

Beyond “Socially Constructed” Disasters: Re-politicizing the Debate on Large Dams through a Political Ecology of Risk

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Abstract

Questions of dam safety and hazard potential most often do not take center-stage in contestations and articulations concerning large dams. Through a comparative study of two of Europe’s most emblematic dam disasters—Vajont (Italy) and Ribadelago (Spain)—and the ongoing conflict over the safety of the Lower Subansiri Hydroelectric Project in Northeast India, this paper argues that the damage caused by dam disasters is often not unavoidable or unforeseen but instead allowed to happen. Our cases show that power relations, economic pressures and profit influence “risky” dam management decisions, often disregarding the vernacular knowledge of concerned communities and silencing critical voices that do not fit dominant narratives of modernization and progress. We posit that an essential requirement for re-politicizing the question of dam safety is to unpack the apolitical notion of “socially constructed disasters,” thinking instead about “capital-driven destructions.” By emphasizing resistance against dam projects and against dominant risk discourses across space and time, this paper seeks to underline the legitimacy of past and ongoing struggles surrounding the construction of large dams.

Keywords: political ecology, environmental history, risk, vernacular vs. scientific knowledge, large dams.

Introduction

Disasters related to large dams have received little attention in debates over dams and development so far. On more than one occasion they have been described as “acts of god” and outside of human control (McCully 2001; Steinberg 2000). The risks attached to these gigantic hydraulic structures are often “technologically moralized” (Beck 1992), depoliticized and removed from the sphere of public debate (Huber and Joshi 2015). In several instances there have also been attempts to remove the controversies surrounding dam disasters from organized collective memory (Armiero 2011).

This is not surprising, considering the historical trajectory of the large dam sector and the powerful interests vested in it. With their potential to reproduce and expand western capital, and given the need for large-scale reconstruction and food production, large hydraulic engineering works were in high demand after World War II (Molle et al. 2009). The unrivaled, seemingly class-neutral symbolism of dams (signifiers of “the victory of ‘civilization’ over ‘wilderness’”; Kaika 2006, 291) made them central elements in post-war and post-colonial pursuits of modernization and nation-building, and a preferred instrument for displaying economic superpower during the Cold War (D’Souza 2008; Molle et al. 2009). Along with the spread of “hydraulic capitalism” (D’Souza 2008) came an increasing reliance on hydraulic bureaucracies to administer nature (Mitchell 2002; Molle et al. 2009). In an almost religious fashion dams were revered as “modern shrines” (Kaika 2006, 295), “temples of modernity” (Werner 2014), and among “the greatest man-made wonders of the world” (Worster 1985).

A “high modernist” ideology (Scott 1998), as in the boundless faith in science and technology for conquering nature and space—rearranging, standardizing and simplifying landscapes to increase their legibility and facilitate their control—is reflected in the high level of legitimacy that dams still enjoy among decision-makers today as catch-all solutions to climate change, energy crises and poverty (Baghel and Nüsser 2010; Baruah 2012). For such a narrative to unfold, the role of the state’s bureaucratic and planning elite has been pivotal in providing both financial and discursive support to dam construction, covering a profit-oriented agenda with a rhetoric of impartiality and common good (Molle et al. 2009). However, this same narrative is sharply at odds with the sacrifices large dams have demanded from millions of affected people across the world. According to the assessment of the World Commission on Dams, dam construction by the year 2000 had displaced 40 to 80 million people worldwide, while millions of others had to endure hardship and loss of livelihoods (WCD 2000).

As regards safety, the common rhetoric of dam builders insists that current state-of-the-art technologies can withstand any extreme geological or hydrological event (Baruah 2012). But dam-related disasters have been occurring throughout history up to present day. Among the most catastrophic in terms of casualties are the 1975 Banqiao and Shimantan dam disasters in China (over 171,000 victims; McCully 2001), the 1979 Machchu-2 dam failure in India (over 5,000; Sandesara and Wooten 2011), and the 1963 Vajont disaster in Italy (2,000; see case study in this article). Since the turn of the millennium more than 30 dam failures have been recorded in

different parts of the world.¹ Likewise, safety risks posed by aging dams are increasing, with many dams reaching their life expectancy (Agoramoorthy 2015).

This paper explores how and why dam construction continues to be projected as an orderly and safe activity, alongside the emphasized ideals of modernity, growth and clean/climate-friendly development. In particular, we shed light on the political dynamics surrounding the notion of risk in dam construction. We argue that an essential requirement for re-politicizing the question of dam safety is to unpack the notion of “socially constructed disasters.” While this notion is in itself a counter-frame to “natural” disasters or “acts of god,” it does not provide an explicit enough reference to the social distribution of the impacts that a “disaster” is made of. We therefore propose to instead think in terms of “capital-driven destructions,” a frame that points to the particular socio-economic configurations and political forces that drive decisions in the run-up to a potential disaster. We employ a political ecology lens to provide a more nuanced understanding of state-society interactions and the central role of capital and profit-making in big development projects.

We illustrate these issues through a comparative study of three dam conflicts: 1) the ongoing controversy over construction of the Lower Subansiri Hydroelectric Project in Northeast India; 2) the 1959 Ribadelago catastrophe, caused by the failure of the Vega de Tera dam during the Francoist dictatorship in Spain; and 3) the disastrous overtopping of the Vajont dam in northeastern Italy in 1963. While the Indian dam continues to be debated despite overwhelming evidence for safety lacunae (Baruah 2012), the two historical cases were obliterated from Spanish and Italian narratives of successful modernization until fairly recently (Armiero 2011; Remesal López 2009). The attempts to overrule contestations in all three cases call for an investigation of the power imbalances, political motives and tactics that shape both risk distribution and the stories around dam disasters.

Empirical research for this paper was carried out by conducting qualitative semi-structured interviews and reviewing grey literature, press, digital collections and reports. Historical research included a critical reading of archival sources and a cross-examination of judicial papers. The case studies illustrate how dam disasters are often not unavoidable or unforeseen but instead allowed to happen. Economic pressures and profit motives influence dam management decisions, leading to the silencing of voices that do not fit dominant success stories of progress. The subsequent policing of collective memories in the historical narration of the disasters is another aspect that contributes to the paucity of public debate about dam safety today.

While dam-related disasters often evoke controversies in their aftermath, dam safety rarely seems to be an issue prior to construction. We posit that a more thorough engagement with dam-related risks is imperative in the planning stages. Our cases show that resistance against dam projects

¹ “List of Dam Failures.” See http://self.gutenberg.org/articles/list_of_dam_failures. Accessed November 11, 2015.

constitute important alerts and that disregarding the vernacular knowledge of concerned communities in fact elevates the riskiness of those projects. Showing the relevance of these issues across space and time is a powerful way of underlining the legitimacy of past and ongoing struggles against large dams.

Unraveling the Social Construction of Disasters

Literature on disasters has long overcome narratives of merely natural or supernatural causes (O’Keefe et al. 1976), yet remains weak in problematizing how disaster discourse has been “naturalized” and desocialized in the first place. Declaring disasters as simply unnatural can mistakenly reify the social as a uniformly acting entity (Steinberg 2000). Taking social construction as a universal explanation resembles those recurring claims made upon the Anthropocene, where the protagonist role of class, capitalism and the state within the “Anthropos” supra-category is either ignored or downplayed (Palsson et al. 2013; Nixon 2011). We claim that discourse on the co-production of society and nature needs to look closer at how disparities of power and knowledge shape this socio-natural nexus (Nixon 2014). In other words, for the hierarchies, structures and inequalities, on which the very notion of disaster is built to become clearly visible the social needs to be unlocked. Political ecology research has dismantled the distracting veil that often covers the political in human-environment interactions, ultimately overcoming the very dichotomy “social–natural.” Political ecology hence shows how disasters are neither natural nor neutral.

In problematizing disasters one inevitably enters into discourses of risk, risk acceptance and risk vulnerability. Political ecologists define risk as “the compound function of biophysical hazard exposure and people’s vulnerability, [meaning] their ability to anticipate, respond to, and recover from a hazard event” (Collins 2008, 24; Wisner et al. 2004). There are two main arguments in need of consideration relating to these themes. Firstly, the consequences and reactions following a disaster are only amplifiers of pre-existing social dynamics (Barton 1970; Saitta and Lazzarini 2015; Wisner et al. 2004). Depending on geographical positions and social designations, disasters affect people differently (Davis 1999; Collins 2010; Hewitt 1997). Studies on environmental racism and injustice, such as the work of Pulido (2000) on white privilege or Bullard and Wright (2010) on the aftermath of hurricane Katrina, speak of disaster vulnerabilities created along lines of race, gender, class or ethnicity.

Collins (2008) emphasizes those inequalities perpetuated by state and market institutions alike, which externalize risk, thereby translating it into vulnerability. He sees this playing out particularly powerfully in local-level processes of marginalization and facilitation. Facilitation denotes the institutionally mediated processes enabling powerful groups “to exploit environmental opportunities associated with hazardous places for private gain,” with unjust socio-environmental consequences (Collins 2008, 22; 2010). These inherent connections of capitalism to human-made disasters can be seen as a “price for progress” paid unwillingly by parts of the social whole.

Under this lens disasters are not a new form of capitalist technique but rather make part of the historical continuum of “accumulation through dispossession” processes (Harvey qtd. in Storey 2008).

Secondly, disasters are the result of knowledge and power dynamics that shape risk discourse in society (Anderson 2001). Ulrich Beck, despite his earlier optimistic reading of a “risk society” in which modern risks are invisible and equally affect everyone (thus making class obsolete; Beck 1992), noted how risks are ontologically power-laden. He thus underlined the differences between “decision makers who could ultimately avoid the risks” and “involuntary consumers of dangers who do not have a say in these decisions” (Beck 2009, 195). In this regard, one needs to ask how risk acceptability is negotiated, through which processes risk materializes in the form of a disaster, and how the state creates disaster vulnerabilities (Wisner 2009).

Ahlers et al. (2014; see also Scott 1998) concede that it is precisely a combination of visual orderliness, facilitation of geo-political control and generation of incomes that allures bureaucracies and developers to take control over and “modernize” socio-natural environments. Technically imposed physical order symbolizes and at the same time legitimizes social order, as both are defined through relations of power and functions of the market. These understandings force us to focus on the connectedness of social, economic, political and ecological elements in human-environmental interactions (Robbins 2004). In this paper we situate our analysis in a conceptual frame that perceives dams as parts of “organic machines” symbolizing how the ensemble of riverine landscapes is produced by the interaction of social, bio-physical and technological dynamics (White 2005). Dealing with such “politicized environments” (Bryant 1998), the debate around dams needs to focus on the co-construction of disasters and on existent disparities in the ways humans define, interpret, create and experience dam-related risks (Dwivedi 1999; Zegwaard and Wester 2014).

Authors like Biggs (2010) and Scott (1998) have pointed out how modern state ideology based on “self-confidence about scientific and technical progress” often serves to legitimize risk-taking in the management of rivers, forests and industries. Whereas Scott (1998) sees central authoritarianism and a strong bureaucracy as favorable conditions of a “high modernist” ideology to realize large-scale development projects, Biggs (2010, 233) urges us to further consider “the important roles that provincial governments, local governments, private enterprises, international organizations, universities, and individuals have come to play in environmental management and development policies.”

Wisner (2009) opines that the amorous relationship between capitalism and disaster goes beyond the abuse of destroyed landscapes by rogue companies. Davis (1999) points to how real estate markets are profiteering on the backs of those who are heavily afflicted by a disaster, but at the same time disregards the market-driven nature of many side effects of “natural” or human-made disasters (Steinberg 2000) and how disasters are recycled “unnaturally” as one form of class struggle (Harvey 1999). Wisner (2012) precisely argues that the constituent driving force of disaster is capitalism. He criticizes approaches that turn a blind eye to these inherent connections

and instead seek “disaster-averting services,” for such approaches run the risk of “turning everything in the world into a commodity” (Wisner 2012, 124).

Most often geological, climatic or seismic events take place at levels that are not anthropogenic and cannot be mitigated. However, what constitutes a disaster is not those mere events but the way they are made to affect people and livelihoods. This latter aspect is indeed determined through negotiations over risk distribution and risk perception across and within societies (Kelman 2003). Analyzing disasters is thus both a question of whose and what kinds of claims are taken into account when risk is defined and decided upon; both a question of power and knowledge. It is especially when “natural” processes lie beyond the immediate control of human activity that the voices of those in vulnerable positions need to be given more prominence.

In narratives of conflicts about risk-taking one instead often finds an underlying discourse that grants validity to claims about “real” risks based on science or expertise, while dismissing claims by local communities as “lay perceptions” and rendering them obsolete (Jasanoff 1999; Baruah 2012). Such dismissals serve to make risk discourse “the exclusive province of the expert” (Anderson 2001, 41), alienating it from democratic spheres. Funtowicz and Ravetz (1993) consider dam conflicts as illustrative of the need for a post-normal science framework, advocating for an “extended peer community” that includes people with stakes in the issue to assure fair and qualitative decision-making. Post-normal science attempts to place technical expertise in the direct service of the public. Along with other theories for a more democratic and grassroots production of science (see Irwin 1995) it informs the basis of this article.

As regards large dams, several reports have highlighted their controversial impacts (Richter et al. 2010; WCD 2000). However, the hazard risk dams carry in case of a failure or overtopping is much less discussed in the literature (Steinberg 2000). Yet history indicates that dam failures *do* happen, and with severe consequences for those in vulnerable socio-economic and geo-physical positions (Armiero 2011; McCullough 1968). The avoidance of social debate in dealing with risk-taking in the case of dams takes the form of reassuring the public of the need to adjust to the unavoidable side-effects of development (Evans and Reid 2014); to build resilience instead of resistance. In this article we emphasize the resistance of dam-affected people and reassert the possibility for recalcitrant, not simply resilient, subjects (Latour 1997) “who may actively or passively put authority to the test, change the questions that are posed to them and also ask new questions, thereby potentially resulting in unexpected, novel forms of subjectivity” (Savransky 2014, 96). The resistance of affected communities highlights their capability for self-defense and self-organization (Poma and Gravante 2015). The occlusion of contestations by local communities against dam projects in post-disaster contexts, therefore, comes as no surprise (Armiero 2011; Remesal López 2009).

Wisner et al. (2004) question why there is no international movement of disaster-affected people. Considering that dam-affected communities continue to struggle with uncertainty over the safety of large dams (Baruah 2012; Kohli 2011), we argue for the potential to share experiences across space and time. Contemporary and future struggles that challenge the depoliticization of dam-

related risks can thereby be supported, and their legitimacy strengthened. This is not meant as a “lesson to be learnt” or a simple transfer of tools of resistance from the past to the present. Rather we use these case studies to highlight that oblivion and erasure of such events from collective memory are organized; to provide more nuanced understandings of power/knowledge dynamics within society, the state and the scientific domain; and ultimately to support our claim on “capital-driven destructions” instead of simply “socially-constructed disasters.”

Dam Struggles and Dam Failures across Time and Space

Lower Subansiri, Northeast India

The conflict over the 2000 MW Lower Subansiri Hydroelectric Project in Arunachal Pradesh and Assam is one of the most politicized dam conflicts in India today. It has also been among the first conflicts in the country over the downstream impacts and safety risks of a large dam, mobilizing affected downstream populations, diverse civil society groups, scientific experts and political parties. As India’s capital-driven hydropower boom is pushing hydropower and associated conflicts into the most remote Himalayan river valleys, the persistent Assamese blockade against the dam stands out for bringing the country’s most powerful dam proponents—the National Hydroelectric Power Corporation (NHPC) and the Government of India—to their knees. In the face of relentless attempts by the bureaucratic and political establishment to delegitimize the public’s concerns, this is no mean feat.

The conflict originated in the early 2000s, during the environmental clearance process for what was to become India’s largest hydroelectric project to date. The dam, built on the border of Arunachal Pradesh and Assam states, would submerge 47 km of the Subansiri River—over 3,400 ha of forest land—in Arunachal Pradesh, with relatively little human displacement upstream (Vagholikar and Das 2010). However, downstream Assam with its huge population of river-dependent communities was not considered in negotiations over rehabilitation and benefit-sharing, as Indian law includes no mechanism to account for downstream impacts of large dams. This triggered indignation by a growing citizen alliance, including affected peoples, student and farmer organizations, and the state’s major opposition party (Baruah 2012).

Initially, the dam opponents raised concerns about the impacts of the dam on river flows. The Subansiri River is known for unleashing its fury every year during the monsoon season, leading to extensive flooding in Assam. The collective memory of the disaster potential of the river goes as far back as the 1950 Assam earthquake, when the failure of a natural landslide dam on the river caused catastrophic floods downstream. Since 2004 there have also been several destructive flash floods as excess water had to be released suddenly from hydropower projects in Arunachal Pradesh and in Bhutan (Vagholikar and Das 2010). By 2006 the citizen alliance succeeded in pressuring both the Government of Assam and the developer, NHPC, to conduct a downstream impact study. Concerned with a speedy resolution of the dispute and in a bid to calm the waters,

the dam proponents consented and an interdisciplinary committee, comprising eight experts from Assamese universities was set up. The developer was soon to regret this decision.

In 2010 the Assamese expert group confirmed the fears of the protesters: operating the dam would cause dramatic daily flow fluctuations, affecting river-dependent communities and their livelihood activities possibly for hundreds of kilometers downstream. Not only that, they made an even more alarming discovery. Even though the sandstone rock prevalent in the dam site forms a weak foundation for such a large structure, and despite the region being highly prone to earthquakes, NHPC had changed the dam's design parameters from earlier projections—in an effort to reduce costs but at the expense of dam safety. Not surprisingly, the committee's final verdict was that the siting and design of this mega-dam were inappropriate in such a sensitive location.

Up to this point the Lower Subansiri conflict could have set a positive precedent for the governance of large infrastructures. The massive public resistance against the project, based on situated knowledge of the local climate, geology and hydrology, and the historical memory of hydro-geological disasters in the region, acted as an invaluable warning system. Instead, the corporation decided to go on the offensive. Alluding to the allegedly “superior” experts from reputed national scientific institutions, who had helped design and clear the project in the first place, and engaging the discourse of high modernism, NHPC tried to defame and delegitimize the concerns raised against the dam (including those by the Assamese experts) by labeling them as “myths.” In response to arguments about the possibility of a dam disaster, their publicity highlights “no case of distress on any dam” in the 36 years of the company's history (Baruah 2012, 47–48).

Ultimately, cost considerations and expert arrogance overruled the critical engagement with risk and safety, leading to a highly politicized stand-off between the corporation, the movement, and a heterogeneous group of national and regional politicians, bureaucrats and scientists between the two ends of the spectrum. Since 2011, when activists blocked the supply of materials to the dam site, construction work has been suspended. The state authorities, instead of taking a clear stand on the issue, have delegated expert committee after expert committee in hope of revealing unambiguous evidence on the safety of the dam—and to uphold the high-modernist image of hydraulic engineering as an unquestionable high horse. Not with much success: in the latest round of expert investigations, four experts from Assam advocated against resumption of work on the stalled dam, while four experts appointed by the Central Government spoke in favor of it (*The Telegraph India*, March 12, 2016).

Yet, in view of the plethora of studies confirming the “weak science” of the project (Bhattacharjee 2013), the government's unwillingness to take a final decision reflects a more deep-seated ambiguity than merely scientific uncertainty, namely that of conflicting stakes between facilitator of capital investment and guarantor of social welfare; more than a billion USD already invested versus hundreds of thousands of political votes from the affected floodplain inhabitants; and the authority of the state over development decisions slated against the power of

the critical mass. While the state does not explicitly side with the corporation, it is equally complicit in heightening the disaster potential. Delegitimizing vernacular knowledge and disengaging from the risk debate even in the planning stages increases the disaster vulnerabilities of the floodplain inhabitants.

Ribadelago, Northwestern Spain

As India in recent years, Spain experienced a massive socioecological transformation through the mobilization of water during the 20th century. While this process has permeated different political regimes, it was one of the most symbolic endeavors of the Francoist dictatorship (1939—1975). By the end of his life, Francisco Franco had succeeded in transforming the Spanish waterscape, well deserving his popular nickname of “Frankie the Frog.” Yet the mocking allusions to Franco’s predilection for appearing in countless newsreels inaugurating reservoirs risk omitting the fierce repression upon which this transformation was grounded (Swyngedouw 2015).

Such repression involved the eviction of thousands of people, flooding their ruthlessly expropriated towns, lands and graveyards; the systematic use of forced labor in hydraulic projects during the first period of the dictatorship; and several “accidents” and “tragedies” that in the best of cases became mere footnotes in the Francoist narrative of hydro-powered progress. The 1959 catastrophe of Ribadelago in northwestern Spain is the worst dam-related disaster in Spanish history since 1802. Yet it remains conceived as a largely obliterated, unusual tragedy, which only in recent times has been studied by local scholars (García Díez 2003; Museo Etnográfico de Castilla y León 2008; Remesal López 2009; Swyngedouw 2015).

In the cold night of January 9, 1959 the Vega de Tera dam collapsed. Built by the company *Hidroeléctrica de Moncabril* in the Tera valley, the dam had been filled for the very first time. The water released destroyed the town of Ribadelago eight kilometers downstream, killing 144 of its 549 sleeping inhabitants. Only 28 bodies were ever found. At first, most of the newspapers talked about the “overtopping” of the dam after days of heavy rain, avoiding the words “breakage” or “failure” and emphasizing the event’s tragic aspects. In a further attempt of naturalization even the rumor of an earthquake having caused the dam’s overtopping was circulated in the region and in the national press.² After one week Spanish media received instructions to reduce the tone of the drama and highlight how efficiently the Francoist government was pushing the reconstruction of Ribadelago, and how solidary the Spanish people were with the victims of the disaster. On January 21 Franco symbolically adopted the town by approving special legal measures to reconstruct it.³ References to Ribadelago slowly disappeared from the media (García Díez 2003; Museo Etnográfico de Castilla y León 2008; Remesal López 2009).

² Archivo Histórico Provincial de Zamora (AHPZ), 18/59 (Ribadelago), box 7.

³ The town was rebuilt in a different location near the lake and renamed “Ribadelago de Franco.”

When the trial took place four years later, in 1963, it only occupied a few lines in the press. Pressurized by the police and other authorities, the lawyer who defended the cause of several families could not find a single engineer to assist him with the technical aspects of the case. The only one willing to do so had had relevant responsibilities during the democratic period of the Second Republic (1931–1939) and thus was banned from practicing his profession. Instead it was one of the most prestigious Spanish engineers at the time who assessed that the cause of the disaster lay in the design of the dam project as well as in the poor quality of the construction works and materials used. Since this referred to a responsibility prior to the accident, six of the ten managers and responsible technicians were acquitted of all charges. The other four were accused of “reckless endangerment” for having ignored the leaks and cracks in the dam and for filling the reservoir beyond its capacity to produce as much electricity—and profit—as possible. They were sentenced to one year of prison and disqualification from public jobs but were later absolved or reprieved by the government.⁴ No state or regional officials in charge of monitoring the quality of the dam works were ever accused (García Díez 2003; Museo Etnográfico de Castilla y León 2008; Remesal López 2009).

Leaks in the Vega de Tera dam were significant at least since 1956, witnessed by workers at the dam site and by inhabitants of the valley. In fact, two external companies were hired to fix the leaks by injecting concrete but they were not successful. One of the local workers described the dam as a “sprinkling can” (García Díez 2003, 338). Although this and other flaws in the dam’s construction were known, no public protest was documented prior to the dam failure. In the aftermath of the disaster, under the tight grip of Franco’s dictatorship, critical voices were not granted space in the national newspapers (Remesal López 2009). Only the clandestine Spanish press denounced the naturalization attempts of the Francoist state, mocking the earthquake theory and pointing at the company’s connections with powerful figures of the regime (*CNT*, January 25, 1959; *Solidaridad Obrera*, January 22, 1959). The legal, scientific and media powers mobilized were crucial in the dictatorship’s project of both concealing facts and crushing any public resistance (Remesal López 2009).

Vajont, Northeast Italy

On October 9, 1963 about 300 million cubic meters of rock fell off Mount Toc into the Vajont reservoir, causing a fifty-million-cubic-meter wave that partially overtopped the dam and destroyed everything in its way. About 2000 people were killed. The mainstream media represented the disaster as an unforeseen chain of misfortunate events. The Italian Communist Party and its newspaper, who denounced the responsibilities of the corporation and the

⁴The records of the trial are stored at the Archivo Histórico Provincial de Zamora (AHPZ), 18/59 (Ribadelago).

authorities, were accused of being “jackals” exploiting the tragedy for their electoral ends (Armiero 2011, 191).

Compressing the Vajont story into the short time scale of a one-day event necessarily emphasizes the “accident” interpretation and even naturalizes it. The landslide, the wave, the destroyed town, and the dead bodies have produced a geography of suffering and mourning. But in order to see past the logic of the accident we need to look at the history of power and injustice behind it.

The history of Vajont dates back to the 1920s, when the Italian mountains were transformed into a gigantic hydropower machine fueling the industrialization of the country.⁵ Blending state and private interests towards the proclaimed superior good of the entire nation, it seemed reasonable, even ethical, to sacrifice what were seen as a few backward and marginal Alpine communities. The acquiescence of the state towards the hydropower corporations is patent in the Vajont case. The SADE corporation (Società Adriatica di Eletticità) repeatedly changed its project for the exploitation of the Vajont river basin: the dam “grew” from 130 to 260 meters in height, becoming the highest arch dam in the world at the time. As a consequence, the capacity of the reservoir expanded from 33 to 150 million cubic meters of water.

In contrast to the authorities’ subservience towards the corporation, local people manifested their opposition to the project from the very beginning. After a first phase of struggles against the expropriation of land and the erosion of collective uses, resistance focused on risks directly related to the dam. Vernacular knowledge alerted about the danger of building a gigantic reservoir recumbent on the fragile slope of Monte Toc, in local dialect meaning “rotten mountain.” The signals of the incumbent landslide danger were many and included cracks in the buildings, noise from the mountain and the slow downward movement of entire lines of trees. On behalf of the anti-dam committee a professional geologist, Professor Milli, wrote a report confirming the people’s concerns (Armiero 2011, 185).

The communities found support from the Communist Party, especially through the work of journalist Tina Merlin who prophesied the coming disaster in a 1961 article (*L’Unità*, February 21). In turn, official experts and officers ignored any claim that questioned the safety of the dam. In the end it was the fears of mountain villagers with their primitive tools of monitoring vs. the scientific knowledge of experts and their cargo of modern techniques. Repression of grassroots resistance also worked through this annihilation of local knowledge. Risk and safety were thus portrayed as a matter for neutral science and impartial technical expertise, and not for communist agitprops or ignorant mountain dwellers (Armiero 2011).

Both the corporation and the authorities repeatedly argued that the claims of the villagers and the allegations of representatives of the Italian Communist Party did not have any scientific foundation. A good example is the correspondence between the municipality of Erto-Casso—

⁵ Between 1898 and 1914 the hydraulic power produced in Italy increased from 40,000 to 850,000 kWh. For more details see Armiero 2011, 33–43.

one of the villages affected by the dam—and the corporation just a month before the disaster. The corporation dismissed all the signals of imminent disaster listed by the municipality, arguing that monitoring the dam was not a task for mountain dwellers but had to be entrusted to professional experts and sophisticated instruments such as those which the corporation could mobilize. As they clearly stated, everything else was just rumors from mountaineers (PCI 1963, 16-18). In the aftermath of the disaster the newspaper *Il Corriere della Sera* accused the Italian Communist Party to have sent agitprops to the Vajont valley in order to politicize the “accident;” evidently this was not a political but a natural fact, which required other kinds of reasoning (Armiero 2011).

Nonetheless, the judiciary investigation showed that science and technical expertise were indeed political. While in court the elite of Italian technical universities crowded the docks, the prosecutor could find only one adjunct professor of geology willing to act as an expert for his office. As the plaintiffs’ lawyer, Sandro Canestrini (former partisan and member of the Communist Party), said in the trial, “science was humble with the powerful people, hypocritical with everyone else, ferocious and inhumane with the poor” (Canestrini 2003, 75–76). Besides the trial, which ended with a rather insignificant sentence for two engineers, the memory of Vajont stayed obliterated for decades in public discourse.⁶ Evidently it did not fit the official narratives of progress that celebrate the 1960s Italian economic miracle (Armiero 2011).

Dam Disasters as Contested Knowledge Outcomes: From Resilience to Resistance

The presented case studies come from distinct spatial and temporal contexts. However, they all speak of the intrinsic contradictions in the decision-making processes associated with dam construction. Risks tend to be presented as a matter for neutral science and impartial technical expertise, depoliticized as they are removed from the public sphere. The mobilization of knowledge that grassroots resistance produces is similarly dismissed as being too unscientific and political. We find that the core of this contradiction resides not in a real opposition of vernacular vs. scientific/modern knowledge but in the power relations underlying the deliberately risky, profit-oriented decisions which ultimately affect those in vulnerable positions when disasters take place. Resistance itself becomes the only way for those with lives and livelihoods at stake to denounce dominant discourse; a first step towards negotiating risk through knowledge claims and power struggles.

⁶ It was not a historian but a playwright and actor, Marco Paolini, who recovered the memory of the Vajont in a memorable monologue broadcast by the Italian national television in 1997.

Negotiating Risk through Knowledge Claims and Power Asymmetries

Both processes of building a dam and of opposing it are matters of power and scientific enterprise. As we have shown through the discussed three cases, the production and legitimation of (certain) scientific knowledge was central both in the conflicts over dam construction and in the disasters' aftermath. Indeed, the courts clearly reflected asymmetries of power at play. In the Vajont case the technical and scientific elites were all lined up in defense of the corporation and state authorities, leaving only foreign experts and an adjunct professor to support the prosecutor. Not even this was possible in the case of Ribadelago. The Francoist regime had purged those experts regarded as politically suspicious from the public sphere, making it impossible for the only available engineer to serve in the investigation.

50 years have passed between Ribadelago, Vajont and Lower Subansiri. Technology and security have improved yet the clash between contrasting scientific claims appears strikingly similar: local experts in the latter case were backing the arguments of the anti-dam movement, while allegedly superior national experts were mobilized by the corporation. In Italy, too, local people had resorted to the expertise of professionals to confront the technical arguments of dam builders. As other cases of environmental conflict suggest (Coburn 2005), resisting communities have not demonstrated a radical distrust in science. Instead, they have exploited the plurality of science, appealing to academic institutions and accredited experts to support their demands.

While mobilizing scientific knowledge, the communities recurred to other ways of knowing as well. Noises, cracks, linguistic insights, subtle changes in the landscape and sedimented memories were all present in both the Indian and Italian case (Armiero 2011; Baruah 2012). Again, although the repression in Spain did not allow for real resistance, we do know that rumors concerning the safety of the dam vis-à-vis poor construction and materials were circulating throughout the Tera valley (Remesal López 2009). Our cases prove the effectiveness of vernacular knowledge in the assessment of risk; yet they also prove that this kind of knowledge is easily dismissed as non-scientific and pre-modern.

Whether vernacular or scientific, the knowledge put forward by anti-dam activists was confronted with almost the same arguments. This is clear in the case of India where the corporation tried to de-legitimize the panel of local experts with a platoon of "higher" academics. The fact that vernacular knowledge tends to be regarded as inferior by modern science is widely recognized in the literature (Escobar 1998; Forsyth 2004). Our cases confirm this thesis but also show that the opposition vernacular vs. scientific/modern knowledge does not explain all the hierarchical adjustments among competing scientific claims. In India university professors were on both sides of the barricades and even in Vajont a professional geologist signed a report against the dam. Nonetheless, they too were represented as unscientific and politicized. We argue that the issue remains one of power, which reshuffles authority and truth along lines of adherence to political and economic projects.

Resistance and the Subversion of Dominant Risk Discourse

The resistance by dam-affected communities, whether manifested (Vajont, Subansiri) or repressed/implicit (Ribadelago), is telling. It dispels the myth that the disaster was merely a result of human error, instead making the case that deliberately risky, profit- and image-oriented decisions are at the core of the problem. Both in Vajont and Lower Subansiri, resistance was instrumental in denouncing the dubious construction standards of the corporations and the biased politics of the administration. The evidence from the historical cases boosts the legitimacy of resisting subjects and does away with the rhetoric often used by the state to demonize public mobilization against development projects as disorderly, dangerous and hindering development and progress (Saitta and Lazzerini 2015).

The idea of recalcitrant instead of governmentalized subjects (Latour, 1997; Peluso and Vandergeest 2010), who police public policy and engender “the political” in environmental governance and development processes (Swyngedouw 2014), is not compatible with the neoliberal project. Neoliberal agencies and institutions are instead propounding resilience as the skill people need to develop to prove their capacity to live with danger. This foregoes the very idea of the possibility of security. Resilient communities are those who are ready to adjust to, rather than resist, the shocks and suffering capitalism induces; those who by way of sacrifice can cope with the potentially drastic impacts large dams carry as companions in society’s progress; and thus, those who “forego the very power of resistance” (Evans and Reid 2014, 81).

And yet there is nothing to be gained if communities accept such risks and learn to live with them. By accepting resilience as the only way to survive, the potential of opening political space is lost, and the voices of those affected but made invisible in public discourse remain nothing but noise (Rancière 1998). The three case studies attest to the importance of the intervention of resistance movements and to the extent of human suffering, material damage and public expenditure that could be avoided by recognizing the value of vernacular local knowledge.

We therefore emphasize the continued epistemological and political importance of resistance by disaster-affected people as a field of enquiry, before and after the catastrophe, which requires alertness to the various ways in which resistance is undermined and/or made invisible. An important part of fighting resistance, both in the project planning stages and in the aftermath of the disaster is the policing of collective memory. In India the dam proponents tried to discredit people’s memories of disastrous floods and their links to dams as “myths.” In Spain and Italy it was the memory of local resistance itself and the way it was overruled by dam builders and political decision-makers, that was buried away for decades. Accordingly, we highlight that “the politics of forgetfulness... will hardly avoid the future response to natural disasters” (Steinberg 2000, 201).

In short, why should actors in Subansiri remember Ribadelago and Vajont? Vajont and Ribadelago show that what is presented as highly unlikely and unthinkable in the case of Lower

Subansiri—a dam-induced disaster—can and does, at times, happen. What is more, these historical experiences show that the disasters were not unthinkable but predicted and could have been prevented. The historical continuity in creating disasters and “sacrificing” people, which is reflected by these case studies, sounds a strong and alarming signal. However, forgetting/remembering is too simple a binary option. In some cases remembering the victims of the disaster was feasible but that memory was to be completely anesthetized. The rage about the injustice and its perpetrators had to be erased. We therefore believe it is crucial to mobilize the past—in form of both historical disasters and social resistance against them—in order to uncover and oppose the current socio-political and knowledge asymmetries, injustices and suppressions brought about in the construction of large dams.

Conclusion

In this paper we have shown that it is not only the effect of dam disasters that needs to be seen in its socio-political context, but also the decisions involved in their creation. The construction of dams was projected as an orderly and safe activity, legitimized through claims of scientific expertise in line with developmentalist ideals of growth. For such ideals to survive through time it was necessary for the Ribadelago and Vajont killings to be forgotten, rationalized and undervalued as an insignificant “price for progress” (Collins 2008). Vajont and Ribadelago were a result of post-Second World War developmentalism. Likewise, the Lower Subansiri project is a child of the developmentalist political economy of 21st-century India.

The ways in which certain development paths and growth paradigms are constructed is tightly connected to flows of capital, economic interests and profit-oriented strategizing, whether behind the closed doors of government offices or private businesses. As Storey (2008) points out, capitalizing on (or in spite of) disasters is not a new form of capitalist technique but rather part of the historical continuum of processes of accumulation through dispossession. The power imbalances that determine who pays the price remain strategically unacknowledged in the aftermath of those events. The obliteration of collective memory around disasters is a key moment in the depoliticization of risk. As the juxtaposition of our three case studies showed, one way to make risks acceptable is to make the political element in historical disasters disappear. Doing so allows the legitimization of risky decisions as necessary for social progress while delegitimizing resistance to risk as backward, irrational and against social order. Society is thereby falsely portrayed as a uniform multitude with equal interests and voices.

We argue that the real forces behind disasters need to be articulated in order to unpack the “social” in social construction. Likewise, we advocate for greater attention to the meanings carried by words. What does it do to the event and its theorization to call it “disaster” and what are possible alternatives? In Vajont it was important to speak of an accident, and the word “disaster” helped naturalize the event as such. Yet a disaster should not be equated with an accident, caused merely by imprudence. In the examined cases the neglect of safety aspects

appears to be the result of deliberate decisions by powerful people and institutions, reflecting a collectively decided or complacent disregard for the lives of common people, rather than an unfortunate tragedy.

We have therefore proposed the term ‘capital-driven destructions’ to stress that the events here narrated were not a natural phenomenon or an unforeseen accident. ‘Capital-driven destructions’ describes how disaster events are often the result of negotiations over risk acceptability among social groups with political and economic power asymmetries, where alternative perceptions and knowledge claims about risk are silenced or side-lined, and where lives and livelihoods are sacrificed for profit.

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