commission on Dams reported that ten million Chinese people were displaced by dams in just the period between 1950 and 1990 (WCD, 2000, p. 104). Jun Jing however estimated that the figure is too low, and that ten million people in the Yangtze River Valley alone have been displaced in that time (Jun, 1999, in WCD, 2000, p. 130).

China was the first developing world country to consider that rehabilitation along with compensation that could aid people displaced by dam building (McDonald, Webber, and Duan, 2008, p. 82). PRC leaders in the 1960s submitted its first proposal for resettlement with development funds (McDonald, Webber, & Duan, 2008, p. 85). Advocating for the formulation of an official policy took much longer. It was not until 1984 that the idea was proposed to the Central Finance Leading Group (McDonald,
Webber, & Duan, 2008, p. 85). The Water Law of the People’s Republic of China was enacted in 1988 which called for the alignment of production and resettlers’ ability to make a livelihood (McDonald, Webber, & Duan, 2008, p. 86). The Regulations in Compensation for Land Acquisition and Resettlement for the Construction of Large and Medium-sized Water Conservancy and Hydroelectric Projects the “most authoritative legal document on resettlement with rehabilitation,” (McDonald, Webber, & Duan, 2008, p. 86) was proposed in 1991 (McDonald, Webber, & Duan, 2008, p. 86). There are now at least twenty-five Chinese laws regulating the resettlement and rehabilitation of people forced to move because of water infrastructure projects, which makes China unique in the developing world (McDonald, Webber, and Duan, 2008, p. 86).

Additionally China has signed a number of international treaties which extend many rights to all its citizens. In 1997 China signed the International Covenant on Social, Economic and Cultural rights, and in 1998 was a signatory of the International Covenant on Civil and Political Rights, (Baum, 2000, p. 36).

While environmental protest is more often in the headlines, progress toward environmental justice changed the nature of protest in China over time. Early protests were local and rural (Jun, 2000 pp. 215 - 216) or urban and led by intellectuals, scholars, and students (Pei, 2000, p. 27). Confrontational protests in addition to petitions characterized protest in the period of 1978 - 89 were common (Pei, 2000, p. 27). During the openness of Deng Xiaoping’s rule at that time, both peaceful and confrontational protests were common. Demonstrations are common in China which is estimated to have roughly 50,000 major protests annually, many of which are in response to environmental issues and government corruption (Economy, 2004).
China began implementing environmental laws beginning in the 1970s after it attended the Stockholm Conference on Human Environment (Beyer, 2006). Deng Xiaoping was the prime mover behind environmental laws especially those governing pollution. Among early policies was a “prevention first policy” to nullify negative effects on natural resources (Beyer, 2006). Laws requiring environmental impact assessments (EIAs) were created in the 1970s and were later reinforced by the 2003 Environmental Protection Law that reinforced earlier mandates (Beyer, 2006). However enforcement historically has been impeded by lack of implementation at the local government level which varies widely between among the provinces (Beyer, 2006). While Beyer believes that western models of environmental protection would not be effective in China, recent victories in protecting the environment belay that idea (Beyer, 2006).

Progress in exposing environmental problems and increasing citizen participation was accomplished in China partially with the participation of international partners such as the National Resources Defense Council of the United States which works with the China Environmental Cultural Promotion and the Chinese Ministry of the Environment. The NRDC gives guidance on strengthening citizen involvement with environmental impact assessments, lengthening the time allowed for public input and ending the limit on the number of public hearings (Zhang, 2010). NRDC also provides training for “hundreds of environmental protection figures, journalists, and government officials on both domestic and international implementation of environmental law and public participation” (Zhang, 2010).

Local actions have been successful as well. In Beijing a public hearing was held regarding a project to line the lakes of the Old Summer Palace with plastic and cement to
keep them full of water year round. A passing professor from Lanzhou University reported the project online since the lack of drainage could have serious effects in water-poor Beijing. This caused an immediate outcry and the project was investigated immediately by the Beijing Municipal EPB and the Haidian District EPB which determined that it violated EIA public participation laws. A hearing was held by SEPA on April 7, 2005 and attended by people from a range of professions and social status. After expert testimony, the hearing determined that the construction should be “demolished and removed” (Moore & Warren, p. 9) a victory for the process of public hearings and citizen participation. This is the model is best practice for exercising citizens’ rights in protecting the environment legally.

In the late 1990s and beyond, the national and media highlighted national and transnational alliances and demonstrations that were more peaceful and hence more acceptable to the government. Prior to this time, the government did not welcome ideas for change from its citizens. The expertise of GONGOs and NGOs with their policy entrepreneur leaders increased their organizations’ institutional capacity by using non-threatening means. These actions initiated open dialogue about issues about the environment and the rights of resettlers. This led to incremental change over time in central government policies regarding resettlers. Direct connections between social welfare laws for resettlers and their campaign for rights cannot be directly linked, but the legal restructuring is a visible gain. Working from within the government “to resist the domination of the state…(the Chinese) borrowed a time-tested and proven political tactic,” (Pei, 2000, p. 39). This includes the ability to tell one’s story in court which authenticates the justness of the process of contestation (Pei, 2000, p. 39).
Civil discourse not only enhances the rights of the individual, it enhances the legitimacy of the state, which brings the social stability that is sought by the Chinese government. This progress also makes China a better candidate for investment from organizations such as the World Bank, environmental partners, and others which will help solve its most dire problems. All of China stands to benefit in the eyes of the world if it can deal with its own citizens in a reliable, transparent and legal manner.
Chapter 4

Voices and Victories: Analysis of the Anti-Large Dam Protest Movements of the Sardar Sarovar Dam and the Three Gorges Dam

Introduction

The construction of the Three Gorges Dam in the People’s Republic of China and the Sardar Sarovar Dam in India caused massive suffering among the development-displaced people that included losing their land, livelihoods, communities and spiritual connections. In battling the powerful trifecta of often corrupt government officials, technocrats, and development industries that actively supported these dams, the largely tribal protesters in both countries put themselves at terrible risk and in the end, were unable to stop the construction of these two massive water infrastructure projects (U.N. Wire, 2000; McCully, 2003).

Yet these two anti-dam movements achieved many successes with both short and long-term benefits which included heightened visibility of their struggles at grassroots, national and international levels, improved government policies on resettlement and rehabilitation, and impacted on international loan agencies such as the World Bank and the International Bank of Development. Finally, the public nature of contestation over dam-building in China and India eventually forced a cessation of project construction of several high profile water infrastructure projects.

In India, forty million people out of a total of fifty million displaced individuals are dam-displaced people. This number, which was calculated over five decades by N.C. Saxena, former Secretary to the Planning Commission of India in 2001 (Roy, 2001). The
number of Three Gorges Dam resettlers is placed between 1.3 – 1.9 billion people.
However, in India as in China, almost none of the actors, including the national and local
governments, the marketplace, or the general public paid attention to displacement
(Serageldin, 2006, p. 46). The anti-dam movements in India and China are case studies
of suffering that united activists globally.

In 1994 three hundred and twenty-six people from forty-four countries signed the
Manibeli Declaration that tried to force the World Bank to halt funding dams until
governments began providing life-sustaining provisions for Resettlement and
Rehabilitation (Scudder, 2006, p. 136). The name was based on the 1993 Manibeli
protest against the submergence of the village of Manibeli in India, prior to the building
of the Sardar Sarovar Dam. This was followed in 1997 in Curitiba, Brazil at the First
International Meeting of Dam Affected People by the creation of The Curitiba
Declaration. This document, signed by over twenty countries including India, Taiwan,
Brazil, Chile, Lesotho, Argentina, Thailand, Russia, France, Switzerland and the United
States (RiverNet, 2008), extended the plea to “establish a fund to provide reparations to
the people forcibly evicted from their homes and lands” (Scudder, 2006, p. 136) as a
result of large dam building.

A lasting legacy of the Curitiba Declaration were the hundreds of demonstrations
in over thirty-five countries that took place on an annual basis beginning in 1998 to
memorialize the International Day of Action Against Dams and for Rivers, Water and
Life (International Rivers Network, 2008). The actions included mass demonstrations,
informative discussions, writing position papers, conferences and secular, as well as
spiritual, celebrations of rivers and water that had ethnic music, dance and prayers
The ideas of water as a human right and the immediate need to resist water ownership by private by concerns were primary focal points of many of these gatherings were (International Rivers Network, 2008). The practical considerations of life after dams became a global concern as well, while inspiring place-specific books such as Hari Mohan Mathur’s Managing Resettlement in India: Approaches, Issues, Experience and Yan Tan’s Resettlement in the Three Gorges. The emphasis on displacement and resettlement are new fields for academic study, environmental studies, public policy creation and human rights. The well-documented histories of the construction of the Sardar Sarovar Dam and the Three Gorges Dam figure prominently in widely known international publications such as the World Commission on Dams Report, Dams and Development: A New Framework for Decision-Making: An Overview. The 2008 Performance and Development Effectiveness of the Sardar Sarovar Project by the TATA Institute of Social Sciences and the WCD’s report, both concentrated on the adverse affects of large dams on both the environment and the dam-displaced people. Both utilized expert scientific and scholarly researchers. Findings from the cost benefit analyses (see Tables 2.2, 3.2) detail production power and irrigational flow that were much lower than expected. Earthquake and flooding potential from the weight of the dams’ reservoirs cannot be specifically measured, but there is agreement on the added geologic risks that the dams pose based on the size and weight of the reservoirs (Biello, 2009). Also, these studies demonstrated that these large dams were not profitable (Sun, Lin & Wang, Xu, Qiao, Chen, Luo, Yan, Zhao & Lu 1989, pp. 56 – 58; Scully, 2001, pp.1 94-195, Dams and Development: A New Framework for Decision-Making Overview, 2000, p. 11).
The Three Gorges Dam and the Sardar Sarovar Dam were designed as titans. At 175 feet high, they are the largest dams in the world and for the last thirty years have caused suffering to the poor, uneducated and indigenous tribal people in the riverine areas where they were built. The social protest movements of the Three Gorges Dam and the Sardar Sarovar Dams attempted to establish environmental justice for all people in the context of environmental change and degradation (Environmental Protection Agency, 2010).

Prior to the building of the Sardar Sarovar Dam and the Three Gorges Dam, politicians did not give cultural extinction a second thought when it impeded the advancement of technology (Goldsmith & Hildyard, 1984, pp. 19 - 20). Both India and China proceeded with the inundation of tribal lands and cultural heritage sites without heed to the practical or emotional repercussions of the affected populations. There were no socio-economic impact statements or Environmental Impact Assessment studies for any dams or reservoirs before 1981 in China (Zhang, no date, p. ix). In the quest for securing Chinese contracts, Canadian investors and engineers put together a study for 400 members of China’s Ministry of Water Resources and Electric Power. The 1989 Canadian-led Three Gorges Feasibility Study was harshly criticized by Vaclav Smil, a professor of Chinese water studies as, being a shoddy exercise. "This is not engineering and science, merely expert prostitution" (Bosshard, 2010). Thayer Scudder made several trips to India to prepare his analysis on the SSP and reported that although the negative effects of dams and people were researched in India, there was no attempt to form responsible national resettlement and rehabilitation programs prior to beginning construction (Scudder, 2003, pp. 3 - 4).
In China the lack of preliminary studies and planning was possible because the funding for the project was derived from Chinese sources such as the China Development Bank, the China International Capital Corporation, and U.S. investment firms such as Caterpillar, Cosco Shipping, Hutchison & Whampo Limited, the Lippo Group, and Goldman Sachs which were independent of the U.S. government (Johnson, 2002, pp. 15 - 16). In India, by contrast, the funding came from international loan sources such as the World Bank, the International Bank of Reconstruction and Development, and the International Development Agency, which made their loans conditional on land replacement for the displaced and also specified rehabilitation requirements (Sangvai, 2002, p. 24). Unfortunately the construction commenced without fulfillment of the requirements (Scudder, 2006, pp. 194-195).

**Recent History of Social Protest Against Large Dams**

After World War II, Indian and Chinese leaders framed their futures. British colonization of India ended with the messy division of India into Pakistan and India. China ended its “century of shame,” with the eviction from the mainland of the hated Japanese occupiers, and former foreign oppressors such as the British, although British rule of Hong Kong did not end until 1997. Both India and China needed dams for irrigation in order to provide food security. Increasing industrialization also created a vast demand for power generation.

The anti-dam movements which challenged central government decision-making previously consisted of elite urban groups. Urban elites seeking alliances with the poor and displaced in rural areas was almost unprecedented. This was especially true of
academics who felt a responsibility to the rural poor. (In the past, scholars’ primary role had been to validate decisions of the ruling-class).

In China and India the loss of human rights for the dam-dislocated people exposed a fundamental contradiction in the idea that it is a government responsibility to provide security for all of its citizens (Cernea, 2000, p. 17). Building large dams created greater wealth for the elites while the dam-displaced became poorer and more vulnerable due to loss of their homes and livelihoods.

**Media Utilization by Anti-dam Protest Groups**

Social protest movements used media effectively to gain world coverage for their activities. Medha Patkar, who founded the *Narmada Bachao Andolan*, became a media celebrity by using hunger strikes, press coverage, and lobbying techniques to enlarge the protest against the SSP (Bavistar, 2006, pp. 203 - 205). Ultimately her organization became the largest anti-dam movement in India. Cooperation with international environmental NGOs, such as the Probe International, and the International Rivers Network created publicity for protest movements against the Sardar Sarovar Dam. Arundhati Roy created more of a media spotlight for the movement.

Illegal actions against Roy and Patkar backfired and caused negative press for those trying to suppress her opinion. The Supreme Court’s false accusations about goading crowds to murder dam proponents’ lawyers by Roy, Patkar and Prashant Bhushan and Patkar’s attorney, inspired famous author Salman Rushdie to write an op-ed piece about the bizarre occurrence in the *The New York Times* (Rushdie, 2001). According to Roy, the Supreme Court of India’s actions in pursuing such high profile protesters placed “itself before the court of world opinion” (Rushdie, 2001). Other court
actions were heavily criticized by the press, such as the Supreme Court’s Narmada Judgment in 2000 to continue construction of the dam despite the mountain of evidence brought forth by the Narmada Bachao Andolan on the destitution and displacement suffered by more than 200,000 people from the construction of the SSP (Black, 2001, Cullet, 2001). The print media attention focused on the Supreme Court’s perceived lack of respect for both the affected people and the organization that had brought the suit to court (Black, 2001; Cullet, 2001).

Another high profile activist who has been an outspoken opponent of large dams and the disproportionate damage they inflict on the economically poor in India is Vandana Shiva, director of the Research Foundation on Science, Technology, and Ecology in India (Shiva, 2001). She wrote critically acclaimed books including Water Wars (1993), Staying Alive: Women, Ecology and Survival (1989), and Biopiracy (1997) which “deals with the emerging corporate monopolies on the living resources of the poor” (The Right Livelihood Award, 1993). Shiva won The Right Livelihood Award, “for outstanding vision and work on behalf of our planet and its people” (The Right Livelihood Award, 1993). She is one of the best known counter-development activists because she advocates for a people-centered participatory process in building projects, such as dams, which further economic growth.

Protests against the Three Gorges Dam gained prominence in China due to the persistent voice of journalist Dai Qing, even prior to the 1989 publication of her book Yangtze! Yangtze!. Although Dai was originally trained as a missile engineer and received secret service training in the 1960s, she later began writing for Guangming Ribao (Enlightenment Daily) in which she penned a series of investigative reports on the
persecution of intellectuals throughout the history of the Chinese Communist Party such as Wang Shiwei, Liang Shuming and Chu Anping. After leaving mainland China, Dai was named a Neiman Fellow at Harvard University and a Freedom Forum Fellow from the School of Journalism, at Columbia University as a life-long advocate of freedom of the press and environmental protection (Dai, 1998, p. 221). She is a prolific author and to date she has written twenty-seven book on the environment, her time in prison and women’s issues in China.

This volume of scientific essays was published as a result of a concerted effort on the part of scholars, journalists, artists and people in the publishing business who ran fund-raising activities to underwrite the costs of publication (Dai, 1989, p. 12). Dai planned the publication of her book just prior to the National People’s Congress annual meeting in 1989 and it was sold in hotel bookshops where delegates lodged (Dai, 1989, p. 12). China was flooded with publicity about the book and commentaries on Yangtze! Yangtze! were included in more than nine newspapers (Rong, 1989, p. 13). The magazines that featured articles about her publication were Chinese Human Resources and Chinese Science.

Concern by average citizens about the building of the Three Gorges Dam stemmed from three practical issues stressed by the press. The first concern was that the affluent tax-paying public felt that they had a right to have input about the dam and that this right should be recognized by the government (Dai, 1989, p. 13). Average citizens also believed that they had a right to discourse and information about building the Three Gorges Dam since conversation about government decisions was fairly common then (Dai, 1989, p. 14). Public interest in Yangtze! Yangtze! was spiked by the unusual

After the March, 1989 publication of the book, the Voice of the Masses magazine published five consecutive articles contesting the dam’s feasibility, and in the same month a significant number of delegates of the National Peoples’ Congress signed a petition that insisted the construction of the Three Gorges Dam be stalled or stopped. However, on April 13, 1989, dam proponents were supported by a data-driven article in the Asian-Pacific Economic Times about the necessity of the dam (Dai, 1989, p. 14). The escalation of the debate drew in the participation of ordinary taxpayers, scholars and economists. After the Tiananmen Square Massacre on June 4, 1989 Dai’s Yangtze! Yangtze! gained international notoriety, and while it was banned in China, it was distributed globally.

While the building of the Three Gorges Dam lacked meaningful transparency, major abuses were noticed and recounted. Violence against protesters, the plight of the displaced, and the lack of social justice were detailed in significant reports, such as Human Rights Dammed Off at Three Gorges which was the work of the International River’s Network (IRN, 2003). In India, in The River and Life, People’s Struggle in the Narmada Valley, journalist Sanjay Sangvai meticulously gave an account of the birth and development of the people’s protest movements against the Sardar Sarovar construction. The book’s primary focus was on the issues relating to the Narmada Bachao Andolan (Sangvai, 2000, p.i).

The research on the negative effects of dams was in the public domain prior to dam construction (Peterson 1954). The construction of the Three Gorges Dam and the
Sardar Sarovar Dams include: environmental degradation from dams including polluted water, inefficient power generation due to sedimentation, disease, deforestation, and water scarcity (World Commission on Dams, 2000; Biswas, 1997). The negative effects of inadequate resettlement and rehabilitation of the dam-displaced people and the environmental damage did not stop the construction of the dams as these consequences unfolded (See Table. 2.1 and 3.1).

Interest still abounds on the internet in the protest movements and other issues surrounding The Three Gorges Dam and the Sardar Sarovar Dam, eliciting a plethora of blogs, news, and scientific data on the world-wide web. On May 4, 2010 Google showed 174,000 postings for a search titled protest & Three Gorges Dam, and 267,000 listings for a simple Three Gorges Dam search. (The number of listings for this search is doubtless much smaller within China.) Sardar Sarovar Dam postings for protest & the Sardar Sarovar listed 11,500 hits and 72,800 postings for a simple Sardar Sarovar Dam search. Many of the listings captured news through the first four months of 2010. While the authenticity and usefulness of each listing varies considerably, the large number of listings provides useful and timely information as well. The protest movements around these dams were unique at the time of their construction and considerable residual interest in them remains.

The World Bank conducted its own Independent Review of the construction of the Sardar Sarovar Dam between 1990 – 1992 using environmental impact assessments and social impact assessments (SIAs) which analyzed the impact any part of the dam construction and its aftermath on local people. The newly redone SIAs became the model for International Guidelines and Principles for Social Assessments of the
International Association of Impact Assessments [IAIA] United Nations Environment Programme, 2004, p. 470). The integration of these two forms of assessments provides crucial information for discussion and policy formation on possible impending infrastructure projects such as large dams.

The creation of the Inspection Panel of Human Rights Violations in 1994, which responds to directly to complaints from development-affected people, became the standard for all future World Bank projects (Cullet, 2001; p. 153, Bruch, 2005; p. 340, & Kiene, 2009). The subsequent withdrawal of the $450 million loan from the World Bank for the Sardar Sarovar Dam, based on social justice and environmental issues was a major success for the anti-dam activists.

**NGOs and GONGOs**

NGO formation and membership provided the disenfranchised from the Sardar Sarovar and Three Gorges communities a voice in response to the dam proponents. The PRC has an estimated 300,000 to two million NGOs and organizations GONGOs (Mertha, 2008, p. 8) and India has an estimated 1.2 to 1.5 million NGOs. The South Asia Network on Dams has a newsletter called Dams, Rivers and People that has several links to news stories about the Sardar Sarovar Dam, including recent Indian Supreme Court Decisions, accountability studies, and displacement issues.

In 2006 Beijing officials expressed suspicion of the interaction of foreign NGOs and local organizations. The Foreign NGO’s Management Office within the Bureau of International Organizations was formed to monitor potentially suspicious work of these organizations (Mooney, 2006, p. 1). Chinese government authorities were suspicious of grants from the European Union to China to promote human rights in the Peoples’
Republic of China (Mooney, 2006, p. 2). The task was daunting because by 2005 there were 6,000 foreign NGOs operating in China (Li, 2007). As the investigations into the nature of NGO activity progressed, Chinese government fears receded since cooperation with the Chinese government to improve society was the goal of most foreign NGOs (Mooney, 2006, p. 2).

Partly as a result of this new transparency, consolidation of the dam protest movements facilitated communication between individuals, grassroots groups, national groups and the Chinese government in China. Membership in NGOs and GONGOs in China included not only protesters, students, scholars, and social scientists, they also included former members of state and central governments who had managerial and financial expertise and who had working relationships with those still in power. These civil organizations purposefully excluded anyone who had been labeled a dissident or a threat to national security. These policy entrepreneurs worked within the system of existing laws and restraints, but could still lobby for change. Creating incremental change over time in the laws pertaining to the rights of the displaced reinforced the overall priority of the Chinese government to maintain internal stability (Mertha, 2008, pp. 6 – 10).

While the NGOs in India had a similar mix of students, educated activists, and urban dwellers, these NGOs had many destabilizing problems. Save for the NBA India’s NGOs, were generally tiny (under ten people) and were poorly funded and administered. Therefore they had less institutional capacity (Kumaran, Vanderbook & Ashanta, 2008). While the Indian NGOs provide a voice for protest at the local level, there is less
communication and cohesion within the national arena (Kumaran, Vanderbook & Ashanta, 2008).

Different protest priorities between states in India severely hampered the local efforts of grassroots groups to obtain resettlement and rehabilitation. Water was mandated by the Government of India as a state issue, however resolution of disputes between states was settled by the NWDT, a national entity. Authorities in Gujarat had hammered out a beneficial and progressive resettlement and rehabilitation policy through co-operation with Arch-Vahini and OXFAM (Wood, 2007, p. 139). When Narmada Bachao Andolan, which represented adivasis in Maharashtra and some in Gujarat, changed focus to engage exclusively anti-dam activities, the government of Gujarat withdrew their promised offers of fair compensation and training. Madhya Pradesh later negotiated its own resettlement and rehabilitation package which made no land provisions and only provided cash compensation packages (T.I.S.S., 2008, p. x).

Later contestation between Gujarat and the other states for scarce water resources led them to acquire a disproportionate amount of water through the Narmada Valley Water Tribunal. The Gujarat authorities were also successful at preventing oustees from the inundated states of Maharashtra and Madhya Pradesh from resettling in the SSP command area, a stipulation of the World Bank for its loans (Scudder, 2006, p. 195). The lack of centralized control over the fractious competition between states compromised what could have been a more unified and thus stronger protest movement. It also impaired the central government’s ability to implement policies beneficial to the displaced or to control local corruption.
Technology Advances

Modern communication technologies, such as the internet and mobile phones, enhance connectivity in China. (In 1991 there were over 48,000 mobile phone users and in 2007 the number expanded to 480 million mobile phone users, a number in excess of 35% of the population [Li, 2007].) The number of internet users was estimated at 123 million in China in 2006 (Li, 2007) and in 2009, at 350 million users (China Technews.com, 2009). Zia Danielle Wigder estimates that by 2013, 17% of the world’s internet users will be in China (Wigder, 2009). Internet users in India in 2008 were estimated at 52 million (Wigder, 2009) and the number of mobile phone users in 2007 was estimated at 100 million subscribers, with an increase to 600 million by 2011 (Softpedia, 2007). The increase in connectivity will unite and strengthen protest movements in India as cheaper forms of communication such as the mobile phones proliferate in the future.

While the Chinese government has consistently censored the internet and phones, determined hackers have been able to use the internet to open new channels for communication (LaFraniere, Ansfield, LaFraniere, 2010). In India, the Supreme Court and regional government-sponsored repression of the dam-displaced continues. However, attempts to suppress information and action often fail as there is continued coverage by the world press and at least three NGOs: the Friends of Narmada (India), International Rivers Network, and Probe International (India and China) continue to the present.
Changes to Government Policy in the PRC

On January 23, 1989, a five year moratorium on criticism of the Three Gorges Dam was suggested by Yao Yin, vice-premier and director of the State Council Examination Committee of the Three Gorges Dam at the fourth session of the Seventh Standing Committee of the CPPCC (He & Si, 1994, p. 23). However, over time members of the Chinese Central government refused to walk in lock-step over the environmental and social issues regarding the Three Gorges Dam. Division of opinion among National People’s Congress members dates back to the beginning of construction in the early 1990s. In 1992 the National People’s Congress voted for construction of the Three Gorges Dam and the measure passed. However, there was a rare show of disapproval among its members when a third of the group tried to veto the construction of the Three Gorges Dam (Macartney, 2007). Although the pro-dam faction led by then Premier Li Peng won the National People’s Congress’s vote, the decision to continue construction, with the abstention of fully one-third of the body from voting, was a significant show of independent thinking by the dissenting members in a time of government conformity.

More recently, displeasure with the dam was also expressed at high central government levels.

Unspecified party watchers believe that President Hu Jintao showed disapproval of the Three Gorges Dam by not appearing at the project’s leviathan opening ceremony on May 16, 2006 (Macartney, 2007). Distancing himself from the dam was politically expedient. As it ages, there has been an onslaught of problems at the Three Gorges Dam including an increase in mudslides and water seepage from the reservoir which weakens the retaining walls. According to the 2007 Timesonline account, the reservoir has already
collapsed in ninety-one places and twenty-two miles have already caved in (Macartney, 2007). Government criticism of the dam allows more civil discourse on its problems by protester engendering public sympathy and pressure on the government to ameliorate the engineering and human problems caused by this famous structure.

**Successful Anti-Dam Protests in China**

A legacy from the Three Gorges Dam Protests was a report against the Nu River Dam Project from Global Green Grants that was funded by NGOs such as Green Earth Volunteers plus activist groups throughout Southeast China. It was so effective that Premier Wen Jiabao suspended a large dam project in April of 2004. This was seen by the media as a major victory for the protesters since so many prior dam protests were unsuccessful (Kramer-Duffield, 2005).

The national government began formulating a multi-dam plan to produce hydropower and thermal power on the Nu River and on March 14, 2003 Hunnan Province officials and the Huadian Company with State Council approval, signed a construction agreement (Mertha, 2008, p. 117). Later that year, on July 3, 2003, the Nu River was designated a World Heritage Site by United Nations Educational, Scientific and Cultural Organization because of its beautiful gorges and biological diversity.

Wang Yongchen, an environmental activist, learned about the Nu River Plan in mid-August of that year. After hearing about this design, Wang contacted He Daming, head of the Asian International Rivers Center at Yunnan University (Mertha, 2008, p. 119). He’s career included several years researching the Nu River and he immediately became the first scholarly opponent of Nu Dam Project. His anti-dam views were delivered to Nu Dam Project leaders in a paper presented to the National Research

The anti-dam protest on the Nu River was also championed by the Chinese Green Earth Volunteers who organized a petition against the dam signed by sixty-two people from environmental groups, the arts, government, and science at the second meeting of the China Environment and Culture Promotion Society on October 25, 2003 (Mertha, 2008, p. 119). Yu Xiaogang, who had participated with Green Watershed on their Lancang River anti-dam protest, added his efforts to this campaign. In November 2003, activist environmental NGOs gathered at the World Rivers and People Opposing Dams meeting in Thailand. Wang Yongchen of the Green Earth Volunteers, Friends of Nature, and Xu Xiaogang of Green World, along with signers from sixty countries signed a petition to protect the Nu River and sent it to the United Nations Educational, Scientific and Cultural Organization (UNESCO) (Mertha, 2008, p. 120). The Chinese ambassador in Thailand also received a letter from 80 concerned NGOs regarding development activities on the Nu River (Mertha, 2008, p. 120). Pro-development actors meanwhile facilitated the passage of a bill approving the “Nu River Middle and Lower Reaches Hydraulic Planning Report” through the State Council despite its lack of study of possible environmental problems (Mertha, 2008, p. 121).

Mu Guanfeng, the vice director of the Environmental Impact Assessment Office and director of the State Environmental Protection Agency’s (SEPA) Supervision Office, was immediately made suspicious by the speed of the bill’s passage and the poorly documented report. Mu’s opposition to the project drew the support of He Shaoling, a National People’s Congress delegate and senior engineer at the China Institute of Water
Resources and Hydropower Research who was against the Nu River project. On February 18, 2004, Premier Wen Jiabao called for a thorough study on the project because of its “high social attention and environmental controversy” (Mertha, 2008, p. 122). Premier Wen’s decision to suspend the dam was announced in *The New York Times* on April 9, 2004 and later in other foreign news sources including; Timesonline, *China Digital Times*, *World Watch.Org*, and *Probe International*.

Further support of the position against the Nu River continued at the grassroots level. From May 25 - 28, 2004, Yu brought a group of community leaders from the Nu River Valley to talk to peasants who had been displaced by the Manwan and Xiawan Dams on the Lancang River. Community leaders talked to people that had received no compensation for their land and made their living picking through trash. Some project-affected people reported having to endure multiple moves to avoid landslides (Mertha, 2008, pp. 129 – 130). Yu made a movie documenting the trip called *Nujian Zhi Sheng* (The Voice of the Nu River), and the DVDs were circulated among NGOs in Beijing. The jarring images of impoverished displaced people greatly helped the anti-dam cause (Metha, 2008, p. 130). There is still contestation between dam proponents and anti-dam activists about the possibility of building dams on the Nu River, but in 2006 the debate was made public by the Chinese government when it invited citizen participation in creation of the environmental impact assessment process. Although the dam construction was stopped in 2004, there is a clear potential for a reversal of that policy.

Protesters are still worried about the possible lifting of the construction ban because survey work continues at potential dam sites on the Nu River, the last free-flowing river in China (Mertha, 2008, p. 142). Wang, He Daming, Mu and their
respective NGOs work tirelessly to keep their anti-dam constituencies informed of any changes in plans for development of the Nu River. The fight to protect people and riverine environments continues elsewhere in China as well.

Unnamed Chinese experts and activists have called for a halt on a series of twelve dams on the Jinsha River (Yan, 2009). The fate of the Chinese sturgeon, which provides 17.1 tons of edible fish annually, and the complicated ecosystem in which it exists both are at risk of extinction. When the final Three Gorges Dam plan was created in 1987, The State Council set aside the upper section of the Yangtze River and intersecting Jinsha River area as a “National Yangtze Rare Fish conservation Zone” (Yan, 2009). The Three Gorges Corporation got around this restriction by pressuring the State Council to redraw the zone’s borders downstream away from the construction area which was accomplished in 2005 (Yan, 2009). Cao Wenxuan, a member of the Chinese Academy of Sciences and a seasoned researcher at the Institute of Hydrology in Wuhan, asserted that the backwater from the dam’s reservoir leaches into areas close to the fish and endangers them (Yan, 2009). Yan also pointed out that another Chinese researcher cited a faulty feasibility study that did not detail the true risk to the area’s fish (Yan, 2009).

Chinese anti-dam activists have raised strenuous protest to the building of the Xiaonanhai Dam which is thirty kilometers upstream from Chongqing and at a cost of $3.5 billion is the largest building project of the 11th Five Year Plan (Yan, 2009). On June 11, 2009, the Ministry of Environmental Protection announced that construction of the Ludilla and Longkaiku dams, also on the Jinsha River would be halted (Yan, 2009). The Chinese government learned that installation of the supports for the dams began without prior environmental impact statements or clearance from the Ministry of
Environmental Protection. The action was seen as a result of the efforts of a vigilant civil society that worked toward the suspension of all Jinsha River dams (Yan, 2009). Dai Qing and her books were instrumental in creating awareness about the environmental and social disasters that would occur as a result of the construction of the Three Gorges Dam. In the beginning of the movement, the active protest of the Three Gorges Dam was unique in China because it expanded comprehension of the project to the dam-displaced people and united all urban and rural populations in a common cause. The four years after Tiananmen broke the back of all dissent movements and disrupted the great momentum forged in the early years of protest. Dai’s expulsion from China has also distanced her from a ground-level interaction with the protesters. While news about the Three Gorges Dam and its project-affected people continues, most of the information and monitoring of the dam comes from outside agencies that do not work actively in China such as Probe International and International Rivers Network.

The scientists, scholars, activists, displaced people, NGOs, and political actors involved with current anti-dam movements on the Nu River and the Jinsha Rivers are working from within China. While they are aided by outside NGOs with money and news, they are the ones personally effecting change. The activists and policy entrepreneurs within these groups seek a public audience for their issues as a prelude to possible government policy change, especially regarding issues of resettlement and rehabilitation.

Another important advance has been made by the government by admitting that major problems exist with the TGD. In September 2007 an article in Xinhua news agency stated that there were a plethora of ecological and environmental problems that
had to be addressed by the government to prevent disaster (Macartney, 2007). The announcement was made by Wang Xiafeng, director of the Three Gorges Construction Commission. A Chinese government forum listed conflicts over land shortages in addition to environmental problems such as erosion and landslides (Macartney, 2007). At the time of the announcement, Wang stated Premier Wen Jiabao had discussed problems with the dam earlier in the year with his cabinet. Open dialogue about problems with the Three Gorges Dam has been decades in the making. Dai Qing stated protest was constant over the years, but now the current threat of civil unrest is the real incentive for government policy changes (Macartney, 2007). Although there may be fear within the central government about dam related social instability, the high construction cost of dams, their inability to produce the required energy and the disasters that are caused by them are other sound reasons to temper unquestioned support for these large feats of hydrological engineering. *Xinhua* news agency announced in September, 2009 that the real cost of the Three Gorges Dam was $37.23 billion, rather than the $8.35 billion stated by the National People’s Congress in 1992 (Graham-Harrison, 2009).

The Chinese government signaled that its original plan to meet the needs of dam-displaced people fell far short in the creation of the 2009 draft bill. This bill for $24.9 billion to properly resettle the displaced people from the Three Gorges Dam for the National People’s Congress was announced by the Chinese government (Buckley, 2009). The dollar amount exceeds the cost of the building the dam and if funding is approved, could go far in altering the lives of those who have suffered because of the Three Gorges Dam. Bills of this kind are submitted for review at government assemblies, such as the
2010 meeting of the National People’s Congress, but decisions about funding are left until later, so fulfillment of the bill is unknown at the time this paper was written.

In January 2010, *The China Daily* reported that 300,000 more people would have to be removed again from the reservoir area. Residents living too near the Yangtze River shores have contaminated the water quality and a land buffer needs to be built to reduce contamination (Wang, 2010). The move was also prompted by the danger to local residents of geologic failures, such as mudslides, according to Hu (Wang, 2010). The Chongqing Chinese People’s Political Consultative Committee survey in 2007 found “9,324 sites were potentially threatened by geographic (geologic) hazards, since 2003 because of water reserving and rainfalls,” (Basu, 2010). Even limited accountability expressed by these reports on flaws at the Three Gorges Dam allows an opening for discussion between government officials, NGOs and the public.

**Anti-Dam Victories in India**

On April 22, 2010 anti-dam protest led by the *Narmada Bachao Andolan* was successful in forcing the Ministry of Environment and Forests to halt construction of the Maheshwar Dam in Madhya Pradesh (*OneIndia*, 2010). One thousand dam-displaced *adivasi* protesters from sixty villages led by Alok Agarwal, a *Narmada Bachao Andolan* activist, staged an indefinite hunger strike that immediately gained national attention and government action. Previously, on February 22, 2010, the Union Environment Ministry issued a show cause notice to Shree Maheshwar Hydel Power Corporation Limited (SMHPCL) involved in construction of this large dam because the company had previously failed to comply with conditions of environmental clearance (*The Indian*, 2010). According to the 1986 Environment Protection Act, the state government of
Madhya Pradesh and the S. Kumar Group, the previous company in charge of construction had been instructed to complete a comprehensive rehabilitation and resettlement plan by 2001 (*The Indian*, 2010).

The reply to this request for information showed clearly that land compensation had not occurred and Union State for Environment and Forests’ Jairam Ramesh called the status rehabilitation for the 70,000 *oustees* “appalling” (*The Indian*, 2010) and stated his intention to maintain the halt on construction on this Narmada River dam until rehabilitation is completed (*The Indian*, 2010). Madhya Pradesh Chief Minister Shivraj Chauhan wrote to Prime Minister Singh protesting the action and criticized the *Narmada Bachao Andolan* as obstructionist. Ramesh is unafraid of halting dam construction and under his direction the MOEF previously stopped construction of two dams in Uttarakhand (*The Times of India*, 2010).

Another anti-dam activist in India recently proposed a novel way to stop construction on the Loharinag Pala Dam. Avimukteshwaranand of Jyotirmath in Uttarakhand, formally wrote to Environment and Forests Minister Jairam Ramesh making an offer to buy this dam which would interfere with the flow of the Ganges (Aji, 2010). He stated his willingness to raise Rs. 1,000 *crore* to cover the past expenses of the government and plans to destroy the existing structure when the sale is complete. Social activist Madhu Kishwar agreed with this action since other means of protest and action were unsuccessful (Aji, 2010).

A protest movement against the Tehri Dam, which sits on the intersection of the waters of the Ganges and the water flowing in from the Himalayan rivers, the Bhagirathi, and Bhilangana was led from the 1980s – 2004 by famous activist Sunderlal Bahuguna.
His effective non-violent protests of the dam through the years included three hunger strikes of over 45 days in duration.

The dam’s purpose was especially hard on the rural poor, as it diverted water from over sixty-one villages to provide water for New Delhi. Unlike other dam protesters, Bahuguna’s focus continues to be strongly against the construction of dams rather than for rehabilitation and resettlement rights of the displaced. His movement’s anti-dam stance was founded on the religious and cultural traditions of the Hindu religion which insists on the right of the Ganges, the home of sacred Hindu gods and goddesses, to continue as a free-flowing river and as the destination of holy pilgrimages (Sharma, 2009, p. 35). However, scientific environmental information was used by the protest movement as well as the idea that the large Tehri Dam could be a security risk for India, since it was situated only 100 kilometers from the Chinese border (Sharma, 2009, p. 38).

Minister Pranab Mukherjee, stopped construction on three large hydro power plants located on the Bhagirathi in the Uttarakashi District being constructed by the Uttarakahand Jal Vidyt Nigam Limited (gitsu4u, 2010, May 31). These water-power plants however are under review again by Ganga River Basin Authority (gitsu4u, 2010, May 31). Although this protest movement did not achieve the fame of the NBA, it has continued to oppose damming the Ganges, India’s holy river.

On November 4, 2009, Bahuguna, joined by locals, again protested the construction of megadams being constructed as part of the Subansiri Lower hydroelectric project on the Subansiri River, which is India’s largest hydroelectric project to date (The Indian, 2009). Another Indian anti-dam movement led by Akyamancha (Unified Forum) protesters from the Lakhimpur District in Assam voiced protest over the construction of
the Subansiri Lower hydroelectric project (The Indian, 2009, August 23). The protesters' vehemence came from seeing the hard life of displaced villagers from the Rangandi Project and the Karbi Langpi Project (The Indian, 2009, August 23). Bahuguna, like Shiva, won the Right Livelihood Reward for his environmental activities in 1987 and in 2009 earned the second highest Indian civilian reward, the Padma Vibhushan Award.

Finally, a group of Kachins, adivasis of Central Asian origin, and Burmese activists staged a protest in Juntar Mantar Park in New Delhi on March 15, 2010 against Chinese construction of dams on the Irrawaddy River in Kachin State (which borders the People’s Republic of China in the East, Democratic Republic of India in the West, Tibet in the North and Myanmar [Burma] in the South) (Kachin News, 2010). The protest was held in connection with the International Day of Action for Rivers on March 14, 2010 and also included a letter to Prime Minister Wen Jiabao of China and to Chinese people worldwide. This protest movement was not just about Indian dams, but displayed the freedom of speech and assembly in India and the continued tradition of dam protestation that dates from the Sardar Sarovar Protest Movement.

**Conclusions**

The gains by the protest movements against the Sardar Sarovar Dam and The Three Gorges Dam must be viewed in the context of decades-long growth and economic development in China and India. The two movements’ emphasis on the human dimension in development and the creation of environmental justice was ground-breaking. However, some of the successes achieved by these movements were pyrrhic victories. Although laws instituted to assist dam-displaced people, environmental ministries had project assessment rules, and funding agencies rewrote resettlement and rehabilitation
laws, the public goods from development have not touched the lives of *oustees* from these two famous dams.

Leaders in both movements have continued to try and maintain visibility for resettlement and rehabilitation, but media fame is fleeting. In April of 2010 the anti-dam protest of the Belo Monte dam on the Xingu River in Brazil grabbed the international headlines because *Avatar* director James Cameron decided to join local people in fighting the dam (Barrionuevo, 2010, pp. A1, A4). Cameron, who made a movie about indigenous people fighting overwhelming odds to stop development that would eradicate their land, had no previous experience with environmental causes, and the local people were ignorant of his identity other than as “a powerful ally” (Barrionuevo, 2010, p. A1). (In the long-term however, publicity for indigenous protest movements facing off with profit-seeking developers enhances interest in the greater problem.)

Requirements for scientifically conducted environmental impact assessments and rehabilitation plans from international financial institutions and government ministries are routinely ignored. The actions of the Ministry of the Environment and Forestry of India in calling a halt to dam projects until these studies are in place is a hopeful sign. The halting of the Nu River and other dam projects in China is also a very positive outcome for the indigenous people who live near these rivers.

Both the 2004 and the 2007 Government of India’s policies on resettlement and rehabilitation left out crucial promised land-for-land compensation to the dam-displaced. Both versions of the resettlement and rehabilitation policies are based on a cash-based settlement and do not provide solid promises of jobs or retraining (Dharmidhikary, 2007; National Law School, 2003). Although millions of people have been displaced from a
variety of development related projects, fulfilling the requirements for a sustainable life is still a distant dream. In part, the divide is created by the nature of India’s central government bureaucracy that creates initiatives that lose traction at the local level. Corruption, greed, and misdirection lead local officials to try and acquire contracts for development projects, such as dams, regardless of the eventual environmental deterioration of the land and living conditions.

While advances in communication technology assist protest movements, most remain at the local level due to the large percentage of Indians in rural areas. 74% of the Indian population lives in 638,365 villages, according to the 2001 Indian census (Indiazone, 2009). Most villages have a population of one thousand people or less (Indiazone, 2009). While the Sardar Sarovar Dam became a source of national debate and protest, the high visibility of the movement may have been an anomaly. According to Sirisha Naidu, an economist who investigates social and economic development issues in India, the established hierarchical social system has remained in place. Elites receive the power and public goods and the poor, despite a growing awareness of their situation, remain poor (Naidu, 2010).

While the People’s Republic of China is a one-party authoritarian state, like India, the responsibility for implementing government policy devolves to the provinces and local officials. In building the Three Gorges Dam, money slated for resettlement and rehabilitation did not make it to the dam-displaced due to corruption and non-compliance. The project affected people are lost among the 200 million migrants who moved to the cities to find low-wage factory work in an increasing urban country (Pilling, 2010). Their troubles are made worse because of the loss of their hukou, or local registration that
allowed the government to track them, and provide benefits (Pilling, 2010). While China is far more technologically advanced than India in urban development, technology, communication and media capacity, the dam-displaced population has moved from poor to very poor.

In the end, the social protest movements of the Sardar Sarovar and the Three Gorges Dams have been subsumed by the larger environmental issues such as air pollution and global warming that face China and India. Both countries and the world are running out of water due to the large dams, pollution, droughts, poor irrigation and industrial practices. The lack of water will stop economic growth and kill people but the unsustainable practices continue. The governments of these two developing countries are making energy choices based on short-term needs at a risk of social disruption and great environmental peril.
Chapter 5

Conclusion

This thesis examines the creation of environmental justice in southern nations experiencing accelerated economic growth. Study of the protest movements against the Sardar Sarovar Dam in India and the Three Gorges Dam in China across the last thirty years demonstrates that substantive gains by grassroots groups, aided by outside sources, were achieved despite heavy opposition from the government and those in dam-building industries. Clean water availability from dams, particularly large dams, is one of the most essential drivers of socio-economic development (Zhang, no date, p. iii). Substantial amounts of water are necessary to sustain large population bases in cities and to provide water for irrigation, navigation, and industry. Annual growth rates of 8% - 10% cannot be achieved without it.

Regime Type and Environmental Justice

Regime Type does not necessarily inform environmental justice policies. Initially I expected to find a significant difference between India and China in environmental and social sustainability. Although the benefits of democracy such as free speech, assembly, and a democratically elected government would seem to support superior environmental and social stability, research in this thesis shows that both countries grapple with many of the same issues in the same way. The overall regime type of democratic India and authoritarian China is not the essential indicator in the way each nation responds to environmental fragility. Both India and China are developing countries which are rushing headlong into economic growth. This is the impetus to build
enormous dams without prior regard to properly done long term EIAs. Trees are felled, and land is cleared with no thought regarding the potential hazards of large dams such as water pollution, disease, increased sedimentation, desertification, and an increased risk for earthquakes and floods. Policy changes in dam construction were made in large part because of the active resistance of protesters such as the NBA and the relentless release of information. Media sources continually provided news regarding environmental degradation and the plight of the displaced in the displaced.

Neither country fully assesses or responds sufficiently to the needs of people imperiled and displaced by large dam creation. Both China and India use national law in the form of eminent domain to remove people from riverine lands that they have inhabited for millennia. When relocation is occurs, people are sent to infertile lands near the dam at high elevations where agriculture is impossible or they are resettled to distant and culturally unfamiliar states. In both countries the most common scenario was government dispersal of cash compensation at discounted rates to dam refugees at that left people poorer than before displacement. Democracies are notably undemocratic in the way they impose dam-building on unwilling local populations. This is true all over in the world including the democracies of the U.S., Brazil, Mexico, Japan, and Thailand.

The conception of large dam projects which displace local populations began in the U.S. with the Tennessee Valley Authority dam projects was the brainchild of Franklin Delano Roosevelt. He realized that use of the media could expand his influence through the construction of water infrastructure projects which were presented to the public as a way to conserve natural resources (Black, 1998, p. 1). There were other ways to create electricity and jobs, but the large dams ultimately became iconic symbols of national
power (Black, p. 1). The foundational idea was that a governmental display of power over nature would give Americans the confidence to buy into the New Deal (Black, 1998, p.1).

The world movement to build large dams began in the 1940s and was largely supported by the World Bank (Martinez, 2004, p. 125). The cost-benefit analysis did not include the increase of costs that might arise in the future and were calculated at current rates which unfairly reduced the compensation rates. The EIAs used to determine costs were termed extremely inadequate (Martinez-Alier, 2004 p. 125). Epic problems were apparent from the construction of the earliest large dams built in the U.S., but other democracies followed the U.S. in building large expensive dam projects regardless.

Mexico now plans to build a mega-dam in La Parota, Guerro as part of a regional development plan. This construction would entail flooding a jungle valley and displacing 25,000 villagers who were never consulted about the project. Some farmers found out their land had been claimed for construction when heavy equipment rolled onto their property to begin construction (Álvarez, P., Carlsen, L., Chacón, O., Collins, M., Loperena, C. & Verdum, R., 2010). The Federal Electricity Commission was successfully prosecuted for falsifying documents related to their absence of performing legally mandated notification to the local people. Local protests ensued with involvement of the United Nations and the Mexican government was chastised by the International Water tribunal. However the International Bank of Development (IBD) is still moving forward with dam construction (Álvarez, et al., 2010).

The same disastrous dam-building is happening in Brazil with, Inter-American Development Bank (IDB) funding. In 1999 a dam called the CH Cana Brava was
constructed that displaced more than 1,000 families who were primarily composed of people descended from African slaves that settled in Northeastern Brazil (Carlsen & Collins, 2010). Town meetings were held with military police present since the pro-dam actors wanted to discourage community involvement. To date approximately two thirds of the families have not yet been resettled (Álvarez, et al., 2010).

Building the Pac Mun Dam in Thailand was the source of protestation after the Electrical Generating Authority of Thailand began construction in 1997. 20,000 villagers suffered as fishing was degraded by the dam. (Imhoff, no date). The World Commission on Dams called the project a failure (Imhof, A. & Srettachau, 2000) as did the Ubon Ratchatani University findings in the Pak Mun Dam Report, 2002, and the Thai Villagers’ Research Project Report of 2002. The gates of the dam are closed eight months of the year (Imhoff, no date).

Japan planned construction of the Sondu-Miriu Dam on the Miriu River in Kenya in conjunction with the Kenyan government and the Kenyan Electricity Generating Company, KenGen. The construction project was accused of an array of abuses by the displaced people including: violence against protesters, lack of consultation with the displaced, improper and extremely low valuation of their land and extreme difficulty getting compensation, corruption and nepotism in crew hiring, health problems due to construction, and submersion of cultural shrines, among other complaints (International Rivers Network, 2001). The intentional imposition of environmentally and socially destructive infrastructure projects on an unwilling populace in this case, as in others, repeats with great detail, the suffering imposed by the European colonization of African countries which devastated the continent and still has consequences today. There is an
overbearing imperative of self-interest that governs the actions of most powerful nations, whether they are democratic or some other regime type.

**Mobilizing for Protest**

A collaboration of grassroots organizations, national civic groups, and international NGOS formed the backbone of the protest movements in India. Prior to this point in history, the role of the displaced local populations was ignored and people were removed at the will of the government. The local populations were educated about the upcoming dams and stirred to action by extraordinary activists such as Medha Patkar and Anil Patel. International media which included news papers and magazines, movies, and later the internet kept close tabs on the protesters and their suffering. Marches, demonstrations, state violence against the *adivasi* were well-documented so that the world, as well as those in isolated communities, followed the unfolding narrative of the movements.

In China the protests utilized a variety of methods including the use of the *xinfang* petition system, which allows people to communicate directly with government officials about unfair compensation from the Three Gorges Dam Project (Zou, 2006, p. 1). In 1997, ten thousand people protested the Three Gorges Dam and signed petitions that were then sent to officials in Beijing (*International Rivers Network*, 2003, p. 16, June, 2002, p. 208).

Prior to the June 4, 1989 Tiananmen Square incident, there was discussion and debate about the construction of the Three Gorges Dam, primarily by scientists who were concerned about environmental effects (Shapiro, 2001, p. 62, Barber & Ryder, 1993 p. 6). After 1989 and the banning of *Yangtze! Yangtze!*, the government permitted publication
of an array of articles in Chinese newspapers and magazines that debated the issues raised by the book (Rong, 1994, p.13).

In 1992, the refusal of one third of the National Peoples’ Congress members to vote for construction of the TGD validated the anti-dam protest within the Communist government (Ryder, 1993, p. 13, Yang, 2007, p. 1). International media reported the terrible poverty and abuse of the dam-displaced people. *International Rivers Network* and *Probe International* kept pace with almost every step of construction regarding both the Sardar Sarovar Dam and the Three Gorges Dam.

There were differences between how China and India approached their respective dam scenarios and the findings in this particular comparison did not indicate that the regime type pre-determined dam construction management and subsequent resettlement and rehabilitation problems. It is noteworthy that the governments of these nations are at a similar point in their economic growth and length of time their governments have been in place. An overarching statement cannot be made in a comparison between democracies and other regime types as destroyers of environments and tribal people. Comparisons must be country-specific and depend on several key factors such as the economic model in place at the time of analysis. In democracies such as India, key parties and policies change with each election.

There are hundreds of democratic styles in various states of development and many versions of authoritarian rule. The U.S. no longer builds large dams because decades of research and experience have shown them to be destructive to water bodies and riverine land. Dams are also being decommissioned because of aging, increased cost of operation, and outliving their original purpose (Deheer, 2001). Thanks to the media
and freedom of speech in Brazil, construction on the Xingu Belo Monte Dam has been halted by the Supreme Court (Abrams, Lehman, & James, 2010). Movie director James Cameron brought instant notoriety to the plight of the displaced Xingu people near the dam by joining them in their protest. The court withdrew the dam’s environmental license and put a stay on bidding and construction of the dam. This construction halt does not guarantee the final outcome of the dam because President Luiz Lula da Silva has vowed to fight for its construction (Abrams, Lehman, & James, 2010).

**Collaborations and Civic Input Forge Change**

Prior to the 1980s, indigenous people caught in the teeth of development projects were largely unseen and unheard. These groups received no education about the coming displacement or warning of imminent changes in their lives. Their governance was largely conducted by traditional village councils which were part of the community. There was little connection to the policies and intention of central governments.

Changes in government policies, and inclusion of local voices, have been brought about by the collaboration of international entities with China. Both Andrew Mertha (2008) and Minxin Pei (2003) discuss the gradual change in China’s economic, social and environmental positions based on cooperation with international organizations, such as the United Nations, non-governmental organizations such as the World Wildlife Fund and Chinese government organized non-governmental organizations. The Chinese NGOs and CONGOs were overseen by the government and in many ways the fifty environmental groups registered with them fulfilled government tasks such as environmental education and engagement with nature. Managerial level people from government or industry were often leaders of civic groups. As policy entrepreneurs they
were effective because they had trust and communication links with the government and could be effective. IFIs such as the World Bank sought to instill humane and environmental norms in the construction of the Three Gorges Dam with no success. China was able to finance their giant dam on their own and was able to ignore the demands of the World Bank.

In India, after the completion of the *International Review*, the decision was made early in the process not to fund the Sardar Sarovar. The lesson for the World Bank was that it was simply not enough to have EIA and SIA requirements. It was also necessary to do a thorough job in the exploratory process of a project and then follow the investigations with proper action and adherence to their own norms. In India the relationship between the most well-known NGO, the protest group the *Narmada Bachao Andolan* and the Indian government was largely adversarial. The NBA eventually became the sole voice of the anti-Sardar Sarovar Dam movement and suffered greatly from government propaganda about the group as an obstacle to progress, outright violence by the state against protests and unfair judgments from the Supreme Court. Their path of non-violence and hunger strikes, however, was successful and caused a stay on construction of the Sardar Sarovar Dam from 1995-1999. The voice of this critically important NGO continues to monitor and protest the construction of destructive dams in India.

China has witnessed successes in preventing the construction of dams on the Nu River and stopping construction of the twelve dams on the Jinsha River that would have endangered the Chinese sturgeon catch of several tons of fish annually. He, Daming, and Mu and their respective environmental NGOs such as Green Watershed, Friends of
Nature, and Green World work tirelessly to keep their anti-dam constituencies informed of any changes in plans for development on the Nu River (Mertha, 2008, p. 142).

India is characterized by political chaos, interstate rivalry, and governmental corruption.

The persistence of vision and courage of the NBA whose opposition to large dams persists to this day transformed the dam-displaced people from victims to heroes. A particular victory for the Sardar Sarovar protest movement was the stay on construction of the Sardar Sarovar Dam from 1995-1999. It is a remarkable accomplishment for a movement that started among displaced agrarian and riverine adivasis. An appropriate legacy of the *Narmada Bachao Andolan* is the creation of the International Day of Action protests which number in the thousands and are held in many places around the world on March 15.

The NBA, the *International Rivers Network, European Rivers Network*, and the Biobio Action Center in Chile were the original organizers of the event in 1998. Their aim is to stop the building of large dams, find alternative sustainable forms of energy and increase citizen participation and public transparency in all water management issues (International Rivers Network). The organization is a legacy of the Curitiba Declaration of 1997, which was signed by India partially in response the building of the Sardar Sarovar Dam (International Rivers Network, 2010).

**Criticism within the Indian Government**

There were also bureaucrats in the Union Water Resources Ministry who openly disagreed with the construction of the SSP. Their investigatory body, named the Five Member Group (FMG), turned in its report to the Union Government on July 21, 1994 (Sangvai, 2000, p. 66). The findings of the report mirrored that of the *Independent*
Review of the World Bank, and criticized several aspects of the project such as the total lack of drinking water in the SSP plan, absence of adequate R & R plans for the displaced, and inadequate hydrology reports on which the SSP construction was based (Sangvai, 2000, p. 66).

Although there have been gains elsewhere, India, by contrast, is rife with competition between political parties at the national level, and interstate conflict at the state level. The biggest obstacle to progress is that the dictates of the central government regarding construction and R & R rights, are seldom carried out by state and local government. Persecution of adivasi populations seems more pervasive now than in the past. While activists, such as Medha Patkar, continue to work for the rights of the displaced population through non-violent means, institutional progress regarding their rights is not visible. Recently, a negative assessment of governmental environmental monitoring and environmental social justice arenas was written by the Second Interim Report of the Experts’ Committee of the Ministry of Environment. It evaluated the environmental compliance for “flora and fauna..command area development, compensatory afforestation, and human health aspects in the project areas …” (Iyer & Mahadevan, 2010). The report is a “severe indictment” (Iyer & Mahadevan, 2010) of the state governments involved (Gujarat, Madhya Pradesh, and Maharastra) and the local officials chosen to oversee these issues. Even though the Sardar Sarovar Dam was meant to meet the water needs of 20 million people, the committee recommended that further reservoir filling be stopped immediately (Iyer & Mahadevan, 2010). This central government command is seen as a victory for the Narmada Bachoa Andolan.
Faulty Financial Projections

Surprisingly the planners of the two dams did not fully investigate future earnings and costs of the large dams they constructed. The governments accepted politically expedient faulty financial analyses that enabled the construction of both the Three Gorges Dam and the Sardar Sarovar Dam. Both India and China skirted the requirement by the World Bank to perform detailed environmental and social impact assessments. The governments’ situation can be compared to those unhappy homeowners who buy houses using mortgages that balloon after several years. In the beginning the benefits outweigh the costs. However, when costs rise beyond the ability to pay, the outcome is often foreclosure.

In India the government originally estimated the cost of the Sardar Sarovar Dam construction at $4.6 billion, while the Narmada Bachao Andolan’s projection was $9 billion (Turaga, no date). In the case of the Sardar Sarovar Dam, Vijayendra N. Kaul, Comptroller and Auditor General of India, notes that the financial history of this dam consists of “successive governments finding surreptitious ways to drown reasonable debate in the face of inconvertible facts” (Upadhyaya, 2006). According to Kaul, new audit reports about the insolvency of the project include “irregular disbursal of funds, indiscriminate market borrowings leading to unsustainable interest burden and undue favors to contractors” (Upadhyaya, 2006).

As early as 1992, after the Independent Review Committee chaired by Bradford Morse, the World Bank was cautioned to abandon the Sardar Sarovar Project. By 1993, the Sardar Sarovar Narmada Limited began unsustainable market borrowing with huge interest payments that were not identified to the Government of India Planning
Commission. The interest rates and the escalation of construction costs made the project untenable financially (Upadhyaya, 2006). Available funds were used for increased debt payment instead of compliance with the resettlement and rehabilitation norms for families displaced from the SSP.

The original cost estimate of building the Three Gorges Dam was $8 billion. This figure was presented to the National People’s Congress by Vice Premier Zou Jiakua (Reuters, 2009). Recent estimates are now at $37 billion dollars (Graham-Harrison, 2009). Approximately one-third of that sum is for resettlement of dam-displaced people. Corruption by local officials has been a long-standing problem because of local administration funding for the project (Graham-Harrison, 2009). In 1999, The Guardian exposed claims that corrupt officials were being bribed by unqualified contractors that were used for construction (Gittings, 1999).

In 1998 alone, there were close to 100 cases of “corruption, bribery and embezzlement related to the project” (Gittings, 1999). Safety concerns arose because of the collapse of a smaller dam on the Qijiang, a Yangtze River tributary. The suspected cause was poor construction by a contractor who had procured the contract by bribery (Gittings, 1999). Building dams requires specialized engineering knowledge and building skills that cannot be duplicated by inadequately trained individuals. This thesis writer also suspects that there was probably corruption in the purchase of concrete, steel and the materials needed to build the giant walls and turbines for the Three Gorges Dam. Another source of corruption was the usurpation of funds slated by the government for resettlement and rehabilitation.
Graham-Harrison writes that an estimated $50 million were misappropriated in the first six years of dam construction. In 2009 it was reported that $30 million slated for resettlement and rehabilitation, such as building homes and providing compensation for dam-displaced populations, was embezzled by local officials (Graham-Harrison, 2009). It was also reported that in Hubei province the resettlers received only $645 out of a promised $4,190 in compensation per household (Graham-Harrison, 2009).

Obscuration of financial costs of dam building can more easily be hidden by an authoritarian government. In China there is a lack of national transparency about the reasons for the huge explosion of costs associated with the dam because it is largely financed by Chinese banks, such as the China Construction Bank and the state run China Development Bank (Probe International 2007). Three major companies were tasked with oversight of dam construction including The China Three Gorges Project Development Company, the State Grid Corporation, which is responsible for transmission work, and the Yangtze Power Company. While outside engineers were called in for assistance in the early stages of planning the dam, it has been almost exclusively constructed by seventeen Chinese companies (Probe International, 2007).

**Dam Dangers: Facing the Consequences**

Although dam proponents, including governments and the dam-building interests, have promoted dams as an environmentally friendly option to coal to produce power, they actually create environmental havoc. The awareness of the danger of dams has been longstanding (Peterson, 1954) and more attention has been paid to the environmental degradation of dams in recent years (Martinez-Alier, 2004, p. 127).
Environmental protection cannot compete with expected economic gains (Martinez-Alier, p. 127). According to Elizabeth Economy, China’s “spectacular growth…has also produced an environmental disaster” (Economy, 2003). Overuse of natural resources, including forests and water have caused flooding and desertification, air pollution and species loss (Economy, 2003). By 2003, 75% of river water that runs through cities was undrinkable and 60 million people experienced difficulty in gaining access to water. Economy states that 180 million Chinese drink contaminated water (Economy, 2003). Many of these problems are caused by the Three Gorges Dam. India suffers from the same problems.

Dams, which are considered a green energy source, actually pollute the atmosphere because they emit significant amounts of carbon dioxide, methane, and other greenhouse gases. This effect is caused by the disintegration of biomass, such as felled trees and crops that fall into the reservoir during construction (Graham-Rowe, 2009). It has been estimated that some dams emit more greenhouse gases than comparable fossil fuel power plants (Graham-Rowe, 2009). India has increased its greenhouse gas emissions by 58% in the period between 1994 and 2007 (Guardian.couk., 2010) and now ranks fifth in the world in total greenhouse gas emissions.

In China, the world’s largest emitter of greenhouse gas since 2006, the use of coal-fired electricity and oil grew 24% both climbed 24 percent in the first quarter from 2009, and it is estimated that there will same increases in the fourth quarter that year (Bradsher, 2010, p. B1). “No country of this size has seen energy demand grow this fast before in absolute terms” according to Jonathan Sinton, the China program manager at the International Energy Agency in Paris (Bradsher, 2010, p. B1). According to Bradsher,
it is unlikely that the goals set by Premier Wen Jiabao, to increase energy efficiency by 20% in the next five years, will be met (Bradsher, 2010, p. B1).

Li Yong’an, president of the China Three Gorges Corporation, still maintains that “The Three Gorges project is an important future source of clean energy for China's growing electrical consumption” (Chen, 2010, China Daily) and that the carbon dioxide, sulfur dioxide and nitrogen oxide emissions are far less than that of coal-fired plants (Chen, 2010, China Daily). Clearly, propaganda has obscured scientific fact regarding the green nature of large dams. Li’s promotion of the environmentally friendly nature of the TGD in the face of known forms of environmental destruction is an excellent example of greenwashing, which distorts facts to make projects or policies sound environmentally sound.

Drought, partially caused by damming the region’s water, threatens food security in China. In 2009, China suffered the worst drought in over fifty years. Farming in the dry northern areas was almost impossible as local wells ran dry. Many farmers could not pay the water fee imposed by some local wells and lost their crops as a result (Wines, 2010, p. A 5). The environmental effects were exacerbated by damming the water supply in the large reservoirs. Digging more wells and diminishing the supply of groundwater adds to long term problems. When fluctuations in the economy occur and jobs are lost, many return to farm their small plots of land, which only worsens the situation (Wines, 2010, p. A 5).

In India, a significant number of urban inhabitants, including dam-displaced people, are migrant laborers (Library of Congress & CIA, 2004). By 1992, 26% of the population of India lived in cities, while the rest were located in rural areas. Twenty-four
of those cities have populations of 100,000 or more and the number of people migrating
to the cities is increasing (Library of Congress & CIA, 2004). Access to clean water,
industrial waste disposal, and sanitation is more problematic as cities are increasingly
placed in land-locked areas. Dams may serve to direct water to cities but the supply is
inadequate in the face of increasingly dense populations. Dams also raid the water from
the agricultural sector. Although the need for power generation increases as populations
swell, it will be impossible to meet these basic needs as well as the resettlement and
rehabilitation needs of development-displaced people who live in either urban or rural
areas.

Policy Recommendations

Water Comes First

Environmental discussion world-wide needs to focus on water first, rather than
global warming. A lack of water will lead to starvation and disease, and industrial
production will suffer from a lack of clean water, as well. Future growth in city size and
planning of new cities should be partially based on water availability and expert water
management. The rapid growth in the number of Chinese cities makes China particularly
vulnerable. In 1952 there were 54 million people in cities, by 2004 there were 540
million urban residents, and at a growth rate of 1% per year, there will be 900 million
people in cities by 2020 (Li, 2006). The production of more dam reservoirs will deprive
China of still more land. The loss of arable land is predicted to be ten million hectares by
2030 (Li, 2006).

The ramifications of Chinese dam-building protocols now have international
impact which must be mended to reduce environmental and social catastrophes world-
wide. Half of all the world’s largest dams are in China and Chinese firms are now building 19 of the 24 largest hydropower plants worldwide (Dixon, 2010). There must be a push to more accurately review EIAs and SIAs, as well as all potential costs of future projects such as disaster relief. Independent financial analysts should consult with the other assessors to comprehensively gather data to make informed cost-benefit analyses. Government and industry self-assessment do not work. In the wake of this information, World lending organizations must refuse to lend to projects that violate their own standards. One of the most important standards is the inclusion of indigenous people in the planning process. Once construction on a project has begins, reliance on international oversight from lending and human rights organization should become normative behavior.

There cannot be a division between those who protest dam construction and those demanding resettlement and rehabilitation rights. Both protest movements must continue. Laws are on the books regarding resettlement and rehabilitation from international funding organizations and national governments, but that does not guarantee compliance. There is no statute of limitation on human suffering. Every effort to ameliorate conditions should continue forward using all possible modalities – civic participation and protest, media, art, celebrity spokesmen, and the use of the internet and mobile phones. Blogging and viral videos spread communication in dramatic ways that are instantly available for world consumption.

In China and elsewhere, grassroots groups, such as NGOs and GONGOs, should continue to work for stakeholder involvement in environmental sustainability (Moore & Warren, 2006, p. 3). This can enhance the environmental sustainability in development
planning by giving it the strength of public opinion (Moore & Warren, p. 4). China’s three key laws in environmental public participation are the 2003 Environmental Assessment Law, the 2004 Administrative License Law, and the 2006 Provisional Measures for Public Participation in the Environmental Impact Assessments (Moore & Warren, p. 6). The People’s Republic of China’s central government must involve itself in enforcement for these laws to have teeth. Punishing offenders and having them remit the cost of social and environmental damage is necessary for true change. Recent successes mentioned in Chapter 3 attest to the feasibility of such action.

Finally, and most convincingly, the economic costs of building dams and providing for the displaced should be partly determined by past tragedies. The World Bank estimated that air and water pollution costs China $32 billion annually (Beyer, 2006). Human tragedy is also measured partially by “premature deaths, morbidity, restricted activity and other negative health effects” (Beyer, 2006). Environmental destruction and wasted human resources provide convincing arguments for energy-efficient, socially just solutions for power generation. Self-interested financial accountability should motivate China, India and all countries to find the answers to sustainable energy.

China and India each have populations of more than one billion people and their citizens are the most important natural resource each country has to offer. The traditional Asian philosophy that an individual must serve the needs of the country needs reversal. The state should serve the needs of all its citizens. True economic development, in which all people experience economic and social gains, is the way to a better future for the both the people and the environment.
Areas for Future Research

Before decisions on large dam construction can take place, all possible alternatives, such as small dams, low water irrigation schemes, and dikes must be investigated and simpler technologies should be adapted to meet water needs. When dams are built, according to Scully, a small size is more efficient and communal ownership works best. Building the small Baliraja Smriti Dam in Maharashtra was the response of two local communities to meet their water needs when the government refused to do it (McCully, 2007, p.199). The cropping schedule is worked out by consulting with all the villagers and the amount of water each family receives depends on each family’s size and need (McCully, p. 199). The workings of this dam are considered by researchers Enakshi Gangul Thurkral and Machhindra Sakate to be a resounding success due to the complete involvement of the villagers (McCully, 2007, p. 199).

Maintaining healthy rivers by keeping forests and wetlands intact and restoring watersheds damaged by irrigation and urbanization is the logical way to minimize flooding, keep soil fertile, and avoid the risk of drought (McCully, 2001, pp. 189 – 190). Small-scale solutions are generally cheaper and faster to accomplish. Forests and the soil they occupy soak up rainfall and gradually release water to adjacent land, which returns it to aquifers (McCully, p. 190). In India replacing forests was largely unsuccessful. 86% of the land where trees were replanted was found to be “highly degraded with little or no tree cover (T.I.S.S., 2008, p. xi). Strict prevention laws are needed to control logging by commercial companies and farmers.

Another sensible route to sound water management is to create flood plains, instead of trying to completely avoid flooding. Areas that are flooded could then be used
for water storage according to a plan devised by the U.S. Army Corps of Engineers, an idea which has been debated since 1850 in the U.S. (McCully, 2001, p. 193). This involves allowing water to accumulate at chosen locations and strengthening structures that may be inundated, instead of building levees or dams (McCully, p. 193).

Water harvesting in arid locations is preferable to creating dams for water diversion. It allows underground aquifers to be replenished and is aided by allowing rainwater to flow down hills toward fields (McCully, p.195). Choosing crops that are not water intensive, such as millet and groundnut provide better outcomes in dry locations. The harvesting can also be accompanied by terracing which slows down the rate water flows downhill.

The connection between dams and earthquakes must be heeded. The concerns are two-fold. Dams can cause seismic activity and in addition dams can be injured by earthquakes. Any wall collapse in large reservoirs presents an unavoidable flooding problem. The Sardar Sarovar Dam was built in a region that was known to have seismic activity. Locating a dam in an active area is “fraught with enormous risks” (Water Power Engineering Magazine, 2009). The huge weight of the water stored in reservoirs puts enormous pressure on the geologic structures that support the dam. Recent studies focus on the earthquake near Chengdu in Sichuan province that claimed 80,000 lives. Dams are still being constructed on risky sites. The Zipingpu Dam was built only five hundred meters from the earthquake fault and was only 5.5 kilometers from the epicenter of the earthquake (Naik & Oster, 2009).
Rightful Resettlement and Rehabilitation

Scholarship needs to be done on existing resettlement and rehabilitation in both urban and rural areas. One of the most successful models is the resettlement of those in the Mumbai urban tenements that bordered too closely on train tracks. Tens of thousands of people live perilously close to the three lines that connect the center of Mumbai with its suburban areas (Burra, 2001). Huts have lined the routes for more than twenty years and some of the huts are no more than one meter away from the tracks (Burra, 2001). Fear of train accidents was real and caused both rail employees and local people a large amount of anxiety. For this reason the Mumbai Urban Transport Project was created to effectively relocate affected families and enhance the efficiency of the trains (Burra, 2001).

A key aspect to the project was local civic involvement from the very beginning. A local NGO, the Society for Promotion of Area Resource Centres, was appointed for the oversight committee, as well as the President of the National Slum Dwellers Federation, a group formed during the 1970s when slum residences were obliterated by developers. Both men and women from the slums were also recruited to sit on committees and have a prominent voice in all the decision-making. Although half of the funding came from the Government of Maharashtra, all decisions were made by the committee and the people themselves. (Burra, 2001).

The “from the ground up” local committee which included organization leaders from the displaced people including the President of the Railway Slum Directors Federation and the Director for the Society for Promotion of Area Resources (Barra, 2001), led to a quicker decision-making process that was centered on the actual needs of
the people and resulted in an almost total lack of corruption (Burra, 2001). The ideal group size to maintain a sense of community was found to be fifty families. Planning was also created to provide access to clean water, electricity and kerosene for the affected families. Because this process was self-governing, it has been highly effective and over time 80,000 people were moved successfully. An added feature was the emphasis on women and their needs, including the creation women’s collectives for financing and community building (Burra, 2001).

While relocation of rural people poses some different challenges, the model of community involvement in moving displaced people to settlements partly of their own creation is inspiring. More research needs to be done regarding other specific success outcomes that can be used for resettlement and relocation of dam-displaced people into either rural or urban environments.

More study is necessary on issues relating to relocation of people in specific areas. World Bank Employees Fabio Pittaluga and Sabah Moyeen developed a seven-week program for a “Post-Graduate Certificate Course in Management of Land Acquisition, Resettlement and Rehabilitation” (MLARR) that could serve as a model for similar endeavors (Pittaluga, 2010). The topics include all areas of resettlement including performing SIAs, the creation of resettlement action plans, using communication effectively and understanding relevant laws related to relocation (Pittaluga, 2010). MLARR is a program to train people to handle resettlement as professionals and it has grown into a Masters of Development Program through its BRAC Development Institute (BDI). A similar program now exists at Columbia University for students to procure a Master of Development Practice which incorporates MLARR. Shorter versions
of the course are in the works for other South Asian countries (Pittaluga, 2010). Private industry as well as government entities can help fund such practical initiatives and to ensure the success of their large infrastructure projects.

The most optimistic outcome of research regarding large dams is the prospect of decommissioning dams to save rivers and riverine life. Hopefully, this will come as a result of increased understanding of the dangers of the dams. Decommissioning dams is a poorly understood process and ecological mistakes are often made such as the release of large amounts of toxins, channel instability, sediment changes, invasive species influxes and “adverse hydrologic alterations” (Engineer Research and Development Center, [ERDC] 2001). More research needs to be done to avoid these pitfalls. There must be research into safe and effective procedures to rebuild communities in the dam area and enlightened government policy to protect them.
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