



Saving India's rivers: Ecology, civil society, religion, and legal personhood

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ABSTRACT

In recent decades, India's environment has been severely compromised by riverine pollution combined with large-scale dams and exacerbated by diversion for irrigation. Most prominent among the rivers so affected has been the Ganges and its tributaries in northern India, which for Hindus include the country's most sacred bodies of water. This paper examines three campaigns opposing dam construction, arguably the most widely publicized and analyzed efforts of this kind since independence in 1947. One campaign was essentially secular with virtually no religious component, the second mostly secular with some religious support, and the third almost totally a religious initiative. In the end, only the third attained any real success, and that rested on circumstances unlikely to be replicated. The possibility that future campaigns of this scale can be taken up again appears remote.

Meanwhile, riverine pollution has continued to increase everywhere despite massive governmental programs to reduce it. Theoretically, it would seem that environmentalists and Hindu devotees with their veneration of nature should be able to work in common cause to reduce pollution, but any large-scale cooperation seems unlikely between these two disparate realms. More recently an effort to protect rivers by endowing them with legal personhood enjoyed an initial success, holding the promise that lawsuits could be brought on behalf of a river against those polluting it. The paper concludes that while the legal personhood strategy is currently stalled, it offers the best chance for eventual success in attenuating riverine pollution. In the course of the paper, a comparative theoretical framework for assessing anti-dam protests will be tested.

Introduction

India has long relied on dams for irrigation and hydropower. The former remove water from its rivers, while the latter powers industry and helps cities grow, which in turn creates pollution and sewage, which both flow into the depleted waterways. As part of the price for this progress, India's rivers – in particular those rivers most sacred to Hinduism – have come to rank high among the world's most degraded and polluted bodies of water. The country has also been a leader, arguably the world's preeminent leader, in advocacy campaigns opposing dams. Several of these campaigns or *andolans* (“movements” as they have been commonly called in India) grew so prominent that they attracted global attention and concern, but in the end they largely failed to halt ongoing dam construction.

At present, this large-scale approach seems to have run its course, but a new path shows promise of replacing it: working through the courts to establish legal personhood for India's rivers, thereby enabling them to recover from the damage done to them. This essay will first examine the three largest protest movements of recent decades – two cases centering on the Ganges or Ganga River and one dealing with the Narmada River. The paper then goes on to explore the legal personhood approach as an alternative path for saving India's rivers. In assessing the three

campaigns and the legal personhood approach, the paper will apply the theoretical framework developed by Andrew Mertha and William Lowry [45].

Backdrop

The Indian subcontinent contains six active major rivers held sacred by Hindus, who form around 80% of India's population. The largest and most sacred is the Ganges, whose basin drains an area of more than one million square kilometers containing over two-fifths of the country's population. Chief among its tributaries is the Yamuna, also a sacred river in its own right. Both these rivers flow by major cities and constitute India's most toxic bodies of water, ranked by some as the world's most polluted river systems.¹ The Narmada River, also sacred, runs east-to-west through the center of the country, traversing a less densely populated terrain and draining just under 100,000 square kilometers; it is considerably less polluted than the Ganga-Yamuna. Both systems have long been considered to have major potential for irrigation and hydropower. The present paper will focus on the Ganga and the Narmada.

¹ For example, Aspiration Partners [6] and Million Dollar Vegan [46].

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Over the 75 years since achieving independence in 1947, a combination of increasing population and development has fostered two trends imperiling its major rivers: industrialization and urbanization.² These two factors, along with a concomitant growth in food production (which requires greatly expanding irrigation), have entailed huge increases in the demand for energy, which in turn have led to a great proliferation of river dams for hydropower. This demand is only increasing.³ Industrial effluent has generated all kinds of pollution (much of it toxic), joined by untreated domestic sewage (especially urban) and animal waste, while agricultural irrigation has removed much of the water that had previously flowed through the country's river system and had helped reduce its pollution.⁴ The overall result has been more and more riverine pollution affecting rivers containing less and less water. In addition, dam reservoirs have displaced hundreds of thousands of riparian families and destroyed much riparian environment. That some of the rivers are accorded a sacred status in Hinduism has added greatly to concern over their degradation.

Opposition to major dams has generated large movements, some lasting decades, and variously motivated by environmental, humanitarian, and religious concerns. This paper will trace the history of three such movements, one conducted largely along ecological and humanitarian lines for the Narmada River, a second one including both ecological and religious elements for the Ganga River, and finally one almost completely religious for the Bhagirathi River, which forms part of the Ganga's headwaters. These three opposition campaigns were arguably the most prominent such efforts over the past three decades and more; in terms of attention received they would certainly seem to have been the most analyzed.⁵

Despite their scale of effort, popular mobilization, global outreach and tenacity, however, the first two *andolans* in the end failed to prevent construction of the dams they opposed, and while the third and rather less ambitious movement did attain its immediate objective in 2012, it seems to have been the last of the major campaigns. Since then there have been anti-dam protests, but they have local, small-scale affairs, not even beginning to attract the domestic or international interest of the three *andolans* under discussion here. Meanwhile, a growing population needs ever more food from irrigated crops and increased power to enable greater production from industry, both of which further degrade the country's rivers.

At present there appears little scope for mounting yet another massive movement to save India's rivers, but over the past decade, a new path has been forged: obtaining legal personhood for water bodies; this new approach has been gaining ground globally and has secured some intermediate successes in India, showing promise of becoming a viable alternative path to protecting the country's rivers.

² In 1950-51, the industrial sector's contribution to gross domestic product was about 14 percent, while the agricultural sector amounted to about just over half. By 2019-20, while both sectors had expanded greatly, industry's share came had risen to 28 percent and agriculture had shrunk to 17 percent, but agriculture with its demands for irrigation and other inputs had expanded production greatly, e.g., by more than 8 times for foodgrains. As for urbanization, between the 1951 and 2021 censuses, total population grew by almost four times, while its urban component grew ten times, from 48 million to 482 million, or from 13 percent to 35 percent of the overall total. Data from GOI [28] and [29].

³ See for example a recent article in the *Washington Post* [66].

⁴ Interestingly, agricultural runoff from fertilizer and pesticides, arguably the main source of river pollution in many countries including the United States, has not emerged in public discourse as a major pollutant in India. Actually, even as overall pollution has markedly increased in the Ganga, pesticide pollution has decreased due to government intervention [21].

⁵ One measure of their prominence can be gleaned from Google searches. As of 3 July 2022, "Narmada dam controversy" yielded 64,500 items and "Tehri dam controversy" 47,200. For the third case, a search for "G. D. Agarwal," its overwhelmingly dominant advocate, turned up 16,000 items.

Methodology

My understanding of the three cases draws on the available literature, which is large for all of them and immense in the Narmada instance. For example, Dhagamwar [14] and Dwiwedi [19] on the Narmada, James [37] and Sharma [65] on the Tehri Dam, and Drew [17] on the upper Ganga each provide detailed book-length analyses of the origins, activities and outcomes of the campaigns they researched. Academic journal articles and contemporary newspaper accounts are plentiful as well, as can be seen in the references to this essay.

While a good number of case studies focusing on individual anti-dam movements around the world have appeared, comparative analyses of anti-dam movements have been notably absent, with the singular exception of Mertha and Lowry's [45] study of movements opposing dams in the United States, Australia, and China. Drawing on ideas from American political science circles in the 1940s and 1950s, their approach argued that three components were needed for a social movement to successfully generate policy change: attracting entrepreneurial activist leadership; engaging media at a high level; and building a coalition of like-minded and supportive allies to advocate for policy change. All three variables had to be present in strength, the authors argued, to effect any real policy change. Their argument provides an excellent frame for analyzing the three Indian campaigns.

A closer reading of Mertha and Lowry's article shows that a fourth factor was also critical to anti-dam movement success in the Chinese case and had decisive impact in the Australian example: anti-dam advocates inside the government. In the Chinese case, a state-run newspaper, senior bureaucrats at the local level and even the municipal Communist Party Committee opposed the project. In other words, the anti-dam coalition included both sides of the policy debate. In Australia, a national election brought in a new government that opposed the dam, passing legislation putting an end to the project. In the American case, however, it was outside leadership, media publicity and advocacy that proved decisive in pressuring federal authorities to abandon the project, not dissidents on the inside. These distinctions will be taken up later in this article.

In considering the three cases, I will use as a lens the Mertha and Lowry [45] register of critical components needed for a movement to succeed. It will emerge that although the three Indian movements performed admirably well by the Mertha-Lowry measures, two failed and the third attained only a modest success. At present there appears little scope for mounting yet another massive movement to save India's river.

But as noted above, over the past decade a new path has been forged: obtaining legal personhood for water bodies, which has secured some intermediate successes in India and shows promise of making more substantial headway. The essay explores this new approach and its possibilities to function as a replacement to the *andolans* of earlier decades. The Mertha-Lowry model will be useful here as well.

Narmada Dam movement: social justice resistance

The idea of a hydroelectric dam project on the Narmada River first emerged in the late 1940s, as newly independent India began to chalk out its development modernization plans. Somewhat later, the project expanded to include a large irrigation component as well [84]. Its central component was to be a massive dam located not far from the river's mouth in Gujarat State. The area affected by the dam's reservoir and the many associated smaller dams lay mostly in the state of Madhya Pradesh, with smaller tracts in Maharashtra and Gujarat, thus bringing three states into play. Prime Minister Jawaharlal Nehru inaugurated the project in 1961, but actual construction did not begin until 1987. The overall enterprise became known as the Sardar Sarovar Project (SSP) and envisioned a total of 30 major dams and some 3000 smaller ones along the Narmada and its tributaries. Its major element was to be the Sardar Sarovar Dam.

The dam's eventual design envisaged a generating capacity of 2700MW and an irrigation command area of 1.8 million hectares (4.4 million acres) running through central Gujarat all the way to include a small section of neighboring Rajasthan State. In addition, it promised to provide potable water to some 30 million people reaching up to New Delhi. The structure itself was to rise to 121 m (later increased to 138 m or 150 yards) and eventually create a reservoir with a surface area of 373 square kilometers (145 miles²) [26]. Fiercely debated estimates of people to be displaced by the reservoir, who became known as "oustees," ran between 200,000 and 1,000,000 – mainly Adivasis (autochthones, officially titled Scheduled Tribes) and almost all living in Madhya Pradesh, which would become by far the most affected state in terms of area and population to be impacted by the project, while neighboring Gujarat State would receive almost all the irrigation to be provided by the dam system.

Opposition to SSP followed two tracks, while a third one that might have become prominent never actually materialized. The first and by far the dominant track comprised the opposition's public face: mass protests, appeals at the highest national level, global publicity, and international support. It focused mainly on the plight of the "oustees" who would be displaced by the dam's reservoirs. The second and clearly minor track included more technical arguments: economic estimates and environmental analyses. A third track could conceivably have been religious. After all, the Narmada was one of Hinduism's six sacred rivers and the only one in Western India. But while many of the dam's opponents were caste Hindus ([7]: ch. 9), the most active protestors were Adivasis who existed basically outside the caste system and for whom the river's sacred quality was not a high priority. An additional factor here probably lay in the Hindutva movement's⁶ preoccupation at the time with the Ayodhya/Babri Masjid issue in far off eastern Uttar Pradesh, which would have left little energy for dealing with the SSP. In any case, religion played no significant role throughout the SSP controversy. The secular public arena, then, was the primary theater in which the Narmada dam struggle played out.

After considerable dispute over costs and benefits between the states involved, an official tribunal issued a final positive decision in August 1979. Almost immediately opposition groups formed in Madhya Pradesh, protesting the displacements that would soon begin. This was the era of the Chipko Movement⁷ and the beginning of a national concern for the environment. The center for Science and Environment (CSE), for example, was founded in 1980 and soon became a leading thinktank in New Delhi. A non-governmental organization (NGO) called ARCH-Vahini approached the World Bank (which was negotiating a loan for SSP construction) to look into the displacement issue. In 1983 the Bank commissioned a study which expressed serious concern about resettlement and rehabilitation (soon to become known as R&R) that quickly circulated among international NGOs ([20,77]; and most extensively [80]). Despite some internal dissent, however, the Bank approved a loan of \$450 million for the dam two years later ([80]: 269–273 &ff).

NGO involvement and commitment increased at both international and national levels. Organizations like the Environmental Defense Fund in the US and Oxfam in the UK supported the protests, and on the ground Medha Patkar, a social worker from Mumbai, along with Baba Amte, a longtime Gandhian activist, and others led a merger of several NGOs to form a new body, the *Narmada Bachao Andolan* (NBA, or Save the Narmada Movement), which became the major player in opposing the dam. The NBA proved itself remarkably able both to access international support from abroad and to orchestrate opposition at home. Its first major rally took place in 1989 at Harsud, a town eventually to be submerged by

the SSP, drawing some 20,000 protesters and much international NGO support. A second event the next year organized a *satyagraha* (passive resistance demonstration), followed by six annual *satyagrahas*. Many demonstrations and fasts followed, with attendant publicity and media coverage. The 1991 *satyagraha* introduced the "drowning squad" strategy, asserting that thousands of people to be displaced by the dam had pledged to drown in the reservoirs rising waters rather than leave their homes.

By 1990, international NGO support had led to a US Congressional hearing in which Medha Patkar among others testified in opposition to the dam ([20]: 154. A request from Congress to the World Bank followed, urging it to reconsider its loan to the SSP. Many NGOs directed similar requests to the Bank, and the Japanese government canceled its own \$150 million loan. The Bank in turn launched an independent study chaired by Bradford Morse, former head of the United Nations Development Programme, which in June 1992 issued a report excoriating the Bank for not complying with its own procedures regarding R&R or environmental analysis; it urged the Bank to "step back" from the project. International pressure increased yet further to the point where at the time of the Bank's annual meeting in September 1992, a group of 27 NGOs from eleven countries sponsored a full-page advertisement in the *New York Times*, with the headline "Why thousands of people will drown before accepting the Sardar Sarovar Dam."⁸ At the same time, of course, there was strong support for the dam from constituencies promoting development, especially those in Gujarat anticipating irrigation benefits.

At first, the Bank resisted cancelling the loan, but international pressure increased, to the point that the US Congressman Barney Frank, head of the sub-committee that would authorize America's \$3.7 billion share of the Bank's next replenishment, said he would refuse to do so unless the loan were canceled. The Bank then agreed to cancellation but gave the Indian government the face-saving chance to announce in March 1993 that it would not ask for further tranches of the loan, because it would not compromise its planning and consultation procedures just to meet arbitrary Bank deadlines.⁹

The actual cost to India was in fact not all that great, given that most of the loan had already been disbursed and the original \$450 million constituted only 15 to 20 percent of the project's total cost. But the downstream impact was significant: The Narmada experience empowered a faction at the Bank to demand more attention to environmental aspects of its infrastructure projects, and the government in New Delhi started to take seriously its obligation to provide R&R [80].

In parallel to the first track emphasizing social justice, the second oppositional track focused on economic and especially environmental analyses. Serious studies of SSP's potential impact on the environment were undertaken independently of the project itself (e.g., [39,53]) and were used to support the NBA's opposition. Criticism emphasized water-logging, salinity, and groundwater deterioration, as well as forest loss impact on one hand, while pointing to the virtually total lack of any meaningful environmental assessment by either the Bank or the government at state or national level on the other hand ([80]: 271–282). Economic analysis looked mainly at probable income losses to be suffered by the oustees. Altogether, while not ignored, this second track received much less attention than the first one. And as mentioned above,

⁸ The advertisement appeared in the *Times* on 21 September 1992. Sponsors included NGOs from Australia, England, Finland, Germany, Holland, India, Italy, Japan, Sweden, United States, and Uruguay. Among the more prominent were the Environmental Defense Fund, Friends of the Earth, and the Sierra Club. Inspiration for the *Times* advertisement may have come from the Sierra Club's earlier sponsorship of full-page advertisements in the *Times*, *Washington Post*, and other newspapers in June and July 1966 which opposed an effort to build a dam in the Grand Canyon. For an account of this anti-dam saga, see Nash [48]: esp. 229–232).

⁹ The story of the Bank's withdrawal from the Narmada project is recounted in detail by Wade [80]. See also Udall [77] for an insider perspective.

⁶ "Hindutva" has a range of meanings but here can most simply be defined as a combination of very conservative Hinduism combined with a strong and often militant Hindu nationalism. For an exploration of the term, see Andersen and Damle [5]: ch. 5].

⁷ For an analysis of the Chipko Movement, see Guha [30]; also Weber [82].

a possible third track pursued by the Hindutva movement never materialized. Resettlement and rehabilitation comprised the main themes of SSP opposition.

Following on its success with the World Bank in 1993, the NBA filed a petition with the Supreme Court the next year, asking for SSP construction to be stopped altogether. The Court did halt work on the dam for a period of five years, but support for the dam continued, and in 2000 the Court ruled in favor of construction, which then resumed. The NBA resumed its protests, Medha Patkar embarked on further fasts, now supported by Arudhati Roy, winner of the Booker Prize in 1997 for her novel *The God of Small Things*. But with some interruptions, construction proceeded on course,¹⁰ and the dam was formally inaugurated in September 2017 by Prime Minister Narendra Modi.

Tehri Dam movement: Green joined by Saffron

Although the Narmada was one of the country's six sacred rivers, opposition to Sardar Sarovar in general, and within the NBA in particular, was almost completely secular, focusing on social justice and ecological issues. Hinduism had at best a very peripheral role. In our second case, secular issues had the dominant part, but this time religion also entered the picture with some prominence. Following Mukal Sharma's [64] and [65] usage, it will be convenient to label secular efforts to protect rivers as "Green" and religious efforts as "Saffron" after the garb worn by many Hindu devotees.

Within two years of the country's independence, the Geological Survey of India identified the Bhagirathi Gorge at Tehri in 1949 as a possible dam site. High in the Himalayas and close to the Ganga's headwaters, such a dam would fit in well with India's ambitions of large-scale modernization. It took some years to conduct the necessary sub-surface investigations, but in the mid-1960s the site was declared selected and then in 1972 the dam was commissioned. Six years later, actual work began. The dam was projected to rise 260.5 m (855 feet), which would be the highest in Asia and the fifth highest in the entire world – truly a massive undertaking. It promised to generate 346MW of power, irrigate 270,000 hectares (667,000 acres), and supply potable water to some four million people in New Delhi. The dam's reservoir would spread over 42.5 sq.km (16 m² miles) of surface area and displace around 85,000 people.¹¹

Opposition to the project emerged immediately after the 1972 commissioning, and a local council of 35 villages formed a group to lobby the state government against the dam but without success. By 1978 construction was ready to begin, and in response locals organized the *Tehri Bandh Virodhi Sangharsh Samiti* (TBVSS or Struggle Committee Against the Tehri Dam), which was to become the main vehicle opposing the dam over the next decades. Petitions, processions, demonstrations, work blockages and arrests followed, but construction continued.¹²

Opposition centered on two basic tracks: an eco-social campaign similar to that pursued in the Narmada case, focusing on environmental degradation, citizen displacement, and cultural loss; and a technical argument centering on earthquake risk the dam would face given its location squarely astride Himalayan tectonic fault lines. The two tracks themselves, along with the media that reported both, pressured the government to appoint a succession of expert groups to subject the project to earthquake analysis.

The initial expert team group rejected the dam project in 1986 but was ignored, and then a second committee also rejected it in 1990, holding that the design to withstand a quake of 7 on the Richter scale was

inadequate given the possibility of tremors up to 8.5 in the region.¹³ A third government-appointed expert body then concluded that a quake greater than the dam was designed for could indeed occur, but did not urge revisions in the design.¹⁴

It was at just about this time that Sunderlal Bahuguna, a longtime Gandhian environmental activist, became heavily involved in the Tehri Dam movement. A resident of the region, Bahuguna had been a principal leader of the *Chipko Andolan* (Chipko Movement) in the 1970s and 1980s that over time brought fundamental changes to forestry management policy in the area (Guha 2000; [82]). The Andolan also established a model showing that social movements could effect real policy change. And it provided an invaluable background for Bahuguna to take over leadership of the Tehri Dam opposition movement. An articulate spokesman and writer, an activist with connections at higher level (e.g., to Members of Parliament), a consummate political actor in his own right (undertaking numerous well-publicized Gandhian fasts), he energized this movement with a combination of cultural understanding and technical knowledge that could be called "spiritually informed science" ([64]: 36).

With Bahuguna on board in a more or less fulltime capacity in 1989, the protests strengthened, significantly inspired by a series of Gandhian fasts he undertook beginning with a 16-day abstinence in 1989–90. A second fast lasting 75 days in 1992 attracted national attention and led the government to suspend construction and order a new expert review of the project.

Construction did halt for more than two years but then resumed in 1994. Bahuguna then launched a civil disobedience effort to physically block project work, provoking arrests and time in jail, after which he undertook a new fast, was again arrested, released and ended his fast after 49 days when the prime minister agreed to a new review of the dam project. But the review led to no changes in the project, and in February 1996 Bahuguna began yet another well-publicized fast accompanied by public demonstrations. After 73 days he ended his fast when a new prime minister promised one more expert review. This review recommended further studies, which finally in February 1999 approved the Project.

Sunderlal Bahuguna was not to be deterred, however, and continued the TVBSS campaign with more rallies and demonstrations. By this time, the Vishva Hindu Parishad (VHP), which along with the Rashtriya Swayamsevak Sangh (RSS) has for some time been the country's most prominent Hindutva organization, had become energized over the Tehra Dam controversy, stressing in particular the loss of purity the sacred river would suffer from the dam. The VHP organized its own campaign against the dam, and Bahuguna welcomed its support, going so far as to participate in an occasional VHP-led delegation.¹⁵ In one account ([44]: 13), Bahuguna allowed the anti-dam movement to be compromised by the VHP. Sharma [64]: 39–40 and 41; also 2012] goes so far as to assert that the VHP endeavored to coopt the movement, using the overlap between Bahuguna's spiritual rhetoric and its own Hindu message in a "Trojan Horse" strategy to get inside the anti-dam movement. In his own words, Bahuguna denied that the VHP had played any role in the TBVSS movement, insisting that the VHP had been a separate actor ([37]: 191–192).

"Compromised" and "coopt" do sound rather too strong here. A more reasonable interpretation would be that after years of struggle and setback, Bahuguna and TBVSS were pursuing Mertha-Lowry's idea of finding allies to add support to their movement. And the fact that the Hindutva-oriented (and RSS aligned) Bharatiya Janata Party (BJP) had taken control of the central government after the 1996 national election

¹⁰ And an increase of 16 meters in the dam's height was authorized, significantly enlarging the reservoir's area [22].

¹¹ Data from Sharma [64]: 36. Power would be supplemented by a some 400MW from a downstream reservoir (ibid.).

¹² Unless otherwise indicated, information on the Tehri Dam movement is largely drawn from Sharma [64] and [65] and James [37].

¹³ This was not idle speculation. In 1950 a quake of 8.6 magnitude had occurred in Assam, several hundred miles east from Tehri along the same basic fault line. See USGS [78]. The hugely destructive Bihar-Nepal earthquake of 1934 was later assessed at 8.2, while the more recent Gorkha quake that shook Nepal in 2015 measured 7.8 [60].

¹⁴ The chain of expert group activities is reported in some detail in DTE [18].

¹⁵ According to Sharma [64]: 39–40].

must have made a common cause with the VHP even more appealing. In any case, though, by the beginning of the new millennium, it had become clear that efforts to save India's rivers had taken on significant Hindutva baggage, like it or not. Green had found itself working along with Saffron, even if the two were not cohabiting or even cooperating to any serious degree.

Bahuguna and the TBVSS pressed on with their opposition, and the cycle resumed in 2001. Protests forced another halt to construction in March 2001, the state's High (i.e., appellate) Court ordered work to resume, opponents blocked construction, police intervened, construction resumed. But now after almost three decades of opposition, the movement appeared to be sagging.

As befits India's constitutional structure, the last word was to be given by the country's Supreme Court. By 2002, a public interest litigation case filed by TBVSS in 1985 questioning the dam's environmental and safety viability had gradually moved slowly through the Court's system and came up for review. The Court began to consider the case, and Bahuguna among others provided testimony arguing along both the technical and eco-social tracks. Finally in September 2003, the Court issued a decision in favor of the dam, holding that all environmental conditions had been complied with. Construction continued and the dam's first phase was completed in 2006, with a final generating capacity of 1000MW augmented by a downstream facility furnishing another 1000MW to be available by 2023. [72]

It is hard to imagine anything more than Sunderlal Bahuguna and the TBVSS could have done to oppose the Tehri Dam than they did. Petitions, rallies, demonstrations, work blockages, 70+ day fasts, mass arrests, national (even international) media coverage, lawsuits – all came into play, in most cases repeatedly. Outside support came from some elements of the Hindutva movement, normally not an ally in environmental matters. The BJP ministries in power between 1996 and 2004 might have been expected to lend some support, given the affinity between the BJP's Hindutva sympathies and the VHP, but evidently economic development with its demand for ever more energy had a higher priority for the party's policy makers (and was thought to have more traction with voters) than opposing dams.¹⁶ In the end, the Tehri Dam movement constituted what was to be the last truly massive instance of environmentally-oriented activism to protect rivers against large dams in India.

Ganga eco-zone: Saffron takes charge

Some 30 miles upriver from the Tehri Dam and reservoir, a series of smaller dams along the Ganga drew opposition of a different order. Rather than adding support to a basically secular protest, here a Hindutva orientation essentially took over the protest in the form of a determined advocate.

Work on the first two of five dams along the Bhagirathi Ganga had drawn some opposition in the early 2000s, but they had proceeded to completion by mid-decade. The remaining three dams were intended to add another 1460 MW of electricity. Unlike the Narmada and Tehri projects, all five dams were intended to provide only energy; there would be no reservoirs, no oustees, and no irrigation. Accordingly, there was not the scope for mass protest from those who would be affected, though there was some environmental opposition (as well as some local support for the dams as providers of employment and energy).¹⁷

The tempo picked up significantly just after the second of the two initial dams was inaugurated in June 2008, when G. D. Agrawal, a retired professor of environmental engineering at the Indian Institute of

¹⁶ Interestingly, there has been virtually no attention paid to the BJP government's role in the Tehri Dam saga. Surely the issue was important enough to have been seriously considered at high level in successive BJP ministries, if only because of the media attention given to it.

¹⁷ Except where noted, this subsection draws mainly on Georgina Drew's study *River Dialogues* (2017).

Technology at Kanpur, began a fast in opposition to the three remaining dams. Agrawal insisted that his activism in his own account was not based on his scientific or technological expertise,¹⁸ however, but on his Hindu devotion to the Ganga as an especially sacred river – “Mother Gangaji” he called it. Once he had involved himself in the opposition to the dams, Agrawal quickly dominated it, becoming an uncompromising one-man show, dismissive of the “common man” and not given to sharing the stage with others. ([17]: 13–14 & 131–132; also [41]: 191–198). Certainly the bearded, sadhu-like appearance of this septuagenarian helped reinforce his religious credibility.

But his long experience on the technical side and the networks he had built¹⁹ enabled him to conduct a masterful public relations campaign, including five fasts-unto-death lasting twice more than 30 days and in the final instance almost four months.²⁰ The first fast in 2008 led to a suspension of two of the planned dams, while the second one, undertaken the next year induced the government to suspend the third dam project. Then when the state reversed the suspension in 2010, Agrawal launched a third fast. This time the third dam was canceled altogether, and an “Ecologically Sensitive Zone” or “Eco-Zone” was promised that would include the whole area. The Eco-Zone was then created in December 2012 and officially notified in 2019.²¹ The zone would prohibit industries, mining, quarrying, timbering, sawmills, and untreated sewage, allowing only “micro-hydel” projects that would produce a few kilowatts of electricity.

Two more month-long fasts followed in 2012 and 2013, in which Agrawal demanded action by the National Ganga River Basin Authority that was to administer the Eco-Zone. He began his sixth and final fast in June 2018, demanding that the government ban hydro-electric projects all along the Ganga and its tributaries. After announcing in October that his fast would end with his death, he died two days later on the 11th of that month, at the age of 86 [67].

The three cases

The three cases are summed up graphically in Table 1. As noted earlier, the Mertha-Lowry concept holds that social movements opposing dams²² require three essential components to induce any real policy change: entrepreneurial activist leadership; media engaged at a high level; and a coalition of like-minded and supportive allies. All three cases attracted gifted activist leaders: Patkar, Amte and Bahuguna inspired followers, organized and led massive demonstrations; Agrawal distained such efforts but along with the other three proved a master of the strategic fast to focus public attention. All the campaigns developed effective links with the media and received national and even international coverage of their actions. And finally the Narmada and Tehri dam leadership built circles of supportive NGOs at national and even international levels. There is little if anything more they could have done. Agrawal in contrast had little use for outside support, preferring to manage things tightly on his own terms, as Drew [17] amply shows, though he may have had support from Hindutva organizations like the VHP.

The first two initiatives were hugely successful as movements drawing widespread attention and support, and even achieving temporary

¹⁸ Which was considerable; see for example Agrawal [1].

¹⁹ He was, for example, the Executive Chairperson of the People's Science Institute, a scientific organization focusing on the Himalayan region and located in Dehra Dun ([54]: 28).

²⁰ See India Water Portal [35] for an illustration of his ability to generate media publicity for his fasts. The article includes a number of press clippings.

²¹ Gazette of India [25]. The effort to bring about the Eco-Zone was a long and arduous one, as should be clear from the account given here, but the Zone itself is scarcely unique; there are 10 such zones in Uttarakhand State and 428 in the country as a whole [27].

²² Strictly speaking, in his final fast, Agrawal was not opposing a dam but rather a hydro diversion project that would “borrow” water from the river, use it to generate power and then return it to the river. But it was close enough to a dam that we can include it in our analysis.

Table 1
Sacred river case studies.

	Sardar Sarovar	Tehri Dam	Bhagirathi Ganga
Dates	1979–2017	1978–2006	2005–2012
Type	Reservoir	Reservoir	Diversion
Energy	2700 MW	1000 MW	1460 MW
Irrigation	1.8 m ha	270k ha	None
Ousteers	200k-1m	85–100k	Few
CSO actions	Huge	Large	Some
Ideology	Green	Green/some Saffron	Saffron
Champions	Medha Patkar Baba Amte	Sunderlal Bahuguna	G. D. Agarwal
Fasts	Many	4	6
Outcome	Supr Court decision 2000	Supr Court decision 2003	Eco-Zone promised 2010
Final result	Dedication 2017	Dedication 2006	Eco-Zone 2012

policy success as dam construction was halted for a time. But though each won a number of battles, both lost their wars, as development interests in the economy and all branches of government proved too heavy a foe. On the other hand, the third drive succeeded in establishing an eco-zone prohibiting any construction, even if it became only one of hundreds of similar zones spread over India.

Mertha and Lowry's three factors may have been the determining ones in their study of dam opposition in America, Australia, and China, and may have been necessary ones in India, but they were not sufficient to bring success to the Narmada or Tehri Dam campaigns. Agrawal, on the other hand, achieved his goals while disdaining any need for allies. A formula that worked in other country settings did not work in India.

But we should also look at the unemphasized fourth factor in the Mertha-Lowry formula: support from within the state. From their analysis it seems clear that the Chinese anti-dam campaign could not have succeeded without critical support from within state officialdom. And in all likelihood, the Australian effort could not have succeeded if a national election had not returned to power a new prime minister who had committed himself against the Franklin River dam during his campaign. In the American case, there may have been anti-dam activism from within the government, perhaps an environmentalist faction within the Interior Department, but the reader is told only that "In early 1967 federal authorities abandoned the Grand Canyon dam proposal" ([45]: 6), implying that the three factors were enough to carry the day.²³

In all the literature on the Indian cases that I have been able to examine, there is no hint of anti-dam activism or even sentiment from with the government at any level. This could be because those writing about the general topic did not ask appropriate questions, but surely any substantive anti-dam interests within the state would have come to light amid all the research and investigative journalism the Narmada case inspired. It should be fair, then, to conclude that anti-dam interest from within the state was absent or at best very minimal and unarticulated. It would certainly be worth extending Mertha-Lowry's model to other cases to see if perhaps a fourth factor should be added to their three.²⁴

The courts: the next resort?

Although protests have erupted against river projects from time to time in more recent years, none have reached the scale or achieved the media coverage and publicity of the Sardar Sarovar and Tehri dam campaigns of the 1980s and 1990s, or even G. D. Agarwal's much narrower effort in the early 2000s. Massive movements and well-publicized strategic fasts to save rivers seem to be a thing of the past.

²³ It should be noted that the Environmental Protection Agency, which could have been a strong opponent of the dam, was not created until 1970.

²⁴ A fifth factor could also be added: all three Mertha-Lowry cases involved cultural heritage sites of significant importance, and the same could be said of the three Indian sites, so it could be argued that this would be another necessary condition for anti-dam success, though not in the two Indian cases even though they met Mertha-Lowry's first two requirements.

In their place, however, has arisen an altogether different effort to save rivers from pollution and diversion: legal personhood for rivers, similar to the status long granted to corporations and government bodies, which can in common law systems like India's bring cases in court against persons and institutions harming them and also be sued by plaintiffs claiming loss or injury caused by these actors

The concept that objects in nature have inherent rights that humans must respect has long existed in many indigenous traditions throughout the world, but its modern origins are generally considered to date back to 1972, when Christopher D. Stone, a law professor in California, published an article titled "Should trees have standing? – Toward legal rights for natural objects" [69].²⁵ The idea that objects in nature should enjoy legal standing seemed ridiculously farfetched initially (see [75]), but over the years it acquired some traction. In 2006, a borough in Pennsylvania became the first governmental unit to employ nature's right in justifying an ordinance to protect a local river from pollution, and then in 2008 Ecuador became the first country to grant rivers and other natural resources legal recognition.²⁶

In the civil society approach to saving India's rivers with its activism, demonstrations, agitations, and fasts that characterized the efforts discussed thus far in this paper, the goal was to pressure the state to desist from dam construction or river diversion for hydropower and irrigation. In contrast, efforts to promote legal personhood for rivers have taken two quite different paths: court decision or legislation [50]. Thus far, in South Asia, courts have been the only arena for action,²⁷ while in other regions of the world both routes have been taken.

The Indian state of Uttarakhand drew worldwide attention in March 2017, when its High Court took on a public interest litigation (PIL) suit and issued a decision declaring the Ganga and Yamuna rivers along with their tributaries to be "juristic/legal persons/living entities having the status of a legal person."²⁸ To "protect, conserve and preserve Rivers Ganga and Yamuna and their tributaries", the court appointed three specific office holders: the Chief Secretary (highest level civil servant), the Advocate General of Uttarakhand State, and the Director of the Namami Gange (the national level Clean Ganga Program) as guardians *in loco parentis* (in place of parent) ([4]: 8). The charge was thus an environmental one.

²⁵ There was in fact a significant British colonial interest in designating non-human objects as juristic persons, but the focus then was on religious idols, concerning which many lawsuits were instituted in the 19th century ([15], cited by [4]: 4). There was no inclination at that time to include objects in nature.

²⁶ See Cano Pecharraman [11]: 4).

²⁷ With one exception: In May 2017, within a couple of months of the Uttarakhand High Court decision, the state legislature in Madhya Pradesh passed a resolution to give the Narmada River "living entity" status [55]. But no act or even a bill has emerged since that time.

²⁸ Mohd Salim v State of Uttarakhand [47]. See for example Safi [59] in *The Guardian*; also references to the decision in the *New York Times* [76]. An allied case dealt with two glaciers in the same region and was decided along essentially the same lines: [42].

The rationale supporting the charge, however, was largely religious, referring to the sacred aspects of the two rivers. The key paragraphs stated that:

11. Rivers Ganges and Yamuna are worshipped by Hindus. These rivers are very sacred and revered. The Hindus have a deep spiritual connection with Rivers Ganges & Yamuna. According to Hindu beliefs, a dip in River Ganga can wash away all the sins.
17. All the Hindus have deep Astha [faith] in rivers Ganga and Yamuna and they collectively connect with these rivers. Rivers Ganga and Yamuna are central to the existence of half of Indian population and their health and wellbeing. The rivers have provided both physical and spiritual sustenance to all of us from time immemorial. Rivers Ganga and Yamuna have spiritual and physical sustenance. ([47]: paragraphs 11 and 17).²⁹

The High Court's rationale for its decision, in sum, was basically Saffron, with a slight tinge of Green.

This High Court decision was noted almost immediately as a potential judicial landmark, and it generated considerable comment, most of it critical. In terms of logic, if the Ganga were to be granted legal personhood with appointed official guardians, the state would become in effect both a violator of Ganga's personhood (through its development activities) as well as an accessory to violations (by allowing private bodies to damage Ganga), and at the same time would be charged with protecting Ganga – a clear conflict of interest ([38]; also [43] and [51]: 169). A second concern arose from religious implications: the High Court's Hindu-based justification for ruling could become a basis for excluding non-Hindus from using the Ganga [38]. Third, while state officials would face liability for failing to protect the Ganga, the High Court ruling made no provision for state support to them legally or financially ([49]; also [4]).

A fourth apprehension posed possible legal risks to the Ganga as a legal entity: if the river could sue those defiling it, could the river itself be sued for violating the rights of others (e.g., for floods, riverbank erosion, even droughts)? [49]. Fifthly and to make the Ganga's position even more difficult, its legal personhood did not provide for it to manage and control its own water (e.g., to restrict diversion to irrigation in order to maintain downstream flow) [52]. And finally, the state of Uttarakhand constituted only a small part of the Gangetic plain through which the river flowed on its way to the Bay of Bengal; the much larger and far more populous states of Uttar Pradesh, Bihar, Jharkhand, and West Bengal (and also the neighboring country of Bangladesh) could well be harmed depending on what upstream river guardians might impose (e.g., decreasing flow). Accordingly, it could be (and in fact was) argued that the whole business of legal personhood for interstate rivers should be a national matter, handled by the central government, not individual states.³⁰

Responding to a number of these concerns, especially those regarding the potential burden on government officials, right after the March 2017 High Court decision, the state government appealed the case to the Indian Supreme Court in New Delhi, which in a single sentence ordered a stay on 7 July 2017 [71]. As of five years later, the Court had not removed the stay or pursued the case further. In the immediately following years no other Indian court weighed in on legal personhood for rivers, though the Chandigarh High Court in 2020 acting *suo moto* (on its own motion, i.e., without a plaintiff) declared Sukhna Lake in that city to be a legal person with essentially the same rights as had been conferred on the Ganga/Yamuna in the earlier case [33]. Interestingly, one

member of the High Court bench was the same Rajiv Sharma who had written the opinion in the Uttarakhand case.³¹ The lake itself is an artificial body of water within the city's territory and only about 3 square kilometers in size, so its management and protection should be possible without excessive bureaucratic strain or judicial oversight – many orders of magnitude smaller and simpler than what the Ganga/Yamuna system would require. But the smaller scale of Sukhna Lake would allow an experiment in legal personhood that could prove instructive if and when that status is actually accorded to larger bodies of water. For this reason it can be expected that the Sukhna case will be closely watched.

Late April 2022 may well have opened a new chapter in the saga of river personhood in India, this time in the form of a Madras High Court ruling from its Madurai bench. In a case dealing with dismissal of a forestry official, Justice S. Srimathy declared “Mother Nature” a living being enjoying the status of a legal entity which the state could be directed to preserve and protect, using the same doctrine³² employed to provide state aid to orphans, helpless persons, irrespective of statutory authority. In her decision, Justice Srimathy referred to the 2017 Uttarakhand High Court ruling on the Ganga and Yamuna rivers ([57]; also [74]). Public and legal attention were thus returned to legal personhood for rivers. There will surely be much interest in how this plays out on the larger Indian legal/judicial canvas.

Returning to Mertha and Lowry's [45] test, certainly the first of their standards has been met by the legal personhood initiatives, though the mechanisms and arenas are quite different from those faced by the civil society campaigns. In this case entrepreneurship lies not in charismatic leadership inspiring big demonstrations or in well-publicized fasts but in assembling small teams of good lawyers.

Secondly, media continue to be important though less critical than for the civil society efforts, where media coverage is key to maintaining popular support. For riverine rights, media are useful for communicating successes to the public but do not add any real heft to making a case in court. Still, there are bound to be exceptions. The Turag river flowing past Dhaka offers an example of the media's potential to inspire legal action. A frontpage investigative report in the *Daily Star* in November 2016 [2] titled “Time to declare Turag dead” laid out a long history of “land grabbers” illegally building out the shoreline to set up all manner of industrial sites and impeding the flow of an already polluted river, acting in a legal climate of virtual impunity. Following the news report, a civil society organization with long experience in public interest law filed a petition with the Supreme Court to save the river from the predation. After a judicial investigation, in early 2019 the Court issued a judgment declaring the river a “legal person” entitled to representation by a designated legal guardian and further that all rivers in the country are equally entitled. To what extent the Court's decision will lead to real change, of course, remains to be seen. But a clear legal framework has been set into place.³³

Hopes for investigative journalism like Ali's [2] article in the Turag should be tempered for both India and Bangladesh, however, in view of the slide toward authoritarianism across recent years in the two countries, documented in the annual Freedom House reports ([24] and earlier years, also [10]). A distressing indicator of media freedom can be found in the data series assembled by the Varieties of Democracy Project (V-Dem), which show a steep drop in the ratings for media self-censorship since the present political leadership took power in both countries [79].

Finally, the third standard calling for building a coalition of supportive allies is also not as necessary as for the andolans, but it can nonetheless be highly useful in linking up with legal campaigns elsewhere to build and use a national and even global shelf of knowledge

²⁹ Spelling of Ganges and Ganga as in the original decision. The court also cited several precedents establishing a personhood for Hindu idols and images ([47]. paragraphs 12-15). Kinkaid [38]: 562-563 explores this rationale at some length.

³⁰ The Uttarakhand government so argued in its appeal of both the Ganga and glacier decisions ([4]: esp. fn. 28).

³¹ Justice Rajiv Sharma had transferred from the Uttarakhand High Court to the Chandigarh High Court [63]. See also Sojan [68].

³² The legal term is *parens patriae* (parent of the people), wherein the state assumes responsibility for those unable to take care of themselves.

³³ Most of this paragraph comes from Islam and O'Donnell [36]; see also [83]. For the judgment itself, see Supreme Court [70].

devoted to riverine rights. In sum, the Mertha and Lowry package offers only a modest utility for interpreting the legal personhood case. The bar for entrepreneurship is much lower, the need for media support is also lower and in any case has weakened, and the necessity for coalitions has faded away on the domestic level.

If we add in the fourth factor suggested earlier in this paper (support from within the state), there was certainly agreement at several of the Bangladesh state agencies charged with protecting rivers that action should be taken, but lack of authority and will power to act rendered them inert bystanders to the predation occurring, unlike the cases taken up by Mertha and Lowry. In other words, unlike Chinese and Australian cases but like the American one, the environmentalist effort for the Turag river succeeded without help from the government's executive branch.³⁴

Conclusion

In the early 2020s, opposition and protests have continued against state-sponsored interference with the natural flow of Indian rivers, but they are small in scale and remote in location, far from the major sacred rivers. Locals have protested a diversion scheme for the Kharasotra River in Odisha State in 2021, for example [62], and a hydroelectric project on the Umngot River in Meghalaya State drew opposition protests [73]. But nothing like the massive and sustained protests of the Narmada and Tehri Dam campaigns have emerged in recent years, likely in part because after 2013 the state has done significantly better at resettling dam oustees, meaning that the core constituency of demonstrators for andolans has essentially disappeared [8]. Civil society activism on any serious scale seems essentially a spent force.

Could environmentalism and Hindu religionists – Green and Saffron – join forces to salvage and save India's rivers, at least the major sacred ones? There were hints of such possibilities in the Tehri Dam case, but then in the following Bhagirathi Ganga campaign, Saffron basically displaced Green as the lead actor. The outlook for any sustained Green/Saffron alliance appears less than promising.

Theologically, with its reverence for the natural world, Hinduism would seem especially open to ecological thinking.³⁵ Indeed, the Hindu-oriented Modi government did launch its Namami Ganga (Clean Ganga) project as its flagship environmental initiative bringing the two sides together, and it has initiated several efforts to generate cultural interest in wastewater management in sacred rivers [81], but it has made little real progress in actually reducing Ganga pollution since its introduction in 2014 (in fact levels have worsened: [12,21]).³⁶ The BJP government's priority has unmistakably been economic growth rather than environmentalism.

Clearly, for many Hindus, a sacred river can have physical pollution and spiritual purity at the same time, while for others the Ganga is self-purifying, eliminating all toxicity for the devotee bathing in it [3]. This ability to resolve or dismiss the problem is massively illustrated in the 12-year cycle of the *khumb mela* at Allahabad, where the Yamuna and Ganga join and over 30 million devotees congregate to take the holy waters – by far the largest religious gathering on the planet.³⁷

Just as science itself has for the most part either been in conflict with religion or has tried to ignore it since Galileo fell out with the Catholic

³⁴ And as for the possible fifth factor (cf. footnote 24), the Turag had no special cultural or religious significance on the order of the Indian river cases.

³⁵ David Haberman has explored this reverence in detail, e.g., Haberman [31,32]; also Krishna [40].

³⁶ By February 2021, when Namami Gange was supposed to end, only 116 of 310 sanctioned projects had been completed ([13] and [23]).

³⁷ G. D. Agrawal's response to the problem is illustrative here. As noted earlier, although he was a retired professor of environmental engineering and thus fully acquainted with the scientific aspects of riverine pollution, he insisted that his objection to dams on the Ganga was based only on its sacred nature – as if pollution was not a consideration at all (see especially Drew [17]: 131-132).

Church in the early 17th century, environmental science in India as a discipline has had little affection for religion. And environmental activists have had little occasion to work with or interest in working with Hindu activist groups. The two communities just live and act in separate world views and realities.

Kelly Alley suggests in addition that:

The key disabling feature [for any potential alliance] is that devotees and environmental activists associate the legal initiative with general government malaise and corruption in the implementation of pollution prevention and conservation programs ([4]: 14).³⁸

Altogether then, the picture for any real collaboration between environmentalist and Hindutva does not look promising. There are exceptions, such as the Govardhan Ecovillage in northwestern Maharashtra State, which since 2003 has combined Hindu devotion with state-of-the-art ecological practices in sustainable organic agriculture and energy.³⁹ But these anomalies are few in number and small in size.

On the legal personhood front, there are some possible bright spots. The Sukhna Lake case in Chandigarh did draw national attention, but it stands more as a laboratory experiment than a major turn in legal personhood for water bodies. And the very recent Madras High Court ruling on Mother Nature holds out some promise, though it would seem more likely that eventually the Indian Supreme Court will stay or even overturn the High Court decision on the same reasoning it employed in the Uttarakhand cases.

But the legal route should not be dismissed out of hand. Worldwide interest in legal personhood for natural objects in general and for rivers in particular has been growing rapidly in recent years. Putzer et al. [58] list some 78 initiatives globally aiming to grant "rights of nature" legal personhood to aquatic ecosystem since 2011, with 49 of them in 16 countries concerned with rivers, including Argentina, Australia, Bangladesh, Canada, Colombia, Ecuador, France, New Zealand, the United Kingdom, and the United States as well as India. Of the 49 cases, some 42 are dated 2017 or later. Amid this trend, it would seem highly likely that more favorable High Court rulings will emerge, and over time the Supreme Court may well find its way to view legal personhood for rivers more kindly.⁴⁰

Long persistence and patience will surely be required. It is worth recalling that lawyer-activist M. C. Mehta pursued his Taj Mahal air pollution cases for more than a decade in the court system before attaining a landmark victory at the Supreme Court in 1993. And later Mehta and his collaborators at the center for Science and Environment in New Delhi took fully six years to entice the Supreme Court to mandate air pollution controls for Delhi in 2002 ([9]: 136). And court judgments can be eroded by subsequent setbacks.

There is no doubt that the legal personhood path will be a challenging one, but presently it stands as the only feasible one on offer. Environmentalist Green andolans with their charismatic leaders, massive demonstrations, and worldwide media coverage appear no longer possible. And Saffron-inspired campaigns do not appear to hold much promise either, certainly if they require a leader on the order of G. D. Agrawal with his combined background as Hindu devotee and environmental engineering expert. There are surely Hindutva elements in the BJP, RSS and VHP that support environmentalism, for none of these organizations are completely monolithic in their policy preferences,⁴¹ and Hinduism itself is nothing if not pluralistic in accommodating widely di-

³⁸ Hindutva distrust of the state is likely diminishing, however, with the BJP exercising political control in so much of India at present.

³⁹ For more on the project, see <https://ecovillage.org>.

⁴⁰ Especially interesting is the recent decision of the High Court in neighboring Bangladesh to grant legal personhood to all that country's rivers (Willemse et al. 2019). This new status has been successfully tested in court at least once so far (*Daily Star* 2020).

⁴¹ See for example, Andersen's and Damle's (2019) analysis of the RSS.

verging attitudes and orientations,⁴² but in the end anything like muscular support for a Green agenda cannot be expected from a BJP-led government which is first and foremost committed to economic growth.⁴³

But over time a legal personhood campaign, hopefully fortified by the expanding worldwide interest in riverine rights [58], might carry the effort to save India's rivers. Indeed, the international expansion of these initiatives might even inspire a global andolan in its own right.

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⁴² Fer an overview of the religion's diversities, see Doniger and Mussenbaum ([16], esp. 1-17).

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