Shocks and Politics: Understanding Disaster Preparedness

Appendix

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Appendix to Chapter One

Table A1 – Disaster Preparedness Components[1] Performance by Indian States, with scores

State	Component Score				Average Score	Summary Performance
	C1: Political Priority	C2: Assessment & Monitoring	C4: Risk Reduction	C5: Response Preparedness		
Andhra Pradesh	**37**	**44**	**24**	**39**	**36**	**Medium**
Assam	54	50	27	46	44	Medium-High
Bihar	48	34	40	39	40	Medium-High
Chhattisgarh	28	16	12	28	21	Low
Gujarat	**53**	**48**	**45**	**54**	**50**	**High**
Haryana	40	24	28	39	33	Low-Medium
Jharkhand	20	13	9	15	14	Low
Karnataka	**34**	**40**	**21**	**36**	**33**	**Low-Medium**
Kerala	42	32	38	49	40	Medium-High
Madhya Pradesh	40	19	18	33	28	Low
Maharashtra	50	33	31	55	42	Medium-High
Odisha	**52**	**36**	**29**	**44**	**40**	**Medium-High**
Punjab	32	18	17	36	26	Low
Rajasthan	50	34	28	37	37	Medium
Tamil Nadu	39	44	47	49	45	High
Uttar Pradesh	33	18	25	33	27	Low
Uttarakhand	41	34	24	39	35	Medium
West Bengal	43	21	30	39	33	Low-Medium

[1] Due to insufficient data availability on sub-national awareness initiatives, I exclude Component 3 from the sub-national India performance measures.

Appendix to Chapter Two

In Chapter Two, I provide an overview of country performance on international standards for disaster preparedness, with examples of strong, medium, and weak performance for each of the five components. Here, I provide a similarly organized, but more detailed summary of performance across the country cases.

A2.1 Component 1 - Making Disaster Risk Reduction a (Political) Priority

In the case countries that score relatively highly on this component, we generally observe a related set of characteristics. The defining feature is the presence of a national body dedicated to disaster management that is established through formal policies, active in disaster-related planning and implementation, and that incorporates both public and private agencies into its processes. In Mozambique, for example, this body is the National Institute of Disaster Management (*Instituto Nacional de Gestao de Calamindades*, or INGC), created in 1999, which is additionally enabled by the Master Plan for Disaster Prevention and Mitigation (MPPMND), approved in 2006. "In terms of the national platform for DRR, the INGC is the clear nodal body for managing disaster preparedness and response, but this institutional clarity blurs when the question of disaster risk reduction is raised" (Bussell & Malcomb 2014: 147), an issue that arose in other country cases as well. Nonetheless, the IGCC is a clear coordinating body for all activities related to natural hazards and organizes regular meetings with representatives from all active public and private organizations for both planning and response. For the Gambia, the National Disaster Management Agency (NADMO) was established as the nodal body "to plan, coordinate the implementation of, and monitor all activities relating to disaster risk reduction programs throughout the country both at national and local levels" (Agnihotri et al. 2014: 39).

In the best cases, this national organization is linked to, and actively engages with, lower-level bodies that are also officially responsible for disaster-related planning. In India, the National Disaster Management Authority (NDMA) interacts both with other relevant national bodies, such as the National Defense Response Force (NDRF), as well as state-level disaster management authorities, who themselves interact with the relevant district-level officials (Sarma 2014). In the case of Zambia, there are regional representatives of the Disaster Mitigation and Management Unit who are active in provincial activities and then linked to a member of the district council with responsibility for this area (Baker et al. 2014: 182). A network model of coordination is used in Ethiopia, where the government organizes "clusters" of public and private actors involved in specific topic areas to deliberate monthly on potential activities. The Department of Risk Management and Food Security Sector sits atop these clusters and is responsible for putting forward new initiatives based on cluster inputs. This model helps to enable inputs from lower levels of government but does not explicitly build capacity at those levels.

This subnational coordination is less prevalent in the cases of Mozambique and Gambia. In Mozambique, for example, "Lack of capacity in the INGC at local levels also creates problems for response in the moment of disasters. Constraints on communications infrastructure for decentralized communications between provinces and the central INGC administration entail that rapid relay of information is not always possible" (Bussell & Malcomb 2014: 147-148).

Bangladesh, which is also categorized as a relatively high performer in this area, excels in a slightly different way. Here, we also see a strong presence of the National Disaster Management Council, which is empowered through legislation to oversee disaster-related activities. This body works with local government bodies to implement programs, and so has considerable integration with actors at the sub-national level. In this case, however, there is more limited coordination by the central body with non-state actors, such that "The participation of NGOs and civil society organizations in policymaking has not been institutionalized; they are only involved when decisions have already been made in order to implement them" (Shabhanaz & Bussell 2017: 21).

The middle-range scoring countries on the first component also tend to have established national platforms for allocating responsibilities related to disaster preparedness and response, but these platforms are both less likely to incorporate risk reduction and less likely to be fully implemented at all levels of government. For example, "While an institutional framework for disaster risk management does theoretically exist in Senegal, the complicated organization and undefined relationships between actors within the system render it weak" (Agnihotri et al. 2014: 32). In the Senegalese case, "The Directorate for Civil Protection (DPC) is the institutional hub of DRM," but "Despite the existence of the DPC…responsibility and liability for DRM is diffuse across several organizations and depends on the type of disaster" (Agnihotri et al. 2014: 33-34). Similarly in Pakistan, the National Disaster Management Authority (NDMA) is tasked with federal oversight of disaster-related activities, including coordination of all relevant public and private actors. But the NDMA's activities are constrained both by overlap in its responsibilities with those of the Ministry of Climate Change and with limitations on the penetration of the NDMA at sub-national levels.

In Ghana, the limitations on activities by the National Disaster Management Organization (NADMO) concern capacity more than coordination. While the organization has representatives at multiple levels across the country, "NADMO lacks the capacity, resources, and budget to implement effectively its policies at the regional and district levels," particularly with regard to disaster risk reduction (DeCuir et al. 2014: 70). The Department of Disaster Management Affairs in Malawi plays a similar role and was, at the time of this study, embarking on a substantial initiative to build capacity through technical committees across a range of natural hazard-related areas.

In the lowest scoring countries, while there may be official bodies tasked with disaster-related activities, there are often not comprehensive national platforms and de facto responsibility often falls to civil society. In Kenya, while the National Disaster Operations Center (NDOC) is responsible for coordinating disaster management, but the lack of a national disaster policy limited both the NDOC's ability to expand beyond disaster management activities and to coordinate across diverse actors (Reimer et al. 2014: 112). Thus, while civil society is active in disaster response in Kenya, these activities are often not well coordinated nor expanded to include disaster preparedness and risk reduction.

Zimbabwe offers a contrasting case, in which "Several interviewees, both local and international, noted that an adequate policy framework exists in Zimbabwe in regard to DRR and preparedness, but that this framework does not necessarily imply good implementation of these policies" (Baker et al. 2014: 172). Here, the Central Protection Unit (CPU) "is responsible for preparation and response to both natural and man-made hazards, including floods, droughts, epidemics, and industrial and traffic accidents [and] [n]early every ministry of government is connected through the CPU, which hosts a National Civil Protection Committee" (Baker et al. 2014: 174). Nonetheless, the CPU lacks autonomy over resources and decision-making, making it difficult for them to achieve disaster-related goals in practice. In an even more extreme case, Togo has a formal policy on disaster management, yet at the time of this study there

was no budget allocation for post-disaster reconstruction or for any disaster risk reduction activities, limiting the practical relevance of the policy (DeCuir et al. 2014: 75).

A2.2 Component 2 – Identifying and Monitoring Risk

The second disaster preparedness component emphasizes the ability of national governments to anticipate future hazards through active risk assessment, monitoring of potential hazards, and programs for early warning.

While there remain limitations on risk assessment, monitoring, and early warning practices of all the countries considered here, those performing well on this measure all exhibit a range of tools and techniques for collecting and managing information on natural hazards. In general, these countries have established national systems in place and, often, are partnering with international actors to manage comprehensive programs that account for a range of different hazards in their area.

Pakistan offers an example of a relatively high performing case in which the national disaster management body "plays the coordination role while provincial disaster management authorities…are effective in tracking water inflows and mobilizing resources accordingly. Technical support to these institutions is provided by other government and donor agencies" (Bussell & Fayaz 2017: 7). Similarly in Ethiopia, "All assessment activities are government-led and results from assessments must have the government's approval and sign off before they can be released" (Reimer et al. 2014: 104). Assessment activities are conducted regularly through a partnership between the government and non-governmental organizations. Hazard monitoring is also coordinated and cooperative, with a range of data collected both by national organizations and international organizations, including the Famine Early Warning System Network (FEWS-NET) (Reimer et al. 2014: 105). A similar model of coordinating monitoring was observed in Kenya (Reimer et al. 114). India has one of the best cyclone early warning systems in the world and has also developed sophisticated earthquake assessments, both of which are coordinated at the national level (Darbari interview 2014).

The most common limitations to achieving disaster preparedness goals in these cases relate to early warning systems and the willingness of the public to respond in the case of a potential threat. In Ethiopia, for example, interviewees reported that local populations often choose not to believe hazard data provided by the government (Reimer et al. 2014: 105) and in India, groups that have not previously faced a natural hazard can be more reticent about following evacuation protocols (Kumar interview 2014).

Those countries in the medium category on this component typically had some form of monitoring system in place, but this system was generally drawing on information from a smaller number of resources and was not fully implemented. We also observed lower levels of coordination between organizations that could feasibly contribute to risk assessment and monitoring activities.

Ghana offers the example of a country with an established Hydro Meteorological Agency to monitor weather trends and technical advisory committees within the national disaster management body tasked with identifying and assessing hazards. However, due to limited training of the committee members, these activities have limited relevance for predicting future hazards. In addition, a lack of coordination between various relevant ministries places limitations on the ability of the government to effectively issue early warnings in the face of an active hazard (DeCuir et al. 2014: 71). In Mozambique, we see a much more active effort to develop risk assessment tools and considerable presence of organizations

with the ability to provide quality inputs into an assessment process, but, again, “the general impression is that these efforts are not comprehensive or coordinated in a way that would allow for the types of sophisticated and predictive analyses that would offer the best preparedness for natural shocks” (Bussell & Malcomb 2014: 148).

Finally, those countries falling in the low category of performance exhibit highly limited monitoring, assessment, and warning capacities. In Togo, no multi-risk assessments had been conducted at the time of research, with the maps of disaster risk that were available focusing exclusively on floods. A Red Cross-developed early warning system exists, but is focused on local water-level indicators and not linked to any national-level communication systems. In the Gambia, the government “lacks the knowledge on risk assessment and does not focus on making early warning information available to the public at large. The country also lacks the scientific and technological capability to conduct extensive data analysis and understand emerging risks” (Agnihotri et al. 2014: 40).

A2.3 Component 3 – Developing a Culture of Safety

This is perhaps the most amorphous component to evaluate because government strategies in this area are often less likely to be outlined in clear policies with detailed implementation plans. I focus primarily on educational and awareness programs.

Those countries that are doing the best on this component tend to have developed programs to incorporate hazard and disaster related training into school curricula and community training programs. Bangladesh “has included disaster preparedness and information on early warning systems in the national curriculum of the country” for more than two decades and primary schools often serve a dual role as cyclone shelters (Shabhanaz & Bussell 2017: 23). Community organizations are also active in disaster awareness programming (Ibid.). India has similarly incorporated disaster awareness training into the curriculum of both secondary and tertiary education programs (Sarma 2014). In Zimbabwe, disaster risk reduction is a part of the secondary school curriculum. Related programs are attempting to incorporate the public in disaster preparedness through activities such as local rain-monitoring and engaging with university students on possible policy solutions for disaster-related issues. For Mozambique, local community and school committees, as well as incorporation of DRM information into school curriculum, all play a role in establishing a foundation of knowledge within communities. The emphasis on children, in particular, is expected to increase pressure on adults to adopt DRM practices and engage in disaster risk reduction within their home and local communities” (Bussell & Malcomb 2014: 149).

In a few cases, we also observe governments, often in partnership with civil society, implementing national awareness days and public training initiatives. In India, for example, there is an International Disaster Risk Reduction Day and government disaster management authorities run mock drills to increase public preparedness (Sarma 2014).

In the countries categorized as medium on this component, field research suggested that most governments were beginning to incorporate disaster-related training at the university level or that NGOs were developing training programs. But these initiatives did not extend to local levels where they would be likely to affect day-to-day concerns of the population. For example, in Ethiopia, “new DRM (disaster risk management) programs in universities and technical assistance and capacity building from NGO partners are improving local knowledge and capacity,” but at the same time accredited individuals tend to leave Ethiopia in search of better working conditions (Riemer et al. 2014: 105.). In Malawi, there was

discussion of efforts to introduce disaster-related training into the primary and secondary school curriculum, however there was little evidence of this in practice (Bussell & Malcomb 2014: 140). Here, also, universities were already "integrating programs and courses on DRM material in hopes that these higher-level students will become the next generation of policy makers and practitioners" (Ibid.).

A different model appeared in Pakistan, in which the government "regularly uses mainstream media to raise awareness about disasters like floods and heatwaves and steps that citizens can take to mitigate risks" (Bussell & Fayaz 2017: 7), but it has not incorporated related training into school curriculum. NGOs are also working to inform communities about disaster risks, but not in coordination with the government. Thus, "the government, NGOs, and media are attempting to educate citizens about safety and resilience at all levels but there is need for a comprehensive plan, especially targeted at the smaller cities and villages that are most vulnerable" (Bussell & Fayaz 2017: 8).

The lack of communications and training programs in our low scoring countries is quite striking. "There are no mechanisms in place for the dissemination of disaster-related knowledge in Togo…There is no formal education on disaster risks in the Togolese education system" (DeCuir et al. 2014: 76). Similarly in the Gambia, our work "found little evidence to explore the use of knowledge, innovation, and education to build a culture of safety and resilience in the Gambia. The field research also did not uncover adequate information on the training of local level community organizations on disaster preparedness" in the Gambia (Agnihotri et al. 2014: 41).

A2.4 Component 4 – Reducing Underlying Risk Factors

This component focuses on policies and practices to reduce the overall risk that a natural hazard will evolve into a disaster. Thus, these are efforts that go beyond preparing for what to do when a hazard occurs and instead emphasize ways to change and improve practices to limit the threats associated with hazards. In practice, these are the types of activities that were unlikely to be observed in fieldwork, as most countries are still focused on immediate response activities and, at best, efforts to prepare for hazards. Nonetheless, some concerted efforts were visible, especially in those countries categorized as relatively high on this component.

The primary way in which higher performing countries are implementing DRR-related programs is through a focus on sustainable livelihoods initiatives. Often, as in Mozambique, these initiatives are sponsored by outside organizations, such as the United Nations Development Program (UNDP). Complementary work implemented as part of the Master Plan for Prevention and Mitigation of National Disasters (MPPMND) "promotes vulnerability reduction through efforts to improve food security, including development of food and seed reserves, changes to agricultural practices such as introduction of drought-tolerant crops and newly domesticated wild crops, and introduction of new economic opportunities in areas with poor agricultural potential" (Bussell & Malcomb 2014: 150). In Malawi, "Environmental and natural resource management is a new and emerging concept at the community level where village participation and protection of nearby resources is the goal of many rural livelihood projects" (Bussell & Malcomb 2014: 141). The Indian approach utilizes a combination of programs to implement climate change-informed agricultural policies alongside social welfare initiatives that include crop insurance, emergency work programs, and housing support (Sarma 2014). These activities suggest clear attention to the ways communities can develop specialized risk reduction practices specific to their own context.

Resettlement of populations in high-risk areas is also a strategy implemented in some countries, with differing degrees of success. Post-disaster resettlement programs in Mozambique have existed since 2007 and are generally seen to have helped with reducing future risk for those involved.

In countries that fall in the medium category with regard to disaster risk reduction, there tends to be an awareness of DRR as a goal, and potentially some initial moves to incorporate this into policy, but little evidence of specific program implementation on the ground. In Ethiopia, a clear constraint was resources for DRR programing. Actors there "want to implement DRR programs to lessen the impact of drought disasters, but have difficulty procuring funding support from their donors for risk reduction activities" (Riemer et al. 2014: 106). Similarly in Kenya, "Without a disaster risk reduction policy or standard disaster recovery plan implemented by the Kenyan government, minimal national resources are allotted to DRR" (Riemer et al. 2014: 115). The Pakistan National Disaster Management Plan includes attention to DRR and how different organizations should work together towards this goal, but the funding to support implementation has been limited. In these cases, the shorter-term demand for resources to support disaster response was generally overwhelming efforts to mainstream DRR into day-to-day policies.

Where efforts have been made, such as in Senegal's effort to rehouse individuals affected by flooding in Dakar, "the focus on relocation was unsustainable and only reduced vulnerability for a small portion of the affected population" (Agnihotri et al. 2014: 35). More recent policies, which advocate for improved infrastructure over relocation, account for these past experiences, but had not been implemented at the time of this study (Ibid.).

In the remainder of the country cases, while disaster risk reduction may be on the radar of policymakers, no clear efforts have been made to pursue DRR efforts. For example, in the Gambia, "While government documents set forth mainstreaming of DRR as a priority, the country has not taken steps to translate this into practice" (Agnihotri et al. 2014: 41). Improved building practices, which can substantially reduce risks in many urban areas, were markedly absent in these cases. In Ghana, where urban flooding is a primary hazard, building codes had not been updated since the 1920s, despite efforts by international organizations to promote better, more resilient, building practices" (DeCuir et al. 2014: 71). Finally, the absence of social welfare programs to support overall resiliency was also noted in these cases. One example is Togo, where "While plans to protect the environment exist, the Togolese government lacks the necessary social mechanisms, such as insurance for crops and property, to protect citizens." (DeCuir et al. 2014: 76).

A2.5 Component 5 – Preparedness for Response to Natural Hazards

In those countries exhibiting relatively high performance on component 5, the authority(ies) for organizing and implementing disaster management protocols is(are) clear, there are funds allocated to these activities, and there are subnational programs in place related to disaster response. In Mozambique, it is the INGC that is responsible for organizing all relevant public and private actors in advance of, and during, a natural hazard, and their track record over the early 2000s was perceived to be good. "Overall, interviewees from the development community note the success to date of the INGC in managing disaster mitigation and preparedness activities. As one said, 'People feel that the INGC is there to deal with these disasters and that they are doing a reasonable job'" (Bussell & Malcomb 2014: 145). Key elements of this success include the INGC's coordination of the various state and non-state actors involved in disaster response and access to an annual, funded contingency plan that frees the government from needing to request external funds at the time of a hazard (Bussell & Malcomb 2014:

146). India uses a multi-department approach, with the NDMA responsible for national-level planning, state governments are responsible for state-specific planning and immediate response activities, and the NDRF available on an as needed basis at the time of a natural hazard.

Finally, the highest performing countries also exhibit evidence of sub-national programs to support preparedness. For Mozambique, this includes both local community disaster management committees and partnership with NGOs to provide local training and allocate emergency kits in high-risk regions (Bussell & Malcomb 2014: 146). Similar efforts appeared to be making progress in Malawi, where increased donor efforts in disaster preparedness were enabling distribution of resources at the local level (Bussell & Malcomb 2014: 141). In India, many state governments have developed their own specific disaster management plans and are allocating resources directly to preparedness activities (Sarma 2014; Padhee interview 2014).

The majority of country cases fall into the medium-level performance category on component 5. In these countries, there is an established central authority that is attempting to make progress on disaster preparedness protocols, but there is little to no evidence of these efforts moving down to the local level. There is also less evidence of dedicated funding to support preparedness efforts.

In Zambia, for example, "The national level government appears to have good mechanisms in place and is capable of responding to disasters. However, at the district level, where the national apparatus is not always as robust, it is unclear how well local communities are equipped to respond and prepare for disasters" (Baker et al. 2014: 185). Similarly, "While Senegal's national policies increasingly recognize the importance of being prepared for disasters, this recognition does not always translate into effective response, especially at the local level" (Agnihotri et al. 2014: 35). A slightly different pattern emerged in Pakistan, where responsibility for disaster response is devolved to the local level, but provincial governments retain *de facto* control due to lack of financial resources locally, thus limiting opportunities to build local capacity (Bussell & Fayaz 2017: 9). In Bangladesh, substantial progress has been made with NGO support to train local communities in preparedness, but centralized decision-making without substantial local support has limited the implementation of these programs (Shabhanaz & Bussell 2017: 25).

Those countries with the least developed disaster preparedness capacities exhibit either a lack of capacity at all levels or some central institutional capacity without resources for implementation. For Kenya, disaster preparedness depends almost entirely on external actors, even while the Kenyan military has official responsibility for response (Reimer et al. 2014: 115). Thus, "Kenya's capacity for disaster risk reduction, preparedness, and response fluctuates based on external contribution. While governing entities are aware of disaster potential – due to previous and predicted emergencies – funding preparedness efforts is not a priority" (Ibid.). In contrast within Togo, various government bodies are allocated responsibility for disaster response, such that, in theory, "The government has the capacity to command the search and rescue efforts, maintain a stock of materials necessary for rescue, and build or provide shelters in the event of a natural disaster" (DeCuir et al. 2014: 77). However, in practice, "it has no budget for DRR or relief" (Ibid.). Finally, in the Gambia, "The lack of training and capacity in the National Disaster Management Agency was a common theme…[and] Several interviewees in both local non-profit and international NGOs questioned the capacity of the National Disaster Management Agency to respond to disasters" (Agnihotri et al. 2014: 41).

Appendix to Chapter Three

In Chapter Three, I describe the ways in which political incentives are evident and related to preparedness outcomes in India and a selection of other country cases. Here, I provide the summary of outcomes in all cases. For the sake of comprehensiveness concerning other cases, this Appendix includes some repetition of material in the main volume.

A3.1 High Political Incentives for Preparedness

The countries where I expect to see the strongest political support for disaster preparedness efforts, given significant past exposure of the population and high levels of electoral competition, are Bangladesh, India, Kenya, and Pakistan.

The relationship between political incentives and preparedness efforts in Bangladesh must be considered at multiple levels of government. Within the central government, politicians appear to perceive a relationship between risk of future hazards and the need for preparedness efforts, which may in part be due to the experiences of past leaders (Hossain 2017). Governments in Bangladesh have faced popular unrest due to severe natural disasters, such as the famine of 1974 (Hossain 2017, Shabhanaz and Bussell 2017: 13). Considering both earthquakes and cyclones, increased risks due to increased frequency and climate change, respectively, have been met with new efforts to invest in preparedness.

Sub-nationally, however, the character of disaster preparedness at the local level seems to suffer from a bureaucracy-heavy implementation model. Local bureaucrats have primary responsibility for implementing preparedness programs, leaving electorally-minded local politicians with little opportunity to influence or claim credit for preparedness efforts. “This effectively disincentivizes elected local public officials from following through [on] their commitment to work with communities to tackle disasters, participate in training programs, and understand the catastrophic impact of natural disasters on the most vulnerable communities” (Shabhanaz and Bussell 2017: 30). In addition, the lack of coordination between the local bureaucrats and politicians “creates an information gap whereby the central government fails to maximize the use of local knowledge in mapping and managing disasters, and relies on institutional data rather the high-resolution, qualitative data to develop and implement their plans” (Shabhanaz and Bussell 2017: 31).

Overall, these dynamics suggest that political incentives associated with both past exposure and electoral competition can encourage disaster preparedness efforts in high-risk regions. Yet, elected politicians must be in position to play a role in designing and/or implementing these policies for these motivations to generate positive outcomes. Where politicians see no path to benefiting from preparedness, they are unlikely to exert effort and, in so doing, may diminish the effects of otherwise promising policies.

India offers an important case for understanding the effects of political incentives for disaster preparedness. Natural hazards in India are often highlighted in the media, while the relative numbers of individuals who are affected by these events differs quite dramatically across the country, suggesting that there may be varying influence of past exposure at the sub-national level. At the same time, India’s electoral democracy witnessed robust and highly competitive elections, both nationally and at the state level, in the years leading up to and including this study. Research specific to natural hazards also suggests that Indian voters will punish governments for damaging natural hazards, but less so when there is a visible response to the hazard (Cole et al. 2012). This implies that Indian politicians have an

incentive to minimize the likely effects of natural hazards to reduce the electoral risks posed by these events.

India's national government initiated two major policy reforms, the Disaster Management Act of 2005 and the National Policy on Disaster Management in 2009, during the terms of the Indian National Congress party-led United Progressive Alliance coalition government. The first policy established institutions at the central, state, and district levels to provide response to natural hazards. The second policy offers a more comprehensive framework for disaster preparedness and provides greater incorporation of local and community-based actors.

These policies can be seen as a response to sub-national demands for increased disaster preparedness support, in the wake of diverse hazard exposure across the country.[2] Rather than developing programs that rest solely within the central government, in both cases the policies provided resources to actors at the subnational level, in addition to formalizing central bodies, in a manner that appeals to regionally-based political parties in the coalition. Thus, the central government retained overall control of the policies while allowing for regionally-specific programming both to address substantial variation in hazards across the country and to enable local actors within the overall framework.

Overall, India's strategy toward disaster-related policies reflects attention to the electoral risks associated with diverse natural hazards in a competitive electoral environment. While overall past exposure varies across the country, regular experience with hazards in certain areas, and past voter response to these hazards, provides substantial incentive for the central government to provide not only a comprehensive national-level institutional structure, but also to enable state-level policies in line with the specific incentives that exist for those sub-national governments.

Kenya is a candidate for strong political support of disaster preparedness due to relatively high levels of past exposure among the population and consistently competitive democratic elections. Yet, Kenya offers evidence to suggest that these factors may not be sufficient to promote substantial direct investment in preparedness under certain circumstances.

When considering past exposure, Kenya's elected officials seem increasingly attentive to imminent risks. "[D]rought is the disaster that is largest and costliest in terms of lives lost, and in November 2011 the government of Kenya established the National Drought Management Authority and National Drought Contingency Fund" (Reimer et al. 2014: 122). Similarly, recent investments in early warning systems highlight attention to the risks of floods and other disasters. In these ways, there is the sense that "politicians are beginning to take preparedness seriously as they begin to understand the potential long-term effects on the Kenyan economy" Reimer et al. 2014: 124).

From the perspective of direct electoral incentives, however, analysts of the Kenya case note that the character of electoral democracy in the country did not necessarily lend itself to competition based on government performance. The perspective emerged from interviewees that "Voting in the rural communities is most often based on bribery or false promises rather than illustrated capacity to address crisis or national emergency" (Reimer et al. 2014: 122). Under these conditions, if politicians do not believe they will be held accountable for their investments in preparedness, then they are unlikely to invest in it.

[2] See Chakrabarti 2019: 103.

In Malawi, the character of electoral competition was in flux at the time of this study. President Mutharika was elected in 2004 and reelected in 2009. Though these were seen to be largely free and fair elections, the President repeatedly delayed local elections over the same period. By 2011, increasing public dissatisfaction due to perceptions of increasingly autocratic rule, corruption, and taxes on stable goods led generalized protests and a violent government response (Bussell and Malcomb 2014: 154). In the shadow of this shift toward authoritarianism, President Mutharika unexpectedly died from a heart attack in April 2012 and Vice President Joyce Banda was sworn in as President.

These shifting political conditions made it difficult to evaluate directly the relevance of electoral competition at the time of field research in 2011, but the general sense of competitive electoral democracy in the lead up to this period suggests an electoral incentive to invest in preparedness.

A3.2 Medium-High Political Incentives for Preparedness

The countries where I would expect to see medium to high electoral incentives to invest in disaster preparedness, due primarily to past exposure of the population to hazards, are Ethiopia, Mozambique, Zambia, and Zimbabwe.

In line with expectations, the incentives for preparedness in Ethiopia are based on significant past exposure but more limited political competition. At the time of this study, the coalition government led by the Ethiopian People's Revolutionary Democratic Front (EPRFD) was highly entrenched with little viable opposition and was placing pressure on pro-democracy advocates (Reimer et al. 2014: 117). Thus, the government faced little direct electoral pressure that might result in preparedness initiatives. Yet, as shown in Chapter Two, Ethiopia is one of the higher performing cases on disaster preparedness initiatives.

While direct electoral incentives from opposition competition are not a major factor here, the potential for general public dissatisfaction due to a failure to prepare for natural hazards is significant. The most common and substantial natural hazard in Ethiopia is drought, and the risks of food security and malnourishment associated with drought have only increased in recent years. In addition, "Poor land and environmental management and dramatic population growth in recent decades have increased food insecurity and heightened demands for food aid and emergency relief during drought crises" (Reimer et al. 2014: 97). Even without these recent changes, the fact that there are "many people living in high-risk areas makes them highly vulnerable to natural hazards regardless of whether shocks are frequent or not" (Reimer et al. 2014: 97).

This widespread exposure to past natural hazards across a significant portion of the population increases the salience of such issues within the government. As multiple interviewees noted, "Ethiopia has experienced natural hazards and disasters in the past, so the government is currently investing in preparedness" (Reimer et al. 2014: 117). That this response is due to concerns about broader perceptions among the public, rather than electoral competition, was also made clear in interviews. "The government does not rely on electoral success to stay in power, so it is unlikely that they are improving DRM for electoral benefit. But the government may be spending more on preparedness to improve their legitimacy in the eyes of their people and the international community" (Reimer et al. 2014: 117). In sum, the Ethiopian government is concerned with the public perceptions of state engagement in preparedness efforts, rather than any specific threat from other political parties, and this has implications for its support of preparedness initiatives.

Mozambique has also faced substantial hazards in the past, primarily in the form of cyclones and floods, and it is also one of the highest performers in the study group regarding overall preparedness. Cyclones and tropical storms hit Mozambique on a regular basis, but in 2000 heavy rains were followed by Cyclone Eline, which combined resulted at least 800 deaths and affected more than four million people.[3] While cyclones and related floods in subsequent years did not affect such a large portion of the population, it is reasonable to argue that the magnitude of this event had longer standing effects on policy makers than is accounted for in my measure of persons affected. If that is the case, then the more substantial efforts put forward by the Mozambique government to address tropical storm and flooding-related hazards can be accounted for by attention to the incentives driven by past exposure.

In addition, the character of electoral competition may be more vigorous than portrayed by my measures. Since the end of Mozambique's civil war and subsequent introduction of democracy in 1994, the Frente de Libertação de Moçambique (Liberation Front of Mozambique, or FRELIMO) party has held both the presidency and a majority in the National Assembly. At the same time, the opposition Resistência Nacional Moçambicana (Mozambican National Resistance, or RENAMO) has remained a viable opposition, consistently capturing seats in the Assembly. Thus, while Mozambique remains effectively a single party democracy, the persistent threat of competition from RENAMO, alongside the substantial incentives presented by past exposure, provide a compelling incentive for the government to invest in disaster preparedness.

The Zambian case also offers an example of incentives for disaster preparedness that emerge from repeated exposure to ongoing hazards, with low-lying pressure for government performance from electoral competition. Specifically, the most prominent explanation for Zambia's progress on disaster preparedness to date relates to past exposure. "In interviews with members of the Government of Zambia, it became apparent that DRM efforts grew out of the recurring need for the management of the near annual onset of disasters" (Baker et al. 2014: 196).

At the same time, disaster preparedness takes on a particular character in Zambia, in that it is often linked to the broader economic and social development agenda. After initial interest in disaster risk management in the 1990s, these activities developed over time alongside more general development activities. "In short, DRM tends to be a positive externality of many development activities in Zambia, but not necessarily the genesis of them. Regarding the DMMU [the national government's Disaster Management and Mitigation Unit] specifically, perceived risk plays a part in its decision-making processes, but does not fully explain how the DMMU allocates it resources" (Baker et al 2014: 196).

It is possible that specific political incentives due to threats from the opposition play some role in decisions about allocation, but the evidence suggests that these types of pressures result more in superficial political maneuvering rather than specific policy outcomes. This became clear in the 2011 presidential election. For example, "in March 2010, then-President Banda toured an area of the Lusaka townships set to receive some of the 11 billion Kwacha allocated to address flooding in the area. Banda used this opportunity to attack [opposition presidential candidate] Sata for his lack of a proposed response to the flooding in the region" (Baker et al. 2014: 198). Yet, broader evidence from the campaigns suggested that this was in practice only a minor issue for both parties. The "lack of attention to these issues in most speeches and press reports seems to indicate that this topic is a less pressing

[3] Bussell and Malcomb 2014: 142; https://reliefweb.int/report/mozambique/mozambique-floods-situation-report-29-feb-2000

issue than other economic threats to the country, such as foreign direct investment" (Baker et al. 2014: 198).

Thus, past and continuing exposure to natural hazards has encouraged the Zambian government to incorporate disaster-related programming into a broader development agenda that is generally supported by high-level politicians. In the face of increasing electoral competition, Zambian politicians may draw on examples of hazards to promote their broader political agenda, but this did not, at the time of this study, translate into active support for disaster-specific preparedness programs.

In Zimbabwe, we see that past exposure to natural hazards seems to be a significant factor, to the extent that the country has implemented preparedness programs. Field interviews suggested "Zimbabwe is gradually investing more in preparedness as threats from flooding and drought continue to increase, especially due to climate variability and change (Baker et al. 2014: 186). Specifically, according to one top government official, "the increased prevalence of drought in recent years is one of the main reasons the government is now taking this issue more seriously" (Baker et al. 2014: 186). In addition, "[t]he increasingly variable nature of the seasonal floods is perhaps the most important issue for understanding Zimbabwe's natural hazards. The country is currently struggling with 'climate variability' in a marked way. This inconsistency is bringing rain at irregular intervals, and in parts of the country this includes flooding (Baker et al. 2014: 167).

Another factor to consider is the degree to which many individuals in Zimbabwe are repeatedly exposed to natural hazards. "A leader of the Coping with Drought Project funded by the Environmental Management Authority (EMA) sees the problem as one of frequency rather than magnitude. He argues that the frequency of droughts does not give people a chance to fully recover before occurrence of the next one" (Baker et al. 2014: 168). Similarly, a representative of the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) in Zimbabwe noted that, "[d]ue to the compounded nature of risks in the region, any small-scale disaster is likely to cause high levels of damage—since vulnerability is so exacerbated by the recurrent nature of disasters, which give communities little to no time to recover in between shocks" (Ibid.). Thus, there appears to be a relationship between the changing nature of natural hazards, their relative frequency, and the initial efforts to prepare for hazards that have emerged in the country.

Regarding the potential importance of electoral competition for mobilizing disaster-related policies, the electoral history of the country leading up to the time of this study is of particular relevance. For three decades, the Zimbabwe African National Union – Patriotic Front (ZANU-PF), led by Robert Mugabe, ran the government with only minimal political competition. This implied that there was little direct electoral incentive for the government to invest in preparedness. In 2008, however, shortly prior to this study, the opposition Movement for Democratic Change (MDC) entered into a power sharing arrangement with the ZANU-PF, resulting from the former's improved electoral performance. This resulted in Robert Mugabe retaining the position of President, while the MDC's Morgan Tsvangirai took on the role of Prime Minister.

This demonstrable shift in the character of electoral competition suggests the possibility of increased electoral incentives for investing in disaster preparedness. However, "[t]he fact that the inclusion of the MDC, which could be interpreted as a move towards democracy in Zimbabwe, did not lead to noticeably higher preparedness spending adds evidence against this hypothesis" (Baker et al. 2014: 189). Even while Tsvangirai made promises to improve food security, this did not result in improved preparedness programming from the state (Ibid.). Interviewees also did not perceive electoral politics to be associated

with natural disaster policies in practice. This suggests that an increase in electoral competition in this case was not sufficient to demonstrably change government preparedness policies.

A3.2 Low-Medium Political Incentives for Preparedness

The third set of country cases, the Gambia, Ghana, Pakistan, and Togo, are likely to exhibit only low- to medium-levels of electoral incentives to prepare for natural hazards. This is because, while there may be a threat to ruling politicians from the opposition, minimal exposure of the population to past hazards reduces the salience of preparedness policies to voters.

The Gambia at the time of this study was a semi-autocratic regime in which the same party had held power for multiple terms. A prior history of multi-party democracy left a legacy of electoral competition, and the opposition was still relevant during this period, suggesting the potential relevance of opposition threat to government policymaking. At the same time, as discussed in Chapter Two, the Gambia also exhibits relatively low levels of disaster preparedness.

The character of natural hazards in the Gambia is such that flooding is a regular and frequent occurrence, but a relatively small proportion of the population is affected. As a result, the population in general does not seem to perceive response to these hazards as a key responsibility of the government. "In several interviews, personnel in non-governmental and donor organizations in the country noted that Gambians see flooding as a natural phenomenon and do not blame the government for its effects" (Agnihotri et al 2014: 56).

This perspective is important because it seems to extend to the electoral realm more generally. The case analysis suggests that "[i]n the Gambia's semi-autocratic society, electoral incentives are unlikely to influence disaster management policy. Interview evidence suggests instead that Gambians do not use election polls to influence policy change, nor do they link elections to their experience with natural disasters" (Agnihotri et al. 2014: 57). This disconnect may then help to explain why, even in the face of opposition threat, the ruling government has not given significant attention to reducing the risks associated with natural hazards.

Ghana offers an interesting variation in these cases where observers note a government interest in disaster preparedness alongside the public's lack of willingness to adjust to natural hazard threats. A review of the country's progress on disaster preparedness noted that the national government had "successfully strengthened human capacity through training volunteers, raising awareness of DRR in the public sphere through the media, and establishing regional DRR platforms" (DeCuir et al, 2014: 80, FN 295). At the same time, the national disaster management agency, NADMO, faced resistance to more substantial programs for individuals in high-risk areas, such that "when the government attempts to relocate populations to less vulnerable locations, they clash with government officials and often return to vulnerable areas" (DeCuir et al. 2014: 80). This suggests that while the government perceives preparedness programming to be relevant, individual citizens do not recognize sufficient risk to make significant changes to their living environments, even with government assistance.

This contrast between policy aims and public perceptions of risk is consistent with a context of substantial electoral competition, but where most citizens have not been directly affected by natural hazards. While Ghana's electoral democracy is not without issues (DeCuir et al. 2014: 79), it has experienced competitive elections for multiple decades, with regular alternation in political power at the national level. Thus, there may reasonably be an incentive for elected officials to demonstrate their

effectiveness to citizens. And in practice, observers note that "Ghanaians expect NADMO and the government to care for affected communities after a natural disaster" (DeCuir et al. 2014: 80). But these same individuals are not so directly affected by these hazards that they are willing to support government investments in preparedness, making it difficult for the state to move forward effectively with preparedness initiatives.

In Pakistan, the uneven character of electoral democracy at the national level in the period leading up to this study makes it more difficult to evaluate the role of political incentives. While Pakistan is categorized as competitive according to my measure, "The general elections in 2013 were the first time in Pakistan's history that a democratically elected government handed over control to another democratically elected government after having served its full term of five years" (Bussell and Fayaz 2017: 12). Thus, the regularity of election-based turnover was quite new at the time of this analysis.

Within this context, we see that rather than emphasizing preparedness initiatives, elected "representatives of the government appear to be drawing major political mileage from providing disaster relief" (Bussell and Fayaz 2017: 12). Indeed, "many stakeholders interviewed mentioned that distributing disaster relief packages served as opportune moments for 'photo ops' for [national level] politicians in their constituency" (Bussell and Fayaz 2017: 12). This does not mean that national politicians actively block preparedness efforts within the bureaucracy, but they are also not actively advocating for such initiatives.

At the local level, politics takes on a different dimension. The presence of local elected officials tends to differ in Pakistan depending on whether there is an elected or military government in power in the central government, with the latter preferring local governments and the former disliking them, due to a perceived threat of local politicians to central elites. During the period of this study, local governments were not in place and disaster management was decentralized to bureaucrats at the district level. In this case, however, the lack of politicians to demand resources for disaster preparedness means that these local governments are dependent on the administration at the provincial level to provide resources (Fayaz and Bussell 2017: 5). Here, bureaucrats are often politically aligned, but at the local level lack political peers, suggesting a reduced "ability of bureaucrats to act independently in the face of complex and dynamic natural hazards" (Fayaz and Bussell 2017: 5).

In Togo, the Gnassingbé family has led the government since a military coup in 1967. Though one-party elections have been held on a regular basis, no viable opposition threat emerged over these decades. When President Gnassingbé Eyadema passed away in 2005, his son, Faure Gnassingbé took power via coup, despite recent government commitments to the European Union to promote multi-party democracy (DeCuir et al, 2014: 75). While multi-party elections were held in 2007, and again in 2010, Gnassingbé retained the presidential post. As one representative of an international organization put it during an interview, "there is no real alternative to the current president, Gnassingbé Faure, because he is the only politician with the capacity and political popularity to lead the country" (As cited in DeCuir et al. 2014: 87). Thus, while there is an appearance of increased threat from the opposition in this case, the ruling party had a strong hold on the government during the time of this study.

As anticipated by the low levels of past natural hazard exposure in the country, field research did not identify strong public pressure for improved disaster preparedness. Prior to a severe flood in 2007, semi-regular occurrences of drought and flooding did not raise major concerns. "Togo had not completed any preparedness activities at the time of this flood because there was no perceived risk" (DeCuir et al. 2014:

85). Continued occurrence of floods in subsequent years had not, at the time of this study, led to any clear increase in substantial demands for preparedness.

This discussion suggests that Togo may be better coded as a case with both low past exposure and low opposition threat. "There is little electoral incentive for the government to invest in disaster preparedness in Togo" (DeCuir et al. 2014: 87). This is the case even considering increased competition at the time of this study. "Togolese people feel that [President Faure Gnassingbé] is a better leader than his father, especially because he allows multi-party democratic elections and is making an effort to improve economic and social conditions for the average citizen. Given the political climate in Togo, government spending on disaster preparation has no real impact on voting patterns" (DeCuir et al. 2014: 88).

A3.3 Low Political Incentives for Preparedness

The remaining country case—Senegal—exhibits relatively low levels of both past exposure to natural hazards and opposition threat. In these situations, I expect to see relatively little evidence of political efforts to promote disaster preparedness.

What we observe in Senegal is that political incentives tend to encourage a focus on disaster response, rather than preparedness. In those instances where the government has attempted to focus on preparedness, such as in efforts to move residents from high- to low-risk neighborhoods, individuals tend not to be ready to make substantial changes to reduce their risk profiles (Agnihotri et al. 2014: 46). On the other hand, the government seems to perceive that disaster response is a clear area of voter interest and that this can be utilized to electoral ends. "The Senegalese government appears to be responsive to the public's calls for disaster response when the failure to provide assistance affects the government's political capital" (Agnihotri et al. 2014: 46) and at the same time, "Evidence from the interviews suggests that flooding has provided an opportunity for the ruling party to diminish the popularity of opposition members in office by withholding or delaying resources after natural hazards" (Agnihotri et al. 2014: 47). This latter strategy appeared to be the case in the flood-prone city of Saint Louis, where flood assistance declined in the year after an opposition mayor took power in the city (Agnihotri et al. 2014: 45).

This evidence suggests that the preparedness efforts we observe in Senegal are only minimally driven by political incentives. To the extent that preparedness goals are aligned with strategies to support disaster response, these efforts are likely to gain political support, but broader, programmatic changes are unlikely to emerge from direct political initiative in this environment.

Table A3.1 – Odisha Districts Affected by 1999 Super Cyclone

District Name
Balasore
Bhadrak
Cuttack
Dhenkanal
Ganjam
Kendrapara
Keonjhar
Jagatsinghpur
Mayurbanj
Puri

Table A3.2 – Gujarat Districts Affected by 1998 Cyclone and 2001 Earthquake

District Name	Affected by 1998 Cyclone	Affected by 2001 Earthquake
Ahmedabad	No	Yes
Amreli	Yes	Yes
Anand	No	Yes
Banaskhanta	Yes	Yes
Bharuch	Yes	Yes
Bhavnagar	Yes	Yes
Dahdod	No	Yes
Gandhinagar	No	Yes
Jamnagar	Yes	Yes
Junagadh	Yes	Yes
Kheda	No	Yes
Kutch	Yes	Yes
Mahesana	No	Yes
Nasvari	Yes	Yes
Patan	No	Yes
Porbandar	Yes	Yes
Rajkot	Yes	Yes
Sabarkantha	No	Yes
Surat	Yes	Yes
Surendranagar	No	Yes
Vadodara	No	Yes
Valsad	Yes	Yes

Appendix to Chapter Four

Chapter Four describes the capacity of states to design and implement disaster preparedness programs, in concert with, or separate from, civil society actors. In this appendix, I summarize experiences of the full set of country cases.

A4.1 "State-Dominant" Capacity

Where the state has significant capacity relative to civil society, as is the case in India, Malawi, and Zambia, I expect to observe disaster preparedness efforts driven almost entirely by government, with minimal civil society participation and only in coordination with the state. In this setting, the government develops a clear set of institutions for developing and implementing preparedness programs and the primary actors involved in these efforts are bureaucrats at all levels of government. In the occasional instances where civil society actors play a role, it is likely to be via government mobilization programs.

In India, my capacity measures suggest a likely outsized role for the state in preparedness. In practice, there is a clearly delineated set of central government organizations with responsibility for leading disaster management and preparedness efforts, as well as delegation of responsibilities to related bodies at the sub-national level. Three departments, the National Disaster Management Authority (NDMA), National Disaster Response Force (NDRF), and National Institute for Disaster Management (NIDM) are responsible for, respectively, policy guidelines related to disaster preparedness and response, active response to natural hazards, and providing disaster training programs. In addition, nearly all finances for disaster preparedness come from the central government and are funneled to the sub-national states (Darbari interview). Within each state, parallel disaster management authorities develop specific programs for the regions under their control, such as district disaster management plans.

These disaster management and preparedness efforts by the Indian government are conducted largely without the support of, or coordination with, civil society actors. While local NGOs might participate in specific training activities or assist in response, these efforts are clearly designed and implemented by the state in line with plans and procedures set out in government policy. Thus, India offers strong support for a state-dominant model in a case where state capacity outweighs that of the non-state sector.

The second potential case for state dominance is Malawi. Overall, interviews support the general perspective that bureaucratic capacity is relatively high in Malawi and particularly with concerning levels of corruption, which are seen to be "vastly improved over many other African countries" (Bussell and Malcomb 2014: 155). This suggests that the potential for a strong state role in disaster preparedness does exist.

In practice, the development of disaster preparedness programs in Malawi has been tightly tied to the efforts of international donors and non-governmental organizations. First, regarding donors, interviews highlighted that "Much of the recent efforts by donors have been concentrated on building capacity of Malawi's government to better respond to natural disasters, climate change, and other risk factors" (Bussell and Malcomb 2014: 115). Second, while the overall presence of domestic civil society organizations is relatively low, those that exist "are becoming increasingly connected and more influential in the stakeholder process on disaster planning" (Bussell and Malcomb 2014: 156). Thus, external groups have been actively working to support the government in its disaster preparedness efforts and "most government organizations appeared to be working with select donor organizations in

an effective and cooperative manner that benefits vulnerable populations and results in increased investment" (Bussell and Malcomb 2014: 156). This offers a nice example of the ways in which effective state capacity can be used to leverage even seemingly minimal non-state capacity to improve preparedness.

Malawi thus offers an alternative view of the state-dominant model, in which government capacity is used to leverage resources outside the state. While the government is a primary actor in preparedness efforts, rather than rely only on government institutions, Malawi's bureaucracy has engaged with civil society actors to enable them to play a more prominent role in Malawian preparedness efforts than we would otherwise expect, in concert with the government.

Consider next Zambia, a country that has seen an increase in bureaucratic capacity over the last two decades, as measured by standard governance indicators (World Bank Governance Indicators). This coincides with a period of democratic consolidation, as described in the chapter on political incentives.

Within this bureaucracy, the central Disaster Management and Mitigation Unit (DMMU), housed in the office of the Vice President, is charged with coordinating all disaster risk reduction and management activities, including those of civil society. The primary forum for developing and organizing these activities is the Disaster Management Consultative Forum (DMCF), through which the DMMU can bring together domestic and international civil society actors (Baker et al. 2014: 196).

The activities of the DMMU and DMCF in Zambia are facilitated by national regulations constraining independent civil society activities. "In 2010, Zambia passed the NGO Act, which severely restricted the previous freedom of NGOs within the country by forcing all CSOs to comply with a new regime. Among the key aspects of this new legislation were the registering of all NGOs with the government and the requirement for government approval of the locations where NGOs work" Baker et al. 2014: 199). While this law may be generally seen as constraining on the activities of civil society actors, it is likely to aid coordination in the disaster preparedness space, particularly given the presence of a centralized government body and consultative forum.

In practice, NGOs in Zambia are noted for playing a role in providing information up to government on the nature of local needs related to natural hazards. This is also enabled by regulations that allow the DMMU to pay NGOs management fees to implement government programs. As such, "CSOs are sensors in this setting reporting on areas that they assess to be vulnerable. In cases where they are the appropriate entity to respond or add capacity to an area, they can and do receive government aid to carry out their mission" (Baker et al. 2014: 200). Overall, these patterns of disaster preparedness activities in Zambia suggest a government-dominated model, consistent with my argument.

A4.2 "State-Led"

Two country cases exhibit high levels of both state and civil society capacity: Ghana and Senegal. I describe here the approaches taken in each country under the expectation that we should be likely to observe a State-Led approach in these cases.

Administratively, Ghana's national disasters-related body, NADMO, is primarily responsible for coordinating both state and non-governmental actors in preparedness and response efforts, as we might expect in a coordinated model. However, the effectiveness of NADMO is limited by its institutional development and relative place in the government hierarchy. For example, "NADMO was unable to

forecast and provide early warnings to affected areas so that stakeholders could prepare and respond to the emergency early. In addition, NADMO lacks an emergency operations center where all NGOs and stakeholders can meet and receive updated and accurate disaster assessments" (De Cuir et al. 2014: 70). In addition, government policies on disaster preparedness and disaster risk reduction have given a primary planning role to district authorities, rather than NADMO. "The district assemblies are the ultimate planning authorities and NADMO is not party to their deliberations or plans. Thus, the agency lacks the authority to force these assemblies to implement their DRR plans" (DeCuir et al 2014: 80-81).

Given these constraints, NADMO officials have leveraged their coordination role to push preparedness efforts. As one interviewee noted, "local civil society actors, in coordination with NADMO, have organized themselves into Disaster Volunteer Groups that focus on DRR and preparedness efforts through sustainable farming and agricultural practices to combat potential natural disasters such as flooding. In addition, these groups are trained by NADMO officials on preparedness measures to reduce the effects felt when natural disasters occur" (DeCuir et al. 2014: 82). NADMO officials are also known to participate in training activities offered within civil society (Ibid.).

In addition, civil society actors are pushing forward preparedness on their own. Smaller NGOs have become particularly active in this regard. "Rural Integrated Relief Services, for example, records natural disaster shocks, develops assessments of these shocks, educates individuals on issues concerning climate change, and offers training programs for disaster management. ABANTU for Development, another local NGO, raises awareness of gender issues in complex emergencies by bringing women into the mainstream of disaster prevention in Ghana" (DeCuir et al. 2014: 83). Large organizations are playing their own role, with "UNDP, United Nations Children's Fund (UNICEF), and other organizations…pushing the preparedness agenda and helping NADMO and other government institutions to focus their efforts on these types of activities" (DeCuir et al. 2014: 81).

Ghana thus offers a model of coordination in a country where national government policy has not effectively supported a fully state-led model. Decentralization of responsibilities to the district level makes it more difficult for a national-level body to coordinate state activities. Instead, NADMO relies on its ability to coordinate civil society actors to push forward the disaster preparedness agenda, while also allowing for outside efforts by other civil society actors.

Disaster preparedness in Senegal during the period of study was primarily led by the Directorate for Civil Protection (DCP), which acted as the implementing body for the Hyogo Framework and was in charge of coordinating other government agencies and non-governmental actors. However, responsibility for different aspects of natural hazard-related issues was at the same time allocated to a wide range of departments within the government, such as the Ministry of the Environment and the Ministry of Agriculture. As a result, "[w]hile the diffusion of responsibility among these three ministries allows for a higher degree of flexibility and specialization in dealing with each disaster type, it also complicates coordination efforts" (Agnihotri et al. 34). The lack of government coordination was magnified at the local level, where local bodies were increasingly held responsible for both preparedness programs and response. Yet, "there are numerous administrative jurisdictions existing at the sub-national level and responsibilities are not well defined across actors" (Ibid.). In practice, political actors had failed to implement an institutional model that effectively leveraged Senegal's government capacity to promote preparedness effectively.

Within civil society, "local and international NGOs have consistently provided independent disaster response" (Agnihotri 2014: 49). Multiple interviewees noted that the majority of work happening in

flood-prone areas is being done by NGOs (Ibid.). Similarly, "A senior official in Senegal's disaster management agency also noted that international NGOs regularly enter communities without the support or knowledge of the government to provide relief services (Ibid.). This suggests that while civil society actors may not be engaged directly in state-sponsored activities, they are active in areas where the state may itself be failing to invest in preparedness.

In this way, Senegal offers a primary example of divergent outcomes in a country characterized by latent capacity among both state and civil society actors. The primary explanation for this divergence is political constraints on bureaucrats, which makes it difficult for these actors both to implement programs and coordinate with actors outside the state.

A4.3 "Society-Reliant"

In the society-reliant capacity model, the state has less bureaucratic capacity to support disaster preparedness programs than exists with actors in civil society. The countries falling into this category are the Gambia, Kenya, Mozambique, Togo, and Zimbabwe. In these countries, I expect to observe the style of public programs that should be familiar to analysts of state-society relations in countries such as Kenya. In these contexts, a lack of internal state bureaucratic capacity leads the government to rely on non-state actors for the provision of even very basic public services (Brass 2012). This model may take multiple forms, depending on historical dynamics affecting the character of government institutions and the nature of civil society's strengths and weaknesses. Nonetheless, the anticipated result is a distribution of preparedness efforts that lies primarily within civil society organizations, not within the state.

In Kenya, a long history of politicization in the bureaucracy and international aid funding that has subsequently been routed around the state to local civil society organizations, has resulted in disproportionate capacity within the private sector. In general, "many powerful donors, particularly USAID, have a policy of investing heavily in local organizations, and they prioritize a decentralized approach to development" (Reimer et al. 2014: 125).

This has resulted in three primary institutional outcomes regarding disaster preparedness in Kenya. First, there does exist a framework for disaster preparedness within the central government, in the form of a Drought Management Authority (DMA) and a National Drought Contingency Fund, both initiated in 2011 and resulting "precisely from lobbying and pressure by civil society. Stakeholders interviewed credited local, national, and international organizations as a large part of the reason behind the drought policy success" (Reimer et al. 2014: 125).

Second, there is capacity for preparedness and response within civil society. For example, during the flash flood on April 22, 2012, "Several helicopters came to airlift bodies, counselors were on the scene for psychosocial support and personnel were on hand to process search and rescue for other missing persons. All of this support was from the Kenya Red Cross Society, an NGO" (Reimer et al. 2014: 126). However, there are limits to this capacity. Multiple interviewees noted the risks associated with depending on bilateral and multilateral aid flows—which are frequently inconsistent in their supply—to support ongoing disaster preparedness efforts (Reimer et al 2014: 127). There is no guarantee that these efforts can persist without a more consistent financial infrastructure.

And third, the DMA and civil society actors had not, at the time of this study, come together in a manner that enabled coordinated capacity building and a leveraging of existing resources within civil society to

build a stronger government skill base regarding natural hazards. “A criticism many government officials had of civil society is that while their projects often fund technical capacity in small settings at the community level, they typically do not build the technical capacity of central government services [which are] in dire need of funding” (Reimer et al. 2014: 126). At the same time, the government seemed also to be failing itself, with the Kenyan National Disaster Operations Centre (NDOC)—the coordinating body for the central government’s military, police, and fire brigade disaster response—occupying a small, technologically ill-equipped office “located in a multi-story downtown building that would be ill-prepared to weather an urban disaster that might strike Nairobi. If a truly emergent disaster that threatened the lives of countless Kenyans occurred within the vicinity of Nairobi, the government of Kenya would effectively be unable to respond or coordinate its own assets” (Reimer et al. 2014: 126).

Overall in Kenya, civil society actors have played a dominant role in pushing forward disaster preparedness efforts. Yet, these activities lack sufficient overall coordination, either from civil society itself or from the state.

The Gambia presents an interesting case. While overall state capacity is judged to be low, the National Disaster Management Agency, overseen by the Vice President, is viewed positively, with “the effectiveness of NDMA as a coordinator and planner...highlighted in all the interviews conducted” for this research (Agnihotri et al. 2014: 58). At the same time, “conversations with NGOs suggest that the NDMA sees them as a competitive influence for directing resources and public opinion” (Agnihotri et al. 2014: 59). This results in an environment in which the state agency exerts oversight on civil society organizations and limits these organizations to a largely technical role (Ibid.).

The implication of this approach by the government, when there is more generally limited government capacity on the ground, is that it is difficult to implement broad preparedness programs. The government itself does not have the resources to do this and “the strong role of the NDMA as an independent actor limits the ability of the NGOs and IOs to engage in their own disaster preparedness activities” (Agnihotri et al. 2014: 60). Thus, we observe the potential for civil society to play a primary role in preparedness, but one that is stymied by the government.

In Mozambique, the INGC plays the role of convener, having set up the CTGC [the disaster management technical council], which serves to guide all disaster preparedness and management activities. As a part of this, NGOs are incorporated into disaster management activities in multiple ways. “One NGO representative noted that, ‘we have representatives from the disaster management department who go to the meetings that happen with the INGC, especially in times like now [during cyclone season] when they are worried about potential disasters and there are daily meetings, and they come back and then we have a meeting to decide on what to do...We work closely with the government in general’” (Bussell and Malcomb 2014: 162). As a result, the general sense among NGO representatives interviewed for this project was that disaster preparedness and response were both much better than they had been before the development of the INGC. As this NGO representative noted, “NGOs have to be a part of the CTGC because the INGC is the coordinating body for all of the things that go on related to disasters and they need to know who is putting supplies where. They [the government] know all of the organizations acting in this area. In disasters, organizations can’t act on their own. This makes the response much stronger. It is not like 2000 anymore, when it was really just chaos” (Bussell and Malcomb 2014: 162).

When there are specific preparedness programs that require activities on the ground in the periods between cyclone seasons, the government also leads efforts to select and coordinate civil society actors to achieve these goals. This strategy serves to alleviate the capacity and human resources constraints of

the government itself, by substituting NGO representatives for government employees in the field. "When an NGO starts working in Mozambique, they go to the government and tell them that they want to do work here and then the government helps allocate the NGO to areas of need. This is done through the Ministry of Foreign Affairs—they check with other ministries and look at the needs of the country and the skills of the NGO and then tell them where they can be of most use," noted the director of an international NGO operating in Mozambique (Bussell and Malcomb 2014: 162). What this looks like in practice, for example, is evident in the implementation of village disaster preparedness committees, which are used to train and mobilize leaders in rural communities, "NGOs have been assigned particular areas of the country where they are in charge of working with local actors to train and implement committees. This is in part because neither the government nor any individual NGO has sufficient capacity to work in all regions of the country. But these organizations are also able to draw on their unique skills to facilitate development in capacity-constrained local environments" (Bussell and Malcomb 2014: 162).

Thus, this state-society coordinated model for disaster preparedness allows the Mozambique government to take advantage of civil society where it exists, particularly in areas where the state's own capacities may be lacking. While bureaucrats within the INGC have reasonable freedom from political involvement in their daily activities, "the lack of trained bureaucrats in local areas does seem to limit preparedness and response in ways not directly related to politics. One observer noted that, 'There are local level capacity gaps, but these are capacity gaps, not gaps in political will. DRR is still a relatively new field and there is not a lot of technical expertise available in DRR and DM'" (Bussell & Malcomb 2014: 161).

Togo offers a different view, as there was little evidence of a role for government in disaster preparedness. The lack of government preparedness activity is reflected in the fact that "there is no national budget for risk reduction, and no funds allocated for investment in risk reduction measures such as improvements to transportation, agriculture, or infrastructure" (DeCuir et al. 2014: 75). To the extent that the government engages in disaster-related activities—and this is primarily in response, not preparedness—these roles are highly centralized. "In particular, one interviewee stated that all response to disasters is directed from Lomé, where the response teams and organizations are based" (DeCuir et al. 2014: 75).

In such a case, we might expect that civil society would fill the gaps left by the state in preparedness efforts. The Togolese government does look to civil society for the implementation of preparedness programs, and the national disaster platform group, which meets regularly to discuss risk reduction strategies, includes "15 civil society groups, 30 specialized associations, and 7 women's rights advocacy organizations" (DeCuir et al. 2014: 76). However, in practice, there appears to be relatively little actual activity on the ground by local civil society actors. "Only two main local NGOs seem to be active in DRR, preparedness, and response: Amitié et Action Développement and the Association Togolaise pour Bien-Être Familiale" (DeCuir et al. 2014: 90). Even as interviewees at local NGOs noted that the sector is well-coordinated, the lack of significant activities related to natural hazards impedes substantial social sector-led disaster preparedness.

Thus, in the Togolese case, we see more of what we might expect from a country with low capacity on both sides of the state. What activity in preparedness exists does seem to be led by civil society, but there was so little happening at the time of this study that it is difficult to make a strong argument in this case.

Within Zimbabwe, the government's role in preparedness at the time of this study was hampered due to a power sharing agreement in which government ministries were divided across ministers from opposing parties, the ZANU-PF and the MDC. This made coordination of disaster-related efforts difficult as related issues were allocated across multiple agencies. This is the case "even where Zimbabwe's bureaucrats and politicians, in general under its emergency management framework, are technically able to see ways to improve DRR" (Baker et al. 2014: 190). Local government efforts to engage in preparedness were also hampered by blanket regulations that did not allow for localized approaches (Baker et al. 2014: 190).

In the Zimbabwean political and social context, however, strong civil society actors were also constrained in their efforts. Generally speaking, civil society actors in Zimbabwe must act in accordance with government policies, such that "as long as CSO spending aligns with government policy in DRR and is apolitical then additional spending is welcomed" (Baker at al. 2014: 191). This suggests that civil society actors have little room to act independently in the disaster space.

In addition to legal constraints, civil society actors face considerable other demands on resources in Zimbabwe. This is particularly evident with international NGOs, who might have more leverage to engage in their own preparedness activities, but for which observers noted that "most IOs and INGOs are focused on more pressing development needs such as alleviating food insecurity" (Baker at al. 2014: 192).

Overall, in Zimbabwe the state plays minimal role in preparedness efforts, as expected, but civil society's role is also limited due both to institutional constraints from the government and significant demands from other sectors for their resources.

A4.4 "Uncoordinated"

In the final set of cases, Bangladesh, Ethiopia, and Pakistan, neither the government nor civil society has high levels of latent capacity upon which to draw for developing a disaster preparedness program. This is not to say that there will be no preparedness programs present, but where they do exist, I expect them again to reflect these similar (low) levels of capacity.

In Ethiopia, a state disaster management agency—the Disaster Risk Management and Food Security Sector (DRMFSS)—governs and directs all activities, of both government and civil society actors, across the country. This model may often involve collaboration in the planning of disaster preparedness programs, but the final say on what programs are implemented, how, and by whom, remains with the state, not with civil society actors.

While overall state capacity falls in the "lower" category, Ethiopia has a relatively higher score on "bureaucratic and administrative quality" within the capacity index and a neutral score on "rigorous and impartial public administration." In the context of disaster preparedness, bureaucrats are seen to be relatively insulated from political dynamics, which "allows them to continue to implement their DRM [disaster reduction management] programs without outside interference" (Reimer et al. 2014: 119). This bureaucratic autonomy also extends sub-nationally, and "allows local officials, who have a more first-hand knowledge of and exposure to risks, to be more in control of budgets and projects," while at the same time maintaining cross-regional coordination in disaster-related activities (Ibid.).

For civil society, however, there is little to no autonomy from the actions of the state. This means that "CSOs are not allowed to engage in their own preparedness activities. The CSOs are highly mobilized and

integrated with the GOE and donors, but all preparedness activities are directed by the GOE. CSOs are not allowed to undertake their own programs. Multiple interviewees confirmed this information" (Reimer et al. 2014: 119). This also means that non-state actors are offering little leadership in the disaster space, even as they do pressure the state to invest more in preparedness activities (Ibid.) Instead, government organizations now lead all disaster-related activities, "managing the high levels of activity and coordination between the organizations" (Reimer et al. 2014: 120).

Interestingly, it seems that the leadership role for the state in Ethiopia during this study period builds on a long and evolving history of relationships with both domestic and international organizations that have played a role in disaster preparedness and, especially, disaster response. "Ethiopia has had considerable exposure to IOs and INGOs that promote preparedness, and that has helped the country invest more in preparedness policies and programs. After years of external actors promoting response and preparedness, the GOE has now taken the lead, managing the high levels of activity and coordination between the organizations" (Reimer et al. 2014: 120).

The dynamics of absence take on a different character in Bangladesh and Pakistan. This is perhaps best exemplified by Bangladesh. Here, there is a centralized Ministry of Disaster Management and Relief that "also organizes the National Disaster Management Council that has representatives from the various institutions at national and local levels to tackle natural disasters in the country" (Shabhanaz and Bussell 2014: 16). In addition, "The National Disaster Management Regulatory Framework (NDMRF) provides a set of guidelines for disaster preparedness, risk reduction, and response. The framework was developed with the intent to mainstream risk reduction efforts within government, NGO, and private sector activities (Shabhanaz and Bussell 2017: 17).

However, this strategy does not effectively "account for government bodies outside of the traditional hierarchy of institutions. For example, almost all cyclone shelters in Bangladesh are primary schools built on raised ground, [which] effectively makes the shelters as much a budgetary concern for Ministry of Education as they are for Ministry of Disaster Management and Relief" (Shabhanaz and Bussell 2017: 19). This has led to significant problems in disaster response, let alone preparedness, such as "when 48,000 families were displaced after Cyclone Aila, and spent over 14 months on the streets. This was because of lag time between constructing new houses, roads, and schools as each project falls under a different ministry in the government" (Shabhanaz and Bussell 2017: 20).

This lack of coordination extends to the government's relationship with civil society actors. "In principle, the government, supported by the World Bank and Asian Development Bank, leads infrastructural projects, the UN leads development initiatives, and local NGOs take charge of voluntary efforts. In reality, though, the UN, given its history in assisting Bangladesh immediately after independence, plays an authoritative role in shaping disaster management polices with the central government. The government in turn, and as a result of being heavily politicized, fails to engage local elected public officials, NGOs, and civil society organizations in the process. The participation of NGOs and civil society organizations in policymaking has not been institutionalized" (Shabhanaz & Bussell 2017: 20).

Yet, the "government relies on local NGOs, civil society organizations, and international agencies in building capacity of communities and providing emergency relief" (Shabhanaz & Bussell 2017: 25), in line with more general development practices in the country (Hossain 2017). This may take the form of relatively small NGOs—such as Muslim Aid—who "build capacity at the lowest level – in villages and urban wards – on cyclone and flood preparedness using locally sourced and trained volunteers" (Ibid.). In contrast, substantially larger NGOs—such as BRAC—"provide disaster preparedness training through

their numerous education programs and village-level meetings" (Ibid.) In some cases, the government—via the Department of Disaster Management—has been able to partner with these larger organizations. This has resulted in "the development and implementation of several training modules to educate and prepare local communities against floods, cyclones and major natural disasters" (Ibid.) Nonetheless, these efforts can only go so far given the limited resources available to state disaster staff at the local level.

These dynamics suggest that a lack of coordinating capacity within the government has led Bangladesh to mobilize and organize its disaster-related activities insufficiently. Civil society actors themselves have mobilized related to natural disasters, but often after the fact, as a part of response efforts and in efforts to pressure the government to improve its disaster preparedness efforts (Shabhanaz and Bussell 2017: 32).

In Pakistan, the complicated back and forth of central government control by the military and elected governments has implied an inconsistent and contradictory set of approaches to disaster preparedness initiatives, as they sit within the overall government structure. This is particularly due to differing perspectives across military and elected leaders about the role for local elected bodies and decentralization of disaster preparedness activities.

Overall, military and elected governments are perceived to differ in their relationships to actors at the local level. "Military governments have always preferred having local governments in place because it diminishes the power base of the political parties" (Bussell & Fayaz 2017:5). In contrast, "Political parties in power in the federal government or provincial government…have always found local governments to be a threat to their power, preferring top-down management through civil servants at the local level" (Ibid.). The overall consequences of these preferences are two-fold: on the one hand, local civil servants are often not given the resources they need to fulfill the requirements of their positions. On the other hand, the lack of consistent local elections, which have been limited under military regimes, implies a lack of opportunity for developing experienced political leaders who can progress to higher levels of elected office. Thus, local civil servants are constrained and higher-level politicians often have limited understanding of these constraints.

In the context of disaster preparedness, this dynamic has multiple problematic implications. In 2010, the 18th amendment to the Pakistan Constitution was passed, which devolved many functions, including disaster management and risk reduction, to the district level. The potential benefits of this decentralization process have been evidenced on occasion, such as during the 2015 heat wave in Karachi, in which "city officials were more effective in their response compared to the provincial government of Sindh" (Bussell & Fayaz 2017: 13). But this example is an exception to the rule. "In most cases, cities do not have the requisite budget required to respond to disasters on their own, let alone invest in disaster risk reduction initiatives" (Ibid.).

One explanation for the lack of resources as the local level is the lack of political presence. "[I]n the absence of political governments at the local level, district administrations continue to lack resources and remain dependent on the provincial governments for resources and direction" (Bussell & Fayaz 2017: 5). The lack of local political support is magnified by the absence of political actors at higher levels who have an understanding of practical realities on the ground. Thus, local bureaucrats are authorized to act on disaster preparedness initiatives, but they often lack the resources to do so in practice.

Insubstantial state action on preparedness activities is often matched by a similar lack of attention from local civil society actors. While there are domestic and international non-governmental actors active in the natural disaster space, they focus primarily on response efforts (Bussell & Fayaz 2017: 14). Even where organizations do focus on preparedness, “the efforts are not coordinated and amplified” (Ibid.). This lack of activity and coordination also means that local civil society offers little voice to possible demands for increased preparedness by the state, despite frequently playing this role in other issue areas in Pakistan (Ibid.).