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Disaster Management in India: Analysis of Factors Impacting Capacity Building

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DISASTER MANAGEMENT IN INDIA: ANALYSIS OF FACTORS IMPACTING CAPACITY BUILDING

by

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Under the Direction of Dr. William L. Waugh, Jr.

ABSTRACT

Governments are responsible for administrative arrangements dealing with disasters. Effective policies play a vital role in mitigating the impact of disasters and reducing likely losses of life and property. Yet, it had been noted that such losses were increasing, raising questions about efficacy of government policies and the factors that made them effective.

This study adopted a comparative method, responding to a long-standing demand of disaster research, for examining the record in India. There were noticeable differences among its states, with some having undertaken comprehensive reform in an all-hazards approach, while others continued with old policies. This research studied four states with the objective of identifying variables that were critical in undertaking policy reform for building capacities.

The roles of economic resources, democratically decentralized institutions, political party systems and focusing events were examined. Findings revealed that these factors had varying

impact on state capabilities. Economic resources were an inevitable part of disaster management, but did not necessarily translate into policy reform. Panchayati Raj Institutions, which were democratically decentralized bodies, displayed tremendous potential. However, their role was limited mostly to the response phase, with states severely circumscribing their involvement.

The nature of political party systems was able to explain policy reform to an extent. Cohesive systems in Gujarat, Tamil Nadu and Orissa correlated with administrative capacities, unlike in fragmented Bihar. However, anti-incumbency sentiments and strong community mobilization impacted contestation more than electoral salience of public goods. The most nuanced and significant explanation was provided by experience of focusing events. States that suffered major disasters revealed unmistakable evidence of double-loop learning, leading to comprehensive policy reform and capacity building.

This research provides empirical support to theory about the role of focusing events and organizational learning in policy reform. Methodologically, it underscores the importance of the comparative approach, and its successful application in a federal framework. The significance of this research is most for policy makers and practitioners, as it serves to alert them on the need for reform without waiting for the next big disaster to catch them unprepared.

INDEX WORDS: Public administration, Disaster management, Indian federal context, Capacity building, Economic resources, Panchayati Raj Institutions, Party systems, Focusing events, Inter-province comparison, Policy reform

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Dedicated To

The Divine Mother and Sai Baba

Who have guided my life and destiny

And

To my parents

E.L. Narasimha Rao and Lalitha Devi

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Seven years ago if I had talked about getting a doctorate, you could have accused me of wishful thinking. Yet, the support and assistance of family and friends, as well as the guiding role of my teachers made it happen. Hence, with no thought for convention, and without worrying about errors of tense, voice, logic and the bounds of scholarly appropriateness, I proceed to acknowledge my dues to all those who made this work possible.

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Chapter 1. Introduction

Organizing administrative machinery, dealing with disasters, is a vital responsibility of governance.[1] Strong and effective emergency management has been a felt need in all corners of the world.[2] Responsiveness of governance becomes evident in the manner in which it addresses the crucial task of ameliorating suffering and reducing losses. Public servants have a responsibility for formulating policies and building capacities for dealing with such situations.[3] The public perceives governments to have learnt from experience, theirs and others. Yet, a common complaint has been that government agencies are unprepared or ill prepared for the next big crisis and are unable to prevent large-scale loss of life and damage to property.

It is, therefore, important to study disaster management to locate factors that make a critical difference in effective policy outcomes. This research undertook an examination of the Indian context and took up a comparison of states on select indicators of the policy issue. It was a methodologically promising exercise for concerns about standards, and evaluations for governance outcomes. In the absence of national benchmarks, due to the subjective nature of the enterprise it was difficult to say when outcomes were effective. Instead, this research found it more fruitful and reliable to compare across selected states, and find out why policy reform was better in some, and not in others. In the process, it also addressed normative concerns for delivery of public goods.

The methodological framework of this inquiry, responded to a long-standing demand for comparative analyses in disaster research. At the same time, it also noted the difficulties of cross-national research in the shape of confounding factors. Differences in disaster experiences,

[1] Christoplos, Mitchell and Liljelund (2001); Waugh (2000)
[2] Rosenthal (1988); Sakamura 2001. They discussed vulnerabilities and disaster records of Netherlands and Japan.
[3] Waugh (1999)

institutional arrangements, political systems, cultural values and numerous other idiosyncratic factors, posed serious problems, in a cross-national framework, that could hamper an in-depth analysis. Hence, it adopted the method of comparing across different provinces, emulating a trend that was becoming increasingly popular in India studies. A common legal, institutional and, to a great extent, cultural context provided control mechanisms in examining why some states exhibited better scores on governance measures in disaster management.

The dependent variable was comprehensive policy reform for building disaster capabilities. It was operationalized by adopting measures of a Government of India-United Nations Development Program (GOI-UNDP) joint program, which began in 2002, and which was aimed at disaster risk reduction through capacity building. It provided a good basis for comparison among the selected states. The other part of the inquiry was a determination of the factors that were responsible for a systematic and significant variation in reform and capacities among the states. Disaster research in general, and in its Indian context in particular, had ample scope for exploring the theoretical and normative concerns of public administration. Moreover, there were not many empirical studies that systematically identified causal factors. Hence, this research looked at socio-economic factors that were capable of having a systematic and significant impact on the dependent variable. The independent variables were drawn from extant literature, with regard for concerns of face validity. Consequently, the research examined economic development, democratic decentralized institutions, cohesiveness of the political party system, and the factor of organizational learning due to experience of "focusing events".[4]

Significant findings emerged from empirical research that provided crucial information about the impact of the explanatory factors. Higher levels of economic development indicated

[4] Kingdon (1984), 100. An illustrative list of focusing events included crises, disasters, personal experiences, and symbolic events.

greater resources that could possibly be utilized to build capacities and strengthen administrative machinery. However, while resources were seen as necessary conditions, they lacked explanatory power for critical variations. Next, democratic decentralized governance mechanisms displayed great potential because of the critical role of first responders. Yet, with the extent of decentralization being limited, and their role in disaster management being severely circumscribed, local bodies were not found to be responsible for increased capacity building.

The third variable was the nature of political party systems in democratic polities, which created electoral salience of policy issues, and also determined the prospects for reform. Field research was able to provide a significant correlation with delivery of public goods. Nevertheless, electoral dynamics of a two party system in Tamil Nadu, and greater community mobilization in Gujarat limited their impact to a significant extent. The last factor that was examined was the role of focusing events, and their consequences for organizational learning and policy reform. It was found that states that suffered major disasters were more likely to undertake policy reform in building capacities for tackling them. Despite conceptual concerns, it proved consistent in explaining the developments in different states along with credible answers for variation among them. It also provided a framework for a nuanced understanding in an important policy domain.

The first part of this chapter highlights the reasons to focus on this important domain of public policy. The second section examines the Indian context, with special reference to the policy reforms that had been taken up. The next section surveys the extant literature, in disaster research in general and about Indian emergency management in particular. It spells out the plan of this research in the fourth part before concluding with the significance of its contributions.

I. The Domain of Disaster Management

Emergency management[5] has been an important item on the agenda of governance, even though it was not known for having a specific constituency or lobby to support its cause at all times.[6] Its importance was underscored every time there was a major natural or manmade disaster. For example, the month of May 2008 saw two major events. There was a deadly cyclone that devastated Myanmar, killing tens of thousands and severely affected millions.[7] Less than a fortnight later, People's Republic of China suffered an earthquake measuring 7.9 on the Richter scale that resulted in more than 50,000 deaths, and suffering for millions.[8] Both these incidents highlighted the myriad deficiencies of public administration.[9] It had been no different in other places. If it was wildfires in Greece, it could be mud slides in Philippines, nuclear accidents in Chernobyl or Three Mile Island, or potential pandemics like SARS. And terrorist incidents in Mumbai, New York, London, Madrid, and Beslan or in the Middle East pointed to a different type of hazard that had gained prominence.[10] All these served to direct attention of the public and policy makers towards the policy domain of disaster management.

Disasters had serious consequences for states and their economies. Despite developments in science and technology, the costs of disasters had been increasing. Interestingly, growing losses strengthened the arguments of scholars who stressed increasing vulnerability due to socio-

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[5] Official and scholarly literature in India predominantly used the term 'disaster management'. This research used the terms 'emergency management' and 'disaster management' interchangeably.
[6] NAPA (1993)
[7] UN News Centre http://www.un.org/apps/news/story.asp?NewsID=26634&Cr=myanmar&Cr1=&Kw1=Myanmar&Kw2=&Kw3= retrieved 15 May 2008
[8] Government of China http://english.gov.cn/2008-05/14/content_973846.htm retrieved 15 May 2008
[9] A sample of the literature can be seen in reports of BBC and New York Times that catalogued a long and lengthy list of shortcomings at http://news.bbc.co.uk/2/hi/asia-pacific/7430960.stm , http://news.bbc.co.uk/2/hi/asia-pacific/7436647.stm, http://www.nytimes.com/2008/05/28/world/asia/28quake.html?_r=1&oref=slogin and http://www.nytimes.com/2008/06/04/world/asia/04china.html retrieved 8 June 2008.
[10] Waugh (2000)

economic development.[11] In the ten years between 1997 and 2006, the International Federation of Red Cross and Red Crescent Societies noted that 1.209 million people lost their lives and 2.679 billion persons were affected.[12] Losses caused by disasters increased from US $ 75.5 billions in the 1960s to US $659.9 billions in the 1990s.[13]

Disasters also extracted a very high price in social, psychological and economic terms. Their impact was felt in trails of destruction, families torn apart, children orphaned, livelihoods destroyed, and communities traumatized. They had a long-term impact on the social health of families and, in turn, the community.[14] At the individual and family levels, loss of livelihood or a diminished earning capacity had an equally damaging effect.[15] It was held that damages to domestic and business constructions imposed a burden that was never recovered through government compensation packages or insurance payouts.[16] For businesses, losses were more than immediate calculations of damages, since profitability depended on intangible factors. The total impact was likely to be more, since an accurate estimation was difficult due to serious methodological difficulties in calculating primary and secondary losses.[17]

The opportunity cost of relief and reconstruction expenditures was also a reason for its enormous salience.[18] Losses of infrastructure and public assets imposed a heavy financial burden on government resources. At the same time, the uncertainty associated with disasters made it more difficult to make appropriate budgetary allocations.[19] First, it cost resources to restore normalcy and to invest in mitigation programs. Second, from an opportunity cost perspective,

[11] Mileti (1999); Mitchell (1999)
[12] International Federation of Red Cross Societies and Red Crescent Societies (2007)
[13] UNDP (2004)
[14] Kendra and Wachtendorf (2006) noted that innovative plans were used in Tangshan, China to deal with physical and social reconstruction.
[15] UNDP (2004)
[16] Kunreuther and Kleffner (1992)
[17] Bourque et al (2006)
[18] Kreimer and Arnold (2000)
[19] Government of India (2004b); Sylves (1996); Waugh and Sylves (1996)

countries were forced to expend resources on disaster management that would have otherwise been more productively invested.[20] There always were contending demands for available resources, making them a significant issue in all countries. For example, after Hurricane Katrina in US, there were calls for re-prioritization of resources.[21] If it could happen in a developed country like the United States, the economically disruptive effects of disasters in developing countries were likely to be infinitely more.

The world's poorest stayed in these countries and their requirements had been well documented.[22] The impact of disasters was much higher in poorer countries because even small economic losses were critical due to abysmally low capacities.[23] Instead of being forced to spend on repairing downed electric lines, damaged infrastructure, providing emergency shelters, feeding displaced people or compensating losses, states would have spent scarce resources on more pressing priorities of laying new roads, connecting inaccessible areas, fighting disease, epidemics or investing in education and other sectors of human development.

II. Disaster Management Reform in India

The importance of disaster management can be appreciated from the above. Its significance was more for democratic polities.[24] They were likely to be held accountable for delivery outcomes by their constituents. Therefore, greater vulnerability served to increase the importance of this domain, with a potential for electoral repercussions. It increased the stakes for having effective policies that mitigated losses. For Indian administration, the salience was evident in view of the numerous natural and manmade disasters suffered by the subcontinent. It

[20] It had not been suggested that investment in disaster management was unproductive or unwarranted expenditure. The limited point was that, in terms of meeting public requirements, there were more pressing or productive sectors. Albala–Bertrand (2006) made the argument that the output impact of investment in reconstruction and mitigation was higher than that of capital lost due to disaster.
[21] Republican Study Committee (2005)
[22] UN Millennium Development Goals http://www.un.org/millenniumgoals/ retrieved 16 May 2008
[23] Ibid
[24] Boin and 't'Hart (2006)

had endured the devastation of natural hazards such as droughts, epidemics, floods, cyclones (as wind storms were better known in India), earthquakes and the rarely occurring tsunami (as wave surges were known) as the following table revealed. Industrial mishaps, terrorist incidents, transportation accidents in urban locations, communal and caste riots had also taken a heavy toll.[25] The experience and vulnerability profile indicated a very high degree of salience.

Table 1. Summary of Major Natural Disasters in India from 1900 to 2006[26]

	# of Events	Killed	Injured	Homeless	Affected	Total Affected	Damages US$ (000's)
Drought	13	4,250,320	0	0	961,841,000	961,841,000	2,141,122
average per event		326,948	0	0	73,987,769	73,987,769	164,702
Earthquake	25	61,705	213,183	2,085,700	24,966,300	27,265,183	3,147,900
average per event		2,468	8,527	83,428	998,652	1,090,607	125,916
Epidemic	66	4,543,531	0	0	419,685	419,685	0
average per event		68,841	0	0	6,359	6,359	0
Ext. Temp.	40	13,076	200	0	0	200	544,000
average per event		327	5	0	0	5	13,600
Flood	189	52,923	1,420	9,287,730	718,652,050	727,941,200	16,224,681
average per event		280	8	49,141	3,802,392	3,851,541	85,845
Land Slides	38	4,684	531	3,616,285	222,300	3,839,116	4,500
average per event		123	14	95,165	5,850	101,029	118
Wave/Surge	2	16,789	6,913	0	647,599	654,512	1,022,800
average per event		8,395	3,457	0	323,800	327,256	511,400
Wind Storm	140	163,242	17,212	9,236,745	78,415,340	87,669,297	12,719,100
average per event		1,166	123	65,977	560,110	626,209	90,851

The above data revealed an alarming picture, even though they pertained to natural disasters only. Among these disaster agents, floods and cyclones had been most frequent, and

[25] Parasuraman and Unnikrishnan (2002)
[26] Source: "EM-DAT; The OFDA/CRED International Disaster Database, www.em-dat.net – Université Catholique de Louvain – Brussels – Belgium". *Events recorded in the CRED EM-DAT. First Event:/1900, Last Entry: Sep/2006. Created on 8 November 2006

earthquakes had the second highest average death toll per event after the rarely occurring tsunamis. However, as detailed analysis revealed, human loss of life due to drought and epidemics did not account for a large numbers of fatalities after the 1960s.[27]

The situation was also alarming from a vulnerability perspective. 60% of India's landmass was vulnerable to earthquakes, more than 40 million hectares to floods, 8% of its area of 3.29 million sq. km. to cyclones, and 68% to drought.[28] Flooding in river plains had been a regular phenomenon in parts of India, like Bihar and Assam. Disaster literature, in general, and about India, in particular, noted an increase in number of 'great natural disaster events' that was attributed to growth of population and urban sprawl.[29] There had been catastrophic natural disasters like the 1993 Latur earthquake in Maharashtra province, 1998 Kandla cyclone in Gujarat, 1999 super cyclone that battered coastal Orissa, the Republic Day earthquake of 2001 that devastated large parts of Gujarat, and the calamitous 2004 tsunami that swept away coastal villages in Tamil Nadu and Andaman & Nicobar Islands.

The federal government also noted that 4344 human lives were being lost, and an approximate 30 million people affected by natural disasters every year.[30] As far as disasters from manmade hazards were concerned, the 1984 Bhopal Gas Tragedy had been one of the worst accidents in the history of the industrial world. In addition, terrorist incidents, transportation accidents, communal and caste riots had also taken a heavy toll. In 2007, India suffered heavy

[27] The 1965 drought killed 1.5 million people, whereas drought-related fatalities were 300 in 1987, and 20 in 2000. While deaths due to epidemics had continued, they were nowhere near the 0.423 million in 1926, 2.0 million in 1920 and 1.3 million in 1907. Source: "EM-DAT: The OFDA/CRED International Disaster Database. Created on 1 December 2006. www.em-dat.net - Université Catholique de Louvain - Brussels - Belgium"
[28] Government of India (2004b)
[29] Sinha, Anil K. (2001)
[30] Government of India (2004b)

casualties, next only to Iraq, Afghanistan and Pakistan in the entire world.[31] Terrorist incidents in 2001 and 2003 were particularly serious.[32]

Government and scholars in India began viewing this domain of public policy with a newfound sense of urgency, considering the vulnerability of the nation and the devastating impact of disasters.[33] It resonated with the goals of disaster research.[34] A greater focus on the subject was also due to external influences. There was increased international influence from exposure to and dissemination of overseas experiences and best practices. The United Nations had declared the 1990s as the International Decade for Natural Disaster Reduction (IDNDR). Official sources in India recognized the enormous influence of IDNDR.[35] The 1994 Yokohama Strategy of the IDNDR played a significant role in changing its relief-oriented approach to one based on mitigation and prevention. A joint program for disaster risk mitigation was taken up in 2002, by Government of India and United Nations Development Programme (GOI-UNDP) with the assistance of United States Agency for International Development (USAID) and European Union (EU). It was aimed at capacity building in seventeen of the most disaster-prone states in India.[36] Overseas agencies, like USAID, assisted India in developing climate forecasting systems.[37] India was also exposed to international norms and standards, being the largest recipient of World Bank aid for disaster management programs.[38] In the industrial sector, a United Nations Environment Program (UNEP) initiative focused on vulnerabilities to manmade

[31] NCTC http://wits.nctc.gov/reports/crot2007nctcannexfinal.pdf retrieved 27 May 2008
[32] Government of India (2004b)
[33] Reddy and Tiwari (2005). One indicator of policy priority in India, was when a theme was taken up for discussion in the annual conference of Indian Institute of Public Administration. Disaster Management was taken up in 2001.
[34] Mileti (1999) recorded the prominence accorded to normative concerns of disaster research.
[35] Government of India (2004b)
[36] Ibid, 15
[37] Ibid, 57
[38] World Bank's Independent Evaluation Group (2006a) noted a total financing of $8257 millions in 43 projects; A respondent in Gujarat pointed out that sophisticated earthmoving and rescue was procured after seeing foreign agencies operate them in the aftermath of 2001 earthquake; A respondent in Tamil Nadu admitted that they were exposed to international documentation practices after interaction with multilateral agencies, after the 2004 tsunami.

disasters, and was instrumental in improving practices in the sectors of transportation and of hazardous chemicals.[39] It initiated a process in which the country gained insights through interaction with other countries and international bodies.

Comprehensive reform was taken up by the federal government. The Ministry of Home Affairs (MHA) was notified as the nodal ministry for Disaster Management in 2002.[40] Policy makers realized a need to overhaul all aspects of the administrative approach towards disasters. In the new millennium, an Administrative Reforms Commission (ARC), only the second in independent India, was constituted by the federal government, to examine and suggest measures for efficient and sustainable administration at all levels.[41] Its terms of reference included Crisis Management and to suggest ways to "(a) quicken the Emergency Responses of administration, and (b) increase the effectiveness of the machinery to meet the crisis situation and enhance crisis preparedness."[42] Soon after, a comprehensive Disaster Management Act was passed by the Indian Parliament in December 2005.[43] In place of archaic Relief departments, provinces were encouraged to set up Disaster Management departments, Disaster Management Authorities and promulgate Disaster Management Codes in place of outdated Relief Codes.[44]

Comprehensive reform addressed long-term mitigation and prevention requirements of disaster management. The Indian Meteorological Department and the Central Waters Commission took up modernization and upgradation of flood forecasting, early warning systems. A National Core Group on Landslide Mitigation was set up, with Geological Survey of India as the nodal agency. Another National Core Group on Earthquake Mitigation was set up, and under

[39] Gupta, http://www.nsc.org.in/texts/UNEP_BD.pdf retrieved 27 May 2007
[40] Government of India (2004a)
[41] Government of India (2005b), ARC Constitution Resolution.
[42] Government of India (2005b). ARC Terms of Reference, clause 12
[43] The Gazette of India (2005). Section 2 (e) of the DM Act, 2005, included all phases of prevention, mitigation, capacity-building, preparedness, response, evacuation, rescue, relief, rehabilitation and reconstruction in disaster management.
[44] Ibid, 12

its aegis an expert committee was tasked with drafting building bye laws, town and country planning, and zoning regulations. The Bureau of Indian Standards (BIS) was asked to develop building safety codes, sensitize local government personnel, and train municipal architects and engineers. It was planned to complete modifications of Town Planning laws for all new constructions, finish retrofitting of prioritized structures, and adopt Model Town Planning laws.[45] Government of India also took the assistance of USAID in strengthening climate forecast system.

Large-scale changes were mooted for training and human resource development, too. The National Center for Disaster Management, which was set up in 1995, was upgraded to a National Institute of Disaster Management (NIDM) in 2003. Its purpose was to conduct research, undertake documentation, develop training modules, conduct training programs, and assist training institutions and state institutes. After promulgation of the Disaster Management Act in 2005, NIDM was recognized as a statutory, nodal institution. The country's premier institution for training civil servants, the National Academy of Administration, was notified as a nodal agency for training trainers. Natural disaster management cells were set up in state administrative training institutes, which trained government personnel, to increase awareness and spread norms. Academic courses, of engineers and architects, included subjects of disaster management. It was also introduced in school curricula in the 8th and 9th grades, to spread awareness.

When it appeared that federal disaster management had taken up comprehensive capacity building, the 2004 South Asian tsunami exposed its shortcomings in states. It highlighted the distance between the federal center and the states in terms of adopting policy change. In addition to a disproportionately high loss of lives, a total unfamiliarity with the disaster agent caught the

[45] NDMA (2007)

administration totally unawares.[46] As a consequence, India joined an international effort to install tsunami detection systems in the Indian Ocean.[47] It became a high priority issue and India went ahead with a plan to install a network of seismic stations, with 50 tide gauges and a dozen open-ocean tsunameter buoys. By March 2007, it had tested four tsunameter systems.[48]

In case of manmade disasters, statutory safeguards were introduced earlier. The Bhopal Gas Tragedy in 1984 resulted in benchmarks and industrial safety standards in a number of countries.[49] Under the influence of IDNDR in the 1990s, a major exercise was undertaken to improve Awareness and Preparedness for Emergencies at Local Level (APELL) by UNEP, in collaboration with government and industry.[50] Its purpose was to minimize technological accidents and environmental emergencies, and their harmful effects. This was done by identifying and raising awareness of industry-related hazards, encouraging risk reduction and mitigation, and developing co-coordination between industry, local authorities and community.[51] Importantly, a new set of rules, the "Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996" were a major outcome of the APELL program. A Road Transport Safety (RTS) initiative, focused on all hazardous and non-hazardous industrial goods, was launched with the cooperation of UNEP, USAID and National Safety Council of India (NSCI).[52] Similarly, in the oil and natural gas sector, the Oil Industry Safety Directorate (OISD) had

[46] Asian Development Bank, U N and World Bank (2005). The only other Indian experience of a tsunami, in living memory, was in 1945.
[47] UNESCO. State-of-the-art technology in tsunami warning systems, according to UNESCO, included a series of seismological stations, real-time sea-level observing network and deployment of deep-sea pressure sensors capable of detecting the tsunami signal as it traveled over the deep ocean. http://portal.unesco.org/en/ev.php-URL_ID=28551&URL_DO=DO_TOPIC&URL_SECTION=201.html retrieved 28 November 2008
[48] UNESCO http://ioc3.unesco.org/icg/files/ICG-IOTWS_IV.pdf retrieved 28 November 2008
[49] Rajkumar, Ahmad and Mohanta (2006)
[50] UNEP http://www.uneptie.org/pc/apell/ retrieved 26 July 2007
[51] UNEP http://www.uneptie.org/pc/apell/programme/casestudies/casestud.html retrieved 26 July 2007
[52] Gupta, http://www.nsc.org.in/texts/UNEP_BD.pdf retrieved 26 July 2007

considered International benchmarks of IEC, API, NFPA, etc. while developing safety protocols.[53]

Indian federal policy reform was comprehensive and spelt out specific parameters for the different phases of disaster management.[54] In the mitigation and preparedness phases, states were asked to integrate long-term plans with developmental policies. Schemes that addressed prevention and mitigation were given priority.[55] Mitigation measures for earthquakes included designs for quake resistant construction and updating building codes according to Bureau of Indian Standards. States needed to set up specialist disaster response teams, in addition to undertaking vulnerability analyses, for reaching preparedness milestones. In the response stage, it consisted of emergency plans as well as mock drills. Other steps included emergency support functions of procurement, mobile hospitals, search and rescue teams, and communication networks.[56] Equally important were measures involving local communities and non-governmental organizations, which were some of the key shortcomings identified even by the World Bank.[57] The paradigm shift was a comprehensive overhaul that represented 'double-loop learning'[58] as far as federal policy making was concerned. Its objective was to change the fundamental objective from distribution of relief to addressing all-phases of generic disaster management.[59] The sum total of changes represented a complete policy overhaul in Indian disaster management.

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[53] Verma, http://nidm.gov.in/idmc/call_for_abstracts.htm retrieved 7 May 2008
[54] Government of India (2004b)
[55] Ibid. Annexure II: The Tenth Five Year Plan chapter on Disaster Management
[56] Ibid, 78
[57] World Bank's Independent Evaluation Group (2006b) listed 'Lessons not learned from Bank Disaster Projects' by Facts and Figures on Natural Disasters. The three most important lessons concerned (a) disaster management, preparedness and mitigation, (b) simple and flexible procurement that was fundamental to expeditious implementation, and (c) coordination between different units and existing agencies. http://www.worldbank.org/ieg/naturaldisasters/docs/natural_disasters_fact_sheet.pdf retrieved 26 July 2007.
[58] Argyris and Schon (1978), 22.
[59] Government of India (2004a); Sinha, Anil K.(2001)

III. Literature Review

In the classical tradition of disaster research, Fritz (1961) defined disaster as "an event concentrated in time and space, in which a society, or a relatively self-sufficient subdivision of a society, undergoes severe danger and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented".[60] Literature, broadly, talked of three perspectives about disasters.[61] They were the classical tradition, natural hazards research and social constructionist schools. The classical paradigm saw them as interruptions of normal life in society, which was overwhelmed by the event. The focus was on returning to normalcy. The disaster research tradition looked at the disaster agent itself, studying the characteristics of disaster agents. More in the geographer-scientist mould, its proponents studied different disaster types, such as earthquakes, floods, hurricanes, etc. The objective was to understand them better and take appropriate steps to deal with them. Lastly, the social phenomenon school viewed it in terms of the social causes for vulnerability. There was a focus on vulnerability of the social fabric, and the disruption in society that was caused by disasters.[62]

Despite varying perspectives, some concerns had remained consistent. Scholarly literature on disaster management had been overwhelmingly concerned with particular events, disaster types, and impact on community.[63] Scholarly studies were mostly centered on events such as 9/11, Hurricane Katrina, earthquake in Iran, floods in Bangladesh and others.[64] There had also been a marked focus on understanding disaster dynamics, as well improving its

[60] Fritz cited in Tierney, Lindell and Perry (2001), 8
[61] Perry (2006); Mileti (1999)
[62] Perry (2006)
[63] A sample of the vast literature would suffice to indicate voluminous scholarship. It included Sylves and Waugh (1996); Comfort, Rosenthal and Boin (2001); Mitchell (1999); Waugh (2000); Farazmand (2001); Tierney, Lindell and Perry (2001); Rodriguez, Quarantelli and Dynes (2006); Haddow and Bullock (2006); Birkland (2006)
[64] Annals of the American Academy of Political and Social Sciences (March 2006), vol. 604; Case studies in Sylves and Waugh (1996), Comfort, Rosenthal and Boin (2001), and Farazmand (2001)

management.[65] Several studies examined administrative practices and organizational behavior that were concerned with capacities and scholars scrutinized general issues of mitigation, preparedness, response or recovery.[66] Literature examined institutional arrangements such as agency formation, institutional emphasis on terrorism, efficacy of Incident Command System as well as non-structural solutions for better administration.[67] Prominent themes included issues arising in a federal framework, how organizations coped with disasters, adoption of technological change, organizational design, and how policy reform was brought about by focusing events.[68]

There was also a long and rich tradition of disaster research in Europe.[69] However, early in its development, scholars recognized the role of United States as a baseline for such research.[70] Research in this domain was mostly preoccupied by particular events. As McEntire noted, these studies researched international responses, and had also focused on particular disaster types.[71] In contrast, he noted that there were very few studies about organizations that dealt with disaster management across the world. In terms of disaster research in comparative politics, he found that the output was utterly disappointing. Despite an urgent need to learn about disaster administration in other nations and recognizing that they provided a unique opportunity, there had been fewer attempts to study their lessons.[72]

[65] Tierney, Lindell and Perry (2001); Mileti (1999)
[66] Tierney, Lindell and Perry (2001)
[67] Kettl (2006); Kapucu (2006); Sylves (2006)
[68] Waugh (1988); Comfort (1988); Drabek (1991); Waugh (2006); Stewart (2006); Birkland (2006)
[69] McEntire (2006)
[70] Dynes (1988)
[71] McEntire (2006)
[72] Boin and 't'Hart (2006)

A focus on disaster types or particular events or specific vulnerabilities was predominant.[73] Importantly, greater vulnerabilities of nations outside the developed world were gaining attention only now, though their significance was recognized early in the field.[74] There were attempts at comparative research, although it was concluded that few nations had focused resources and policy attention on dealing with disaster reduction before the IDNDR.[75] Great potential was seen for undertaking disaster research across nations, though there was a need to overcome methodological difficulties in determining equivalence and formulating measures for disaster impact.[76] Recent attempts at a cross-national study of emergency organizations systems by Britton had only served to underscore the serious concerns that needed to be addressed by greater international research.[77]

Nevertheless, the bulk of scholarly output comprised of case studies, with the goal of analyzing reasons for failure. In the aftermath of Hurricane Katrina and the 9/11 tragedy, attention on disaster management agencies had only been greater.[78] Some identified non-structural factors like poor implementation of plans, communication disconnect, flawed decision-making, organizational weaknesses, lack of coordination, backward-looking strategies, greater regulation and ineffective leadership to be primarily responsible for the Katrina disaster.[79] A very significant aspect of these studies was that they focused on unitary variables and there was no attempt to undertake a comparative examination of provincial-level factors, despite clear recognition that states and local governments were primary responders.

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[73] Mitchell (1999) and the case studies in Sylves and Waugh (1996); Comfort, Rosenthal and Boin (2001); Farazmand (2001) had samples of a vast literature that was rich in case studies.
[74] Dynes (1988)
[75] McEntire (2006); Britton (2006)
[76] Peacock (1997)
[77] Britton (2006)
[78] The Annals of the American Academy of Political and Social Sciences (March 2006) vol. 604 was one example
[79] Waugh (2006); Kettl (2006)

An overview of the disaster research literature revealed two major shortcomings. First, in the opinion of this research, the emphasis on a public administration perspective had been limited, despite great scope for addressing policy concerns. [80] Irrespective of the conceptual approaches to disasters, their conclusions were the starting point for policy intervention, as governments were seen as the only organizations with resources and authority to deal with disasters.[81] Reducing vulnerability, affording protection through better preparation, response and recovery were good examples of public goods that needed to be addressed through public policy.[82] Second was the need to undertake comparative research in disaster research.[83] Even though, a need for systematic comparison had been articulated since the 1970s, there had been sporadic attempts at studying across events, organizations and socio-cultural systems.[84] It remained an occasional tool, as the bulk of scholarship opted for case studies.

Moving on to literature on Indian disaster management, it was also found to have, by and large, remained faithful to case studies of specific disaster events and types. The literature, itself, was in two major categories. Bulk of it was reports and studies done by practitioners, governmental agencies and international institutions. [85] The other category consisted of scholarly analysis, as well as reports of non-governmental organizations. Needless, both reached diametrically opposite conclusions when evaluating the efficacy of disaster management in India. A great amount of work in this field had been conducted more by scientists, geographers and sociologists.[86] But, an overarching perspective of disaster management in India was attempted

[80] Mitchell (1999); Waugh (1999); Kettl (2006) were some examples
[81] Schneider (1995); Waugh (2000)
[82] Ostrom, Parks and Whitaker (1978) discussed measures to identify public goods
[83] Tierney, Lindell and Perry (2001)
[84] Rodriguez, Quantarelli and Dynes (2006); Tierney, Lindell and Perry (2001); Mileti (1999)
[85] Sinha, Anil K. (2001); Sharma (2001); UNDP (2001); UNDP (2005); Provention Consortium (2005); USAID http://www.usaid.gov/in/our_work/strategy/strategy6.htm retrieved 22 June 2008, were examples.
[86] Sharma (2001) was a good example

only by a few, who retained a focus on country-level variables.[87] It was surprising that there had not been any consistent interest by scholars, given the fact that comparative analyses tended to be problem-driven.[88]

Most of the official records and reports had only documented events and statistics; there was hardly any attempt at critical evaluation. Moreover, there seemed to be an implicit approval of satisfactory administrative response.[89] Even practitioners found that, on the whole, the task of disaster management was handled quite responsibly and adequately.[90] The nodal agency dealing with the subject, Ministry of Home Affairs, recorded progress in the country's able management of disasters,[91] although it had realized the need to change and reform in a very fundamental way.[92] Official documents had been a catalogue of to-do concerns, as well as a review of activities in pursuit of a new approach at the federal level.[93] They also recorded policy changes that were taking place, noting the shortcomings of earlier policies. A few, highly useful, empirical studies had assessed the consequences of policy changes. One example was the work of Orissa State Disaster Mitigation Authority, which had a valuable assessment of policy implementation.[94] Yet, on the whole, there was no attempt at rigorous, systematic analysis and reaching conclusions for implementing policy reforms.

The absence of critical analysis was also found in several works by scholars and scientists associated with government bodies. A few reports were candid in their assessment. For example,

[87] Parasuraman and Unnikrishnan (2002); USAID http://www.usaid.gov/in/our_work/strategy/strategy6.htm retrieved 22 June 2008
[88] Przeworski in Kohli et al symposium (1996)
[89] Government of India (2004a); Rajan (2001); Sharma (2001)
[90] Rajan (2001); Sinha, Anil K. (2001)
[91] Government of India (2004b)
[92] Government of India (2004a)
[93] Government of India (2004b); NDMA (2007); NIDM http://www.nidm.gov.in/Earthquakes3_ii.asp retrieved 6 May 2008
[94] OSDMA/UNDP (2001) had documented experience sharing and offered assessment of their experience in disaster management. Its results and recommendations about involvement of Panchayati Raj institutions and its functionaries contained important lessons http://data.undp.org.in/dmweb/LESSONs%20Learnt-%20Orissa%20floods.pdf retrieved 25 May 2007

the guidelines for construction and building codes recorded an abysmal track record in compliance of these non-structural measures.[95] Similarly there had been some attempts at identifying shortcomings, and re-assessing fundamental goals. [96] The need for a radically different approach of disaster management was a common theme. A very significant feature of official literature was the identification of the central role of provinces in disaster management.[97] While they correctly identified the unit of analysis, it was not used for any systematic comparison.

The other major stream of literature on Indian disaster management was by scholars, as well as activists of non-governmental agencies.[98] They focused on a wide range of themes, from evaluating government response in specific disasters to community vulnerabilities. It was interesting to note that most of these works based their analysis on one or two incidents and attempted to inductively generalize about the gamut of disaster administration in India. For most part, there was little or no attempt to systematically analyze the field and derive fuller explanations thereby contributing to the growth of the discipline in theory and practice. The studies did not look at the whole field, in broad terms, and across states and disaster events.

Literature in this category had covered sociological issues such as community's perception of acceptable risk, [99] socio-economically vulnerable groups, [100] and general lessons about disaster management.[101] There had been case studies of specific events,[102] comparison of

[95] NDMA (2007) http://www.cidc.in/NDMA/pres/01_03_01.pdf retrieved 25 May 2007
[96] Government of India (2004b); UNDP (2001); OSDMA/ UNDP. *Lessons Learnt: Orissa Floods- 2001*. http://www.undp.org.in/dmweb/images/LESSONs%20Learnt-%20Orissa%20floods.pdf retrieved on 25 May 2007
[97] Government of India 2004b); Sinha, Anil K. (2001)
[98] Haddow and Bullock (2006); ADEPT (2006); AIDMI (2005); Parasuraman and Unnikrishnan (2002)
[99] Pilgrim (1999)
[100] Singh and Ballabh (2005); Winchester (2000)
[101] AIDMI (2005) Special Issue 8, October 11, 2005 was about disaster management lessons in India.
[102] ADEPT http://www.reliefweb.int/rw/RWB.NSF/db900SID/ACIO-6Q4BXU?OpenDocument retrieved 9 November 2006, had a case study on 2005 quake relief in J & K.; Wagle and Warghade (2006)

different events of the same disaster type,[103] and general opinion pieces about the sub-field of Indian disaster management,[104] among others. Majority of these scholars and groups were critical of policy interventions. The debacle was clear for them.[105] They called for introspection and identification of weaknesses, in addition to outright criticism.[106] The state was considered to be ineffective in preventing avoidable loss of life or property[107] due to rigid bureaucratization, shortsighted planning, and lack of structured involvement of community and non-governmental agencies.[108] If there had been lack of adequate mitigating measures in some cases, preparedness was found to be inadequate in others.[109] Recovery in most had been below par, if not non-existent.[110] Scholars and, in some cases, international organizations too, noted grave shortcomings of lack of transparency and poor consultation,[111] and no institutionalized involvement of local governments and NGOs.[112] They stressed an urgent need to involve Panchayat Raj Institutions (PRIs) in an effort to de-bureaucratize, and involve non-governmental, political agencies.[113] Even the new Disaster Management Act of 2005 was found to exemplify top-down policy that was characteristic of disaster management as well as public administration in India.[114]

International organizations also made important contributions to literature. Their reports on specific events or on the state of Indian disaster management also included chronicles of

[103] AIDMI (2006) compared three cyclones in AP, Orissa and Gujarat in its Special Issue 8, March 26, 2006.
[104] Parasuraman and Unnikrishnan (2002); Martin (2007)
[105] Winchester (2000); Parasuraman and Unnikrishnan (2002)
[106] Sharma (2001); Haddow and Bullock (2006); UNDP (2001); UNDP (2005); ADEPT (2006); Provention Consortium (2005); AIDMI (2005), South Asia Disasters.net; Parasuraman and Unnikrishnan (2002); USAID http://www.usaid.gov/in/our_work/strategy/strategy6.htm retrieved 22 June 2008
[107] Sharma and Rout (2001)
[108] Jain (2001); Sinha, Anil K. (2001); Parasuraman and Unnikrishnan (2002)
[109] Asian Development Bank-UN-World Bank (2005) noted that the 2004 tsunami caught the government unawares
[110] Provention Consortium (2005b); Parasuraman and Unnikrishnan (2002)
[111] Provention Consortium (2005a)
[112] Winchester (2000); Sinha, Anil K. (2001); Parasuraman and Unnikrishnan (2002); Gandhigram Rural University (2008); Interview with team leader of an international NGO supported this observation.
[113] Reddy, Thapliyal and Sastry (1996)
[114] Martin (2007); Rosenthal (1988) had a similar opinion about the disaster management legislation in Netherlands

successful initiatives,[115] post-tsunami reconstruction,[116] and recovery in Gujarat.[117] If lack of preparedness was a cause for devastation in the 2004 tsunami,[118] absence of infrastructure affected supply of emergency provisions as well as medical assistance in others.[119] A need to comprehensively address recovery operations was also articulated.[120] They agreed with scholars that administration had failed in discharging its duties.

Amidst all these, students of public administration were likely to be disappointed for the lack of adequate concern about policy factors, as well as lack of critical and rigorous analysis. It was difficult to draw generalizable conclusions. Only a few organizations had undertaken a general study of Indian disaster management, and spelt out the lessons that needed to be learnt.[121] The exercise by the Independent Evaluation Group of the World Bank employed a comparative approach,[122] although the unit of analysis was a nation. They found a series of shortcomings in India, such as a need to address long-term objectives, improve coordination, and establish procurement procedures, community participation and others. Another valuable study was done by USAID, which went into great detail about the failings of Indian disaster management and laid down benchmarks. They identified a number of shortcomings such as lack of responsiveness of government officers, no early warning systems, inadequate resources for mass evacuation, improper coordination among various government departments, and lack of standard operating procedures, among others.[123] Its catalog of shortcomings included issues of planning, coordination, and shortage of resources and weaknesses of non-structural measures.

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[115] ISDR (2007) had recorded good initiatives such as Afat Vimo and SEEDS about masons' training
[116] UNDP http://www.undp.org.in/dmweb/Tsunami/UN%20Tsunami-Final.pdf retrieved on 29 November 2008
[117] Provention Consortium (2005b)
[118] UNDP (2005); Asian Development Bank, U N and World Bank (2005)
[119] Relief Web (2006)
[120] Provention Consortium (2005b)
[121] AIDMI (2005). Special Issue 8, October 11, 2005 was about lessons derived from disaster management in India.
[122] World Bank (2006b)
[123] USAID http://www.usaid.gov/in/our_work/strategy/strategy6.htm retrieved 22 June 2008

Interestingly, the USAID report had a key finding that was central to this study. It noted the enormous variation in among different states of India. Thus, instead of aggregating all disaster management at the level of nation, it pertinently pointed to their differing levels of capacities.

In all categories, barring the few comprehensive studies, a distinct feature had been their preoccupation with specific disasters and events. Case studies had been the research design of choice, as seen in the profusion of professional and scholarly output on specific events.[124] There had also been a noticeable focus on specific types of hazards and the different policy interventions for the various hazards.[125] An overarching perspective of disaster management in India was attempted by few only, who retained their focus on country-level variables.[126] Government as well as scholarly literature shared the same concerns, as far as topics and their treatment were concerned.

IV. Scope and Plan of the Study

A significant inference from the literature was that emergency management in India had learnt from experiences.[127] The important thing, then, was to probe its reasons. Literature, it had been seen, had identified major shortcomings of Indian disaster management. However, two things were missing. First, there was no attempt to go beyond observed shortcomings and understand the reasons behind variation in performances of states. Why did provinces vary in policies and capacities? The inquiry had the potential to go beyond a catalogue of listed deficiencies and identify fundamental causes. Second, the entire effort was focused on specific events or disaster types. Instead, a much broader study of disaster management was required for drawing generalizations.

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[124] Haddow and Bullock (2006); Kabra and Khator (2001); Winchester (2000); Jasanoff (1994)
[125] Kabra and Khator (2001); Sharma (2001); Winchester (2000); Pilgrim (1999)
[126] Parasuraman and Unnikrishnan (2002); USAID http://www.usaid.gov/in/our_work/strategy/strategy6.htm retrieved 22 June 2008; World Bank's Independent Evaluation Group (2006b)
[127] Sinha, Anil K. (2001)

To meet such a glaring gap in literature, this research undertook a comparison of states, which had varying capacities to deliver these public goods. In recent times, scholars, who had studied India, had undertaken comparative studies that addressed governance issues such as incidence of crime, success in inviting foreign direct investment as well as the spatial spread of development.[128] Some of these explanations included institutional arrangements, social cleavages, socio-cultural traits, and rational choice explanations based on the political party system, among others.[129] While such debates were not central to the quest, they shared a common concern about the efficacy of Indian public administration and, equally important, an application of the inter-state comparison method that had been adopted by them. A similar study was needed for emergency management, for mid-level theory building about disaster management. The literature that had been reviewed was noticeably silent on this important question.

The other important part of this research was to identify explanatory variables that were causal factors for different levels of administrative capacities to deal with disasters. Mere recognition of variation was insufficient. It was important to know why some states invested more in building robust organizations, were able to establish better procedures and practices that lead to greater capacity building and abler handling of disasters. Some of the reasons proffered by scholars for good outcomes included organizational learning, an intergovernmental context of shared governance, economic resources, adoption of technological change, organization design, subjective abilities of leadership, and experience of calamitous events.[130]

[128] Kohli (1990); Sinha, Aseema (2005); Mitra (2006); Dreze and Sen (2002)
[129] Kohli (1990); Chhibber and Nooruddin (2004); Frankel (2006)
[130] Comfort (1988); Schneider (1990); Waugh (2000); Tierney, Lindell and Perry (2001); Waugh (2006); Birkland (2006)

The factors mentioned above were illustrative and revealed the range and variety of causality. However, some of them were either not fully applicable or were themselves a result of more fundamental and underlying factors. Intergovernmental context of disaster management did not play a major role in the Indian context because the federal center was constitutionally obligated to frame policy, as well as provide resources. Organizational design was itself an outcome of more fundamental causes and this research saw it as a major measure of variance on the dependent variable. Similarly, adoption of technological change also became the effect rather than a cause in this research. While accepting the important role of social cleavages and socio-cultural specificities in different parts of India, it was nevertheless seen that these differences were not significant for a couple of reasons. First, spatial subjectivities were largely overcome by the role of center in importance of disaster management. Second, the numerous disaster experiences created an imperative to go beyond social divisions. Third, any influence on this count was controlled by the factor of a uniform structure in higher echelons of administration.[131]

The subjective role of personnel, either in terms of leadership or as a consequence of good human resource development practices, was also not examined.[132] This factor gained credence whenever key personnel were shifted or sacked, as a consequence of unsatisfactory performance during disasters. [133] However, it was essential to recognize two major weaknesses. First, if leadership were the most significant independent variable, there would be problems in drawing generalizations and for creating interventions for better disaster management. Second, emphasizing better human resource development would lead to a circular logic since the dependent variable included variation in skill upgradation and training activities.

[131] Jenkins (2004)
[132] Sylves (2006)
[133] Ibid, 33 noted Michael Brown's resignation as head of FEMA, for failures after Katrina; Sylves (1996) mentioned the role played by James DeWitt in making FEMA an effective organization.

Instead, this research identified the factors of development levels, institutional strengthening through local self-government, the nature of the party system in a competitive political context, and organizational learning from prior disaster experience of focusing events. Levels of economic development appeared to provide ready explanations for superior outcomes. Intuitively, it appeared self-evident that developed states that had more resources, were able to create better structural arrangements to address disasters. More developed states would have more resources to undertake better structural measures, to mitigate risks posed by hazards. They can also set up good early warning systems, establish robust communications networks and invest in enhancing capabilities of first responders, apart from addressing issues arising from long-term and short-term recovery. Thus their access to resources provided a clear, causal relationship to reducing vulnerabilities. In India, there was marked disparity between states that allowed such analysis. Data about economic progress of states was readily available in the form of periodic reports and statistics published by the Planning Commission, and Finance Ministry, as well as the Registrar General of Census Operations.[134]

On the other hand, levels of economic development did not always translate into superior capabilities for a couple of reasons .[135] First, there may not be a focus on disaster management in policy agendas.[136] Second, mere existence of institutions and availability of resources may not correlate with organizational effectiveness, and better practices. It was known that organizational practices, procedures, non-structural mitigating measures, institutionalized involvement of local communities as well as non-governmental organizations, were not dependent upon economic resources alone.[137] They could offset shortcomings of resources and structural capabilities by

[134] Dreze and Sen (2002)
[135] Kabra and Khator (2001)
[136] Kim and Lee (2001)
[137] Sakamura (2001)

developing coping mechanisms and arrangements that made optimal use of capacities. For example, Orissa was one of the poorest states in India. Yet, on values of the dependent variable, some saw it better than a more developed Gujarat.[138] Moreover, issues of vulnerability also needed to be considered.

An institutional explanation that lent itself to examination was that states with well-established local self-government tended to do better. Since local communities were the first to reach the scene, an active and responsive local government was seen to be a better explanation for superior outcomes. Not only would their response time be lesser,[139] but local institutions were recognized as effective voices of local requirements.[140] A favorable factor for this research was the uneven record of local self-government among Indian states. They were robust only in a few states like Maharashtra, Gujarat, and Karnataka. In some others, many these bodies had been superseded and their functioning taken over by states. Consequently, it appeared possible to derive causal linkages between effectiveness in disaster management and the extent of decentralization in the local bodies, called the Panchayati Raj Institutions (PRIs). For example Orissa was successfully able to integrate Panchayati Raj Institutions in a community participation model.[141] Periodic evaluation of panchayati raj institutions provided a stable basis for using this factor for comparison.

The next factor concerned the electoral system and governance that focused on the political party system. The nature of party systems was seen as a critical factor for making public goods electorally salient as well as in ensuring policy reform. Thus, the cohesiveness of the party

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[138] Sinha, Anil K. (2001). This was stated in 2001. The situation changed thereafter and Gujarat was later considered to have adopted wide ranging, comprehensive capacity building as discussed in the subsequent chapter on the dependent variable.

[139] OSDMA/ UNDP. *Lessons Learnt: Orissa Floods- 2001*. The study found that local institutions responded faster. http://www.undp.org.in/dmweb/images/LESSONs%20Learnt-%20Orissa%20floods.pdf retrieved 25 May 2007

[140] Pilgrim (1999)

[141] OSDMA/ UNDP. *Lessons Learnt: Orissa Floods- 2001*. http://www.undp.org.in/dmweb/images/LESSONs%20Learnt-%20Orissa%20floods.pdf retrieved 25 May 2007

systems in different states was examined for their impact on capacity building in disaster management. Cohesion of party system was noted as a significant factor in effecting policy reform. Thus greater cohesion of political parties and increased electoral salience of disaster management was hypothesized to lead to greater responsiveness of governments in developing capacities and practices in dealing with disasters.

The last variable that was considered was the factor of organizational learning. In the literature on disaster management, prior disaster experience was seen as a consistently "major predictor of how preparedness and response activities are undertaken".[142] Particularly devastating and severe disasters were 'focusing events', [143] which led to double-loop learning, with major policy consequences.[144] Disasters like super cyclones or calamitous earthquakes or tsunamis became defining moments for governments which then undertook fundamental reform. In short, such learning had the potential to lead to a comprehensive overhaul, similar to a systems approach of organizational learning.[145]

V. Contribution and Significance of this Research

This research made important contributions on several counts. First, it adopted a comparative method in an intra-provincial context in public administration. In the process, it hoped to revive the comparative study of public administration that had fallen into limbo after the heady days of 1960s.[146] Second, in the sub-field of disaster management, it adopted a method that was more rigorous than the popular case study. Third, it contributed directly to literature on Indian disaster management, addressing concerns of scholars and practitioners. In this domain,

[142]Tierney, Lindell and Perry (2001)
[143] Birkland (1997) p.1, used Kingdon's concept of 'focusing events' to explain linkages with agenda setting and policy making in disaster management. 'Potential Focusing events', as he called them, become known to policy makers and public at the same time.
[144] Tierney, Lindell and Perry (2001)
[145] Senge (1991).
[146] Heady (2001). The introductory chapter discussed the topic in detail

policy implementation had moved ahead due to a confluence of knowledge sharing, whereas scholarship had not kept pace. On the other hand, a vast literature abounded in "engineering",[147] whose main focus was less on academic rigor and more on specific interests of clients, and contributed little to theoretical development.

Theoretically, this research filled an important gap in the literature about causal factors for good governance. Methodologically, it established the utility of applying the comparative method for disaster management studies, applying it at a sub-national level.[148] It is the considered opinion of this author that such application had great relevance in other domains of public administration, too. The empirical concerns of practitioners had been addressed as the results of this research had significant implications for planning policy interventions at different levels. For the federal government, it provided a rationale for critical inputs. For states, it provided a framework to plan and implement disaster management. For institutions of local self-government, it promised to indicate their core competencies. Moreover, recognition of the crucial role of local bodies was likely to hasten decentralization of responsibilities from state level. Overall, it provided an imperative to focus policy attention on a crucial area of public administration without waiting for the next major disaster to overhaul emergency management systems.

[147] Elmore (1988) placed literature into three broad categories, as (i) 'science' which was academically rigorous and meant for testing hypothesis and developing general statements of cause and effect, (ii) "engineering" undertaken for specific clients and their specific interests, and (iii) 'craft' that was limited to particular problems, institutions, political preferences and a particular period of time, 316

[148] Jenkins (2004)

Chapter 2: An Inter-Provincial Comparison of State Capacities

Overwhelming use of case studies had been a striking feature of literature on disaster management.[149] Specific events, locations, disaster types, and their impact, as well as a focus on particular phases of disaster management had, by and large, attracted scholarly attention.[150] Research had yet to witness a wider application of the comparative design, although it held great promise for scholars and practitioners. This research firmly believed that a comparative method could be particularly fruitful in identifying causal factors, which had direct bearing on effective disaster administration.[151] Recognizing the strengths of the method, it was applied in an intra-national context for a comparison among states.[152] The inter-province application was a valuable contribution in a domain in which comparisons had been mostly used for cross-national studies.

The first part of this chapter discusses the research question with particular attention to the dependent variable. It also outlines the independent variables for exploring their contributions. The second section sketches out important features of the Indian federal system and governance responsibilities towards disaster management, and places this study in its legal-institutional framework. The research design is discussed in the third segment. It puts forward a rationale for the comparative research design, underscoring its suitability in the Indian political-administrative context. It deals with research methods in disaster research, making a case for adopting an intra-national comparison. The fourth section operationalizes the dependent variable.

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[149] Drabek (1997)

[150] A sample of the vast literature included Tierney, Lindell and Perry (2001); Rodriguez, Quarantelli and Dynes (2006); Mitchell (1999); Waugh (2000); Kettl (2006); Mileti (1999); Kapucu (2006); Sylves (2006); Kalantari (2001); Col and Chu (2001); Sakamoto (2001); Terry (2001); Kim and Lee (2001); Farazmand (2001); Gupta (2007); Pilgrim (1999); Winchester (2000); Sharma (2001); Jain (2006); Kabra and Khator (2001); Reddy, Thapliyal and Sastry (1996); Jasanoff (1994)

[151] McEntire and Mathis training.fema.gov/EMIWeb/edu/docs/EMT/Chapter%20-%20**Comparative**%20**Politics**%20and%20**Disasters**.doc- retrieved 8 July 2008.

[152] Reference to states in this research was not a reference to nation-states. They referred to provinces, and 'center' had been used to indicate the federal level.

Noting that disaster management does not easily lend itself to evaluation measures, defining the dependent variable was a significant part of the research. Last is a discussion on selection of cases and the method of testing the hypothesis. The data collection methods in this research are also presented in the same section.

I. The Research Question and Explanatory Factors

The central question of this research addressed theoretical and normative concerns in disaster management. It aimed to identify the factors that had a systematic and significant effect on effective administrative capacities for dealing with disasters. What, if any, were the motivating factors for undertaking fundamental policy reform to develop good disaster management systems? These questions were important for middle-range theorizing in disaster research. For practitioners attempting to formulate appropriate policy interventions, the research question addressed extremely important issues. Hence, it attempted to provide answers to academic and normative concerns by examining disaster management and policy reforms in four selected states in India. Each of the states had known vulnerabilities, and provided an appropriate setting to examine the roles of different explanatory factors.

However, literature in the discipline had no template for a systematic examination of causality of capacity building in administrative systems. There were neither models to rely upon nor a list of explanatory variables, from previous research. Therefore, this research identified factors that had face validity, and those that were mentioned in literature, although not as a result of any evaluative exercise in an inter-provincial framework.[153] Extant literature, for the most part, had referenced them, although not systematically. Yet, problems remained as there was no attempt at deriving a causal relationship. Was it possible to have effective administrative systems

[153] Comfort (1999) had examined seismic disasters in different countries to study community-based, self-organizing processes.

only if there were economic resources to invest in them? Did self-governing local bodies make a critical difference to the system's capacities? Were there other factors that could explain why some states enhanced their capabilities and were able to perform more effectively? These questions were critical to practitioners, and scholars had a responsibility to address them. However, before discussing the research design, it was necessary to explain the Indian setting.

II. The Federal Context

The political-administrative system of India provided the context for this research and it was necessary to place it in the nation's federal framework. India is a federal polity that became independent from British colonialism in 1947. It comprises of 28 states and 7 Union Territories (UTs).[154] States were decentralized, provincial units with elected representatives and legislative autonomy. Union Territories, on the other hand, were under direct control of the federal center, i.e. Government of India. The Constitution demarcated powers and responsibilities between center and states, by drawing up different jurisdictional Lists. They were the Central, State and Concurrent Lists. While center and states had exclusive jurisdiction over the first two lists, respectively, the Concurrent List included subjects that could be addressed by both levels.

States were administratively divided into 'districts', and administration was operationally carried out at the level of each of these 604 territorial units.[155] Districts were an extremely important level in the institutional arrangement of administration, and were vested with key functions. The leadership positions at these levels were occupied by civil servants of the All-India Services. Importantly, this framework had existed since colonial times, and had remained,

[154] Government of India (2008). Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttaranchal, West Bengal are the 28 states. The list of Union Territories consists of Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Delhi, Lakshadweep, and Puducherry.

[155] Government of India (2008). Total area of India is about 3.3 million square kilometers, which is slightly more than one-third the size of the United States. The latter has 3077 counties.

unchanged even after independence. Consequently, there had been critical views that found the outdated, colonial outlook of higher civil services as dysfunctional and unresponsive to contemporary demands. It was considered to be a major cause of ineffective administrative outcomes, despite vast experience.[156]

In recent decades, a third level of government had emerged below the states. This was the level of local self-governments, represented by Panchayati Raj Institutions (PRIs). There were three levels of these institutions, of which the Zila Parishad (ZP) was the highest and was coterminous with a district.[157] The Panchayat Samiti (PS) was below it, at the intermediate level of a developmental block, and the Gram Panchayat (GP) for a large village, or a small group of them, was at the lowest rung. An important feature of the PRIs was an absence of uniformity in their structural arrangements. States had different institutional arrangements at the intermediate level, and also differed in the manner of elections to these bodies. Moreover, there was considerable variation with respect to the extent that states transferred functions, functionaries and financial resources to these institutions.[158]

It was important to note that, disaster management was not specifically mentioned in either the Central or State lists, or even the Concurrent list.[159] However, the constitution entrusted the center with residual powers to deal with all subjects not mentioned in the above.[160] Notwithstanding the center's constitutional obligation, the work was operationally carried out by states, as the former had no independent machinery or mechanism to deliver public goods in this

[156] Alexander (2003)
[157] Government of India (2006b). Three levels were proposed, with flexibility for the intermediate tier in states with a population of less than 20 lakhs.
[158] Government of India (2006b); Mathew (2000). There was wide variation among different states in the institutional arrangements, functions, functionaries and financial resources of PRIs. Nomenclature also varied between states, with the intermediate administrative level being called Taluka or Tehsil or block. By and large, districts had been common across different states, although they varied in size and population.
[159] Government of India (2004b); Sinha, Anil K. (2001)
[160] Government of India (2007a). It was taken up by the Center under Item 97 of the Union List.

domain. It provided states with financial aid, expertise and logistical assistance for different purposes in disaster management.[161] In case of Union Territories (UTs), which were federally administered, the center shouldered the entire responsibility. The difference in central involvement was clear in the following example. When the 2004 South Asian tsunami devastated the UT of Andaman and Nicobar Islands in the Bay of Bengal, the central government was in direct charge of relief operations. Its personnel were handling all the activities, and it incurred all expenditure. However, in the province of Tamil Nadu, the duties were carried out by the elected state government. Substantial financial assistance was, however, provided by the center.

Overall, the Government of India formulated disaster policy for the entire county, identifying its direction and thrust areas. The states, as autonomous self-governing units, were encouraged to formulate their own, in line with the central policy. Federal policy acted as a guiding force and helped in setting objectives. The autonomy of states and the imperative of federal division of powers did not empower the center with authority or leverage to enforce compliance in disaster management.[162] The state had an incentive, in the form of federal grants and fiscal transfers, to adopt and implement central guidelines. More than any other level of governance, a state was accountable for disaster management. And at times, state governments took the lead in formulating policy.[163] The states formulated their policies and built capacities through the programs of various departments. Implementation was ensured through districts and other field formations. Disaster management was one of the primary responsibilities at the level

[161] Pande and Pande (2007)
[162] Government of India (2007a). Article 356 of the Constitution allowed the center to dissolve a state legislature and dismiss its elected government when the latter failed to discharge its constitutionally mandated duties. However, there had been sparing usage of this power in recent times.
[163] As the Secretary of the Department and Disaster Management in Orissa pointed out, the Orissa Disaster Mitigation Authority preceded its federal counterpart. Orissa was also a leader in setting up a Disaster Rapid Action Force.

of the district. Hence, states had been identified as the appropriate unit of comparative analysis in this research.

III. Research Design for Disaster Management

Major research designs in social science research included both quantitative analysis and qualitative methods.[164] A quantitative method allowed control and manipulation of variables to identify the independent and autonomous impact of each of them. Yet, there was a possibility of inaccurate operationalization of concepts as well as wrongful categorization of variables due to conceptual stretching. [165] From a practical point of view too, collection of data from a large universe of cases entailed great costs. At the other extreme were the benefits of a case study,[166] although it had been commonly criticized for its limited value in determining causal relationships. Moreover, some scholars often considered area case studies to be unscientific.[167] The comparative method with a limited number of cases was a valuable compromise, using a plurality of cases for establishing similarities and differences, for drawing causal inferences .[168] However, its application in disaster research raised important concerns because the domain involved the physical, demographic environment and built-up environments,[169] and also because it was difficult to establish a base template as natural elements differed in characteristics and impact.[170]

[164] Phillips (1997).
[165] Sartori (1970)
[166] Eckstein (1975)
[167] Green (2002)
[168] Adler (1983)
[169] Mileti (1999); Vogel (2001) explained that urban locations had greater vulnerability due to population and economic growth; Mitchell (1999) found mega cities to be under greater threat due to greater complexities; McEntire (1997) noted that development increased vulnerability
[170] Quarantelli, Lagadec and Boin (2006); Bourque et al (2006)

The objectives of this study, with concerns for generalizable conclusions and in-depth analyses, were best achieved by adopting a research design with limited comparison of states.[171] The comparative method, while less detailed than a case study method, enabled a closer scrutiny than a statistical method. Practical concerns of disaster management appeared best addressed since it allowed comparison across a limited universe of cases on the same set of variables. It enabled researchers to derive cause-effect relationships. Thereby, it also facilitated formulation of a common framework for conducting comparative evaluations.

The adoption of a comparative research design in disaster management also resonated with calls for a more widespread usage that were made since early days of the sub-field's development.[172] In the past, disasters provided scholars with opportunities for conducting cross-national and international collaborative research.[173] Globalization and international efforts for disaster reduction had also increased expectations of growing cross-national research.[174] However, systematic efforts to approach disaster management from a comparative framework began late.[175] As a survey of disaster research by McEntire and Mathis showed, most of the studies had focused on international responses, causes and consequences of disaster agents, or about specific subject areas.[176] Case studies formed the bulk of empirical scholarly work on disasters, event types, and emergency management organizations, although each of them

[171] Kohli et al symposium (1996). Katzenstein opined that research direction was determined by nature of problem; Drabek (1997)
[172] Rodriguez, Quantarelli and Dynes (2006); Mileti (1999); Tierney, Lindell and Perry (2001); Britton (2006); Drabek (1997); McEntire and Mathis training.fema.gov/EMIWeb/edu/docs/EMT/Chapter%20-%20**Comparative**%20**Politics**%20and%20**Disasters**.doc- retrieved 8 July 2008.
[173] Dynes (1988); Quarantelli (1997); Britton (2006); Mileti (1983)
[174] Peacock (1997); McEntire and Mathis training.fema.gov/EMIWeb/edu/docs/EMT/Chapter%20-%20**Comparative**%20**Politics**%20and%20**Disasters**.doc- retrieved on 8 July 2008
[175] Benjamin McLuckie's dissertation in Ohio State University was considered to be among the first. Dynes (1988); McEntire (2006); Britton (2006)
[176] McEntire (2006).

constituted only one case for observation.[177] The cases that were explored ranged from a train accident in UK, earthquake in China, nuclear accident at Three Mile Island, earthquake in Iran, plague in Surat, Bangladesh's emergency policies, emergency management in Korea, 9/11 attacks, Hurricane Katrina, etc.[178] Research had "long been dominated by narrow analysis of particular cases…"[179] Consequently, there had been little learning about the full impact of these crises.[180]

When compared to the vast literature, applications of the comparative method in disaster management were scanty.[181]The few included sociological studies that examined the phenomena of volunteerism, emergent groups and adaptive behavior in different countries.[182] The infrequent application pointed to problems in undertaking comparative research. Methodological decisions in disaster research were seen to be affected by issues of timing, access, generalizability, calculation of losses and procedures in collecting data.[183] Moreover, methodological problems were added due to difficulties with concepts like region, community, society, nation, etc. as these were the socio-spatial contexts in which disasters took place.[184]

There were possibilities of complications in comparisons due to differences in political systems, administrative organizations, levels of economic development, cultural beliefs, and historical traditions. All or any of them could significantly influence and impact the manner in which disasters were handled. In addition, there were differences in administrative capabilities, institutional arrangements and resource endowments, making it difficult to establish a national

[177] Mileti (1987); Drabek (1997)
[178] Drabek (1997); Quarantelli (1997), 47; McEntire (2006) listed important case studies; Britton (2006); Khondker (1996); Sylves and Waugh (1996), Comfort, Rosenthal and Boin (2001), and Ali Farazmand (2001) volumes contained case studies
[179] Gilbert (1998), 11
[180] Boin and 't Hart (2006)
[181] Stallings (1997)
[182] McEntire (2006); Drabek and McEntire (2003); Comfort (1999)
[183] Stallings (2006); Bourque et al (2006);
[184] Peacock (1997)

template for cross-national comparisons. The assumption of unit stability was threatened when it became difficult to maintain a distinction between "primary" and "secondary" attributes.[185] A cross-national comparative study of disaster management was complicated due to such confounding factors. The solution was not in abandoning the method, but in selecting appropriate units of analysis, because meaningful comparison was possible between similar cases.[186] Once this weakness was addressed, these difficulties were surmountable.[187] It became possible when controls were exercised, enabling a fruitful comparison among states.[188]

Importantly, scholars had also recognized the advantages of adopting units of analysis at the level of administrative regions.[189] Similarities, on counts of culture, political systems, and administrative arrangements, enabled the control of confounding factors. Selection of cases was better since research could ensure greater unit homogeneity on most common measures.[190] At the same time, differences among them, in terms of capabilities, experiences, institutional frameworks, economic resources and other explanatory factors became suitable for drawing causal inferences.

Early in the development of disaster research, it was recognized that India, besides being extremely disaster prone, was a promising area for comparative research.[191] However, bulk of literature on disaster management in India had also comprised of case studies, as had been noted in earlier sections. Hitherto, the nation was the unit of analysis, while examining specific events or disaster types.[192] There were no attempts to undertake systematic comparative disaster

[185] Jackson and Nixon (2002), 95
[186] Waldo (1980)
[187] Adler (1983); Eglene and Dawes (2006)
[188] Some of the better known examples were Lester et al, (1983); Williams and Matheny (1984); Stewart (2006)
[189] Jackson and Nixon (2002); King, Keohane and Verba (1994); Peacock (1997)
[190] King, Keohane and Verba (1994)
[191] Dynes (1988)
[192] Sharma (2001)

research among states.[193] This research aimed at filling the gap. It chose to focus on states and the manner in which they made policy interventions that critically determined their capacities.

The rich and varied experiences of states made it possible to draw significant and valuable lessons, by identifying differences and commonalities between them. However, lest differences be overly emphasized, the presence of several significant, common factors that controlled for variation among states, were noted.[194] First, the political system was a major unifying feature. The electoral system provided representation to all states in the national Parliament. A common institutional bond was reinforced by a political party system that was dominated by national actors. Second, the bureaucratic structure in the entire country was common to a great extent. There were the constitutionally mandated All-India Civil Services that manned the higher rungs of government in all states, and were a common resource for the entire country.[195] In a case for organizational integration, personnel of these civil services worked in the center as well as states, alternating between the two in their careers. Third, to a great extent, states shared common, unifying attributes of religion, culture, and the same colonial past. Duly recognizing the difficulties of isolating culture as a conceptual category, this research design recognized and factored them.[196]

Duly considering the objectives and the difficulties, a comparison of states' capacities was found to be appropriate in a study of Indian emergency management. It promised to yield meaningful findings based on their differences, while controlling for most idiosyncratic factors. First, vulnerabilities of states varied according to geographical location and disaster types, such

[193] Kohli (1990) held that given the size, diversity and population of India, it was difficult to generalize at the level of nation.
[194] Mitra (2006) listed uniform application of laws of property, fundamental rights, Election Commission, and the Supreme Court, as common institutions that enabled comparison between states
[195] Comfort (1999)
[196] Adler (1983); Eglene and Dawes (2006)

as floods, cyclones, tsunamis and earthquakes. For example, landslides were more regular in mountainous regions whereas coastal states were threatened by cyclones and tsunamis. Second, state governments were first responders, and not the federal center or the local governments of PRIs. Different states had exhibited varying capacities in dealing with disasters.

A brief explanation about variation among state capacities emphasized the point. In a comparison of three devastating cyclones that struck three states in 1990, 1998 and 1999, fewer lives were lost in the first case due to better preparedness.[197] In 2003, in a comparison between floods in the states of Assam and Bihar, it was seen that the latter lost about seven times more lives though its affected population was only fifty percent more and had twice the cropped area.[198] A massive cyclone hit Andhra Pradesh in 1977 that killed more than 10,000 people and led to a far-reaching, capacity building exercise. Consequently, in 1979, 1983, 1987, 1990 and 1995, there were fewer deaths in that state, despite devastating cyclones.[199] However, neighboring Orissa took two more decades and a devastating super cyclone in 1999, before undertaking comprehensive capacity building. Variation among these states, directly lead to the question, why some were more capable.[200]

IV. The Dependent Variable and Selection of Cases

Prior to identifying explanatory factors, it was necessary to conclusively establish variation on the dependent variable, notwithstanding difficulties in identifying appropriate measures to indicate policy output.[201] This research had operationalized the dependent variable in terms of states' compliance of federal policies for capacity building in disaster management. It

[197] AIDMI (2005) South Asia Disasters.net. Special Issue12
[198] Government of India (2004a)
[199] Winchester (2000); AIDMI (2005) South Asia Disasters.net Special Issue12; Ramesh (2001)
[200] USAID mentioned great variation http://www.usaid.gov/in/our_work/strategy/strategy6.htm retrieved 22 June 2008
[201] Lester et al (1983)

was found worthwhile to examine if there were any other or better ways to establish a comparative template.

A common and intuitive approach would have suggested a comparison of losses of life and property in different states in the same time period, or in the same disaster. The objective seemed achievable by finding the state that suffered lesser damages. However, there were difficulties in adopting this seemingly simple and direct measure, as each disaster was unique in terms of agent type and the socio-economic characteristics of the impacted place.[202] Moreover, there was ample scope for confusion because it was not possible to accurately relate casualties to disasters, apart from conceptual differences between damages and losses.[203] Was it loss of life or damage to property that was to be considered a more accurate indicator of the abilities of governments? For example, the state of Bihar suffered fewer casualties in floods when compared to developed states like Gujarat and Maharashtra. Did it mean that it was doing the job more effectively or did it indicate an abject failure as people relied on themselves and not the state? There were further questions from these queries. Considering that vulnerable sections like aged and underprivileged sections were more at risk, there was no agreement on what constituted "disaster-related death, injury or disease".[204]

In terms of impact, it can be logically argued that injuries that disabled a person were potentially more damaging than loss of life, for they created additional liability on a continuing basis. Economic impact of disasters was another slippery slope. For a poor, landless villager, loss of his/her few belongings was more tragic and momentous than greater losses for the more resourceful. In addition, there was sizeable scope for ambiguity in computing indirect costs and

[202] Kreimer and Arnold (2000)
[203] Asian Development Bank, UN and World Bank (2005) defined damages as impact on assets, stock and property at replacement value, whereas losses included reduced income and increased expenditure.
[204] Bourque et al (2006), 99.

secondary effects.[205] Finally, accurate aggregation of details required greater resources, thereby weakening chances of a wider application. In short, there were serious methodological and practical difficulties in using loss of life, and damages to property as a basis for comparison. It was a very unstable platform that militated against a uniform basis, as the outcomes were as much a function of the disaster agent as a reflection of state capabilities, among other factors.

The question of formulating credible, comparative measures was also posed to respondents during field research.[206] They were asked for their opinion on which state was doing better in disaster management. The responses were interesting. One respondent suggested examining states' ability to use resources that were provided by the federal government. The central government met the requirements for immediate relief to victims, as well as emergency restoration of infrastructure in and connectivity with affected areas, through a Calamity Relief Fund (CRF) and National Calamity Contingency Fund (NCCF).[207] Some states were unable to spend their allocated amounts and failed to get additional resources.[208] According to this measure, states that had been able to use more of their allotted resources were to be considered more effective. However, there were conceptual difficulties in adopting such measure because financial devolution was as much a function of disaster assessment as a causal factor in state abilities.[209] Moreover, there had been allegations of partisan considerations playing a major role

[205] Kreimer and Arnold (2000); Mileti (1999)
[206] Interviews of politicians, bureaucrats and other respondents.
[207] Government of India (2004a)
[208] Government of India (2004a), showed that Bihar, Chattisgarh, Manipur and Mizoram had not received their full annual allocations under CRF during 2003-2004: Government of India (2006a), showed Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Tamil Nadu, Tripura and Uttar Pradesh had not received their full allocation during 2005-2006
[209] Economically underdeveloped states had lesser abilities to incur expenditure first and later claim reimbursement, said a senior bureaucrat. He also complained that allocation criteria under NCCF was opaque and allowed scope for partisan considerations.

in determining fiscal transfers.[210] Lastly, correlating higher percentage of expenditures with greater effectiveness did not factor pathologies of implementation, notably corruption and waste.

Another respondent equated state competencies in disaster management with their overall administrative efficiencies. Apart from the prospect of increasing scope of the study, the suggestion did not help in operationalizing the variable. Other proposals included subjective appreciation of administrative steps taken in preparation for disasters and quality of response. One bureaucratic respondent opined that the speed with which states compiled information about damages and submitted it to the federal center was indicative of their system's capabilities. Apart from the fact that documentation was an insufficient indicator of overall system effectiveness, all such documents were not in the public domain for authenticating claims. Yet another idea was to evaluate whether states had been able to integrate requirements of disaster management into their long-term development plans. While it directly addressed mitigation concerns, it was accepted that there was no framework to keep track of such developments. During field research it was found that none of the states had any mechanism to undertake monitoring of these reform measures. Hence, to avoid conceptual difficulties, this research adopted a different basis and focused on policy reform for disaster capacity building among states.

There was a logical correlation between system capacities and effectiveness outcomes. States that had developed greater capacities were in a better position to address disaster concerns. Their reform of disaster management policies and creation of capacities was central to effective policy outcomes. Hence, a measure of state capacities was seen to be a valid proxy for effectiveness. It provided a more robust measure of comparison than any after-the-event evaluation of specific measures. It offered a good picture of state abilities to deal with disasters

[210] In the US, scholars held that federal disaster declarations and fund allocations were guided by partisan considerations. Sylves (1996); Garrett and Sobel (2003)

in a generic manner, without losing focus on particular disaster events and types. While it had been argued that a conceptual determination of limits of state capacities was difficult,[211] it was possible to compare them among different states. Unlike comparison between independent nations where it could be impossible to determine limits of capacity building, the problem was manageable among states.

The framework for a comparison among states was less complicated and had few confounding factors. Moreover, the federal policy had already laid down clear parameters and objectives. It included strengthening organizational structures, augmenting financial capabilities, improving human resources, building technical competence, enhancing training, and raising performance standards.[212] It covered creation of disaster management authorities, new statutes, changing from a relief orientation to a comprehensive developmental outlook, setting up emergency support functions, developing fail-safe communications, and involving the local community as well as non-state actors. It was relevant to note that these measures also addressed weaknesses that had been identified even by the World Bank.[213]

Therefore, a suitable platform for comparing policy reform and capacity building was a program that incorporated these aspects. Hence, this research without formulating any new measures for the dependent variable, adopted them from the Government of India - United Nations Development Program (GOI-UNDP) Disaster Reduction Programme. The program was being implemented between 2002-2008, with assistance from United States Agency for

[211] Waugh (1999)
[212] The Gazette of India (2005); Government of India (2004b)
[213] World Bank's Independent Evaluation Group (2006b) listed 'Lessons not learned from Bank Disaster Projects'. The three most important lessons concerned (a) disaster management, preparedness and mitigation, (b) simple and flexible procurement that was fundamental to implementation, and (c) coordination between different units and existing agencies.

International Development (USAID), and European Union (EU). It was aimed at capacity building in seventeen disaster-prone states.[214]

Four of the seventeen states in the program were selected for this study. They were Bihar, Gujarat, Orissa and Tamil Nadu. These states were not selected randomly, considering the appropriateness of purposive sampling in qualitative research.[215] It was ensured that states' selection was not a case of selecting on the dependent variable,[216] while recognizing a wide range on its measures. All the selected states had a population of 35 million and above, an area more than 20 million square kilometers, and were considered to be major states.[217] First, they were in the Northern, Southern, Western and Eastern parts of the country, factoring variation on regional grounds by having states from all four corners of India.[218] Second they had experienced three of the most frequent disasters that had caused the greatest damage to life and property in India, cumulatively as well as on a per-event basis.[219] The three most frequent types of disasters had been floods, cyclones, and earthquakes.[220] The selected states had experience of floods and cyclones in northern and eastern India, cyclones and tsunami in the south, and earthquakes, cyclones and floods in the west. There was wide variation among these states on account of factors such as levels of development, record of Panchayati Raj Institutions along with the nature of the political party system. It was also important to note that they had different experiences of focusing events.

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[214] Government of India (2007b). The program was initially from 2002 to 2007, but was extended till 2008.
[215] King, Keohane and Verba (1994) noted that random selection may not be possible in qualitative research; Stallings (2006) recorded that disaster research mostly used purposive sampling.
[216] King, Keohane and Verba (1994); Geddes 1990
[217] India Today (2006)
[218] One of the considerations of Dreze and Sen (2002).
[219] Tsunamis had a higher per event casualty rate, but EM-DAT data revealed only two occurrences; Asian Development Bank/ UN/ World Bank (2005), recorded two tsunamis in the last hundred years, in the years 1945 and 2004.
[220] World Bank's Independent Evaluation Group (2006a). The three most common disasters that dominated all World Bank financing were floods, drought and fire.

Operationalizing the dependent variable also necessitated an evaluation of states, in absolute terms and relative to each other. For example, it was once noted that Orissa started its reform process way back in 1999, whereas Gujarat undertook the same only in 2001.[221] To base the comparison on more recent data, this research relied upon progress reports obtained from GOI-UNDP program.[222] Straightforward results were denied by too many program outputs, and inconsistent performances on different measures.[223] Moreover, up-to-date physical progress reports, till April 2008, were available only for Gujarat and Orissa. The other two, Tamil Nadu and Bihar, had provided them till September 2007. No state had performed consistently well or uniformly bad in all the measures.

A reasonably accurate picture was obtained by carefully sifting through different measures. Since information was obtained in April 2008, which was also the last year of the program, it was reasonable to assume that these reports indicated the final positions of each of the states, on a common scale. However, scholars had warned against using only one source of information.[224] So, for the purpose of establishing the dependent variable, this research also used interviews, field observations and anecdotal evidence in support of information available in the GOI-UNDP Disaster Reduction Program reports.

There was wide variation among the states as revealed in the financial and physical progress reports of the program. The physical progress report included structural and non-structural components of the capacity building program, and represented a paradigm shift from a relief orientation to disaster risk reduction. It reflected federal priorities that were being

[221] Sinha, Anil K. (2001)
[222] Government of India-United Nations Development Program 2002-2007 http://www.ndmindia.nic.in/EQProjects/goiundp2.0.pdf . Retrieved on 4 July 2008
[223] Data in the GOI-UNDP program was pass word protected and not available in the public domain at http://203.124.149.176/drmreport/index.aspx . However, officials involved in the program made it available.
[224] Phillips (1997) suggested triangulation by using documents and other means to establish veracity of information obtained in interviews.

suggested to states to adopt, and undertake capacity building. The financial performances of these states provided a ready basis of comparison of their allocations and expenditures. The financial statement of the GOI-UNDP-EU-USAID program till December 2007 provided broad indications about relative performances of the selected cases.

Table 2. Financial Statement of GOI-UNDP-USAID-EU Program[225]

Program State	**Funds Allocation to State**	**Total Funds Available**	**Actual Expenditure**	**% Expenditure**	**Latest Report**
	US $	**INR**	**INR***		
Bihar	3,322,618.00	***	2 2,010,164.55	36.72	**Dec-06**
Gujarat	3,601,200.00	47,027,519.00	5 8,636,154.00	55.49	**Dec-07**
Orissa	3,359,318.00	56,071,014.00	3 2,820,807.00	36.92	**Sep-07**
T.N.	2,833,664.00	30,175,392.20	3 9,748,167.00	56.85	**Dec-07**
Total	13,116,800.00	133,273,925.20	153,215,292.55		

* Indian Rupee-US Dollar conversion was 43.275 rupees to one dollar as on 3 July 2008
***Report for Bihar was not current and did not indicate total amount received. However, funds that had been transferred to Bihar included **$2,155,623.00** for the program and **Rs.16, 308,130.59 (INR)** for Human Resource Development and Equipment.

From the above, few inferences were readily possible, as it was seen that Bihar and Orissa were not prompt in submitting progress reports and that Gujarat and Tamil Nadu had been able to expend more resources. While it was not conclusive evidence of poor performance, it placed an additional onus on them to disprove such inferences. Any meaningful evaluation had to be based on other sources of information and the Physical Progress Report.[226]

[225] Data in the GOI-UNDP program was pass word protected and not available in the public domain at http://203.124.149.176/drmreport/index.aspx . However, officials involved in the program made it available
[226] Complete report of physical progress placed as Annexure I

Table 3. Physical Progress Report of GOI-UNDP-USAID-EU Program[227]

	Output Measure	Gujarat		Orissa		Bihar		Tamil Nadu	
		Total up to 04/08	**%**	**Total up to 04/08**	**%**	**Total up to 09/07**	**%**	**Total up to 09/07**	**%**
STATE LEVEL	State Disaster Management (DM) Policy, Act, Plan, and Authority created	4	100	3	75	2	50	3	75
	Redesignation of Relief Dept. as DM Dept.	0	0	1	100	0	0	1	100
	Emergency Operation Centers (EOCs) equipped	1	100	1	100	1	100	1	100
	Relief Code amended for DM	0	0	0	0	0	0	0	0
	Building Bye-laws amended	0	0	0	0	1	100	0	0
	Funds available for ongoing schemes for mitigation	1	100	0	0	0	0	1	100
	DM included in civil servants' training, schools& universities, Engg. and Arch. curricula	3	75	2	50	3	75	4	100
	DM in Admn. Trg. Institute	1	100	1	100	1	100	1	100
	Master Trainers trained	2645	294	370	123	352	176	236	472
	Manuals and SOPs finalized	54	77	23	100	10	67	8	80
	Mass media campaigns	14	-	1	100	1	4	8	80
DISTRICT LEVEL	District DM Committees (DDMCs) formed	14	100	16	100	14	100	6	100
	DDMC members trained	2509	295	446	112	1110	204	478	199
	Other officials trained	5358	367	423	121	1048	150	444	740
	District DM Plans finalized	14	100	16	100	14	100	6	100
	District EOCs equipped	14	100	16	100	14	100	6	100
	Emergency kits distributed	0	0	16	100	0	0	6	100
	PRI members trained in DM	1505	334	662	331	4279	611	165	138
	Architects and engineers trained	543	143	1363	146	1141	172	53	88
	Disaster Resistant Demo Units constructed	18	129	16	100	119	850	6	50
	Mock drills conducted	107	191	28	175	8	9	28	117
	District data entered in IDRN	14	100	16	100	14	100	6	100
	District DM Plans updated by DMCs	56	100	16	100	9	21	0	0

[227] Data in the GOI-UNDP program was pass word protected and not available in the public domain at http://203.124.149.176/drmreport/index.aspx . However, officials involved in the program provided it

Table 3. (Continued) Physical Progress Report of GOI-UNDP-USAID-EU Program[228]

BLOCK LEVEL	Block DM Committees (BDMC) formed	142	100	155	100	199	99	64	100
	BDMC members trained	8867	416	4466	288	8035	201	2643	206
	Other officials trained	12362	665	1581	102	3008	150	3045	476
	Block DM Plans finalized	142	100	155	100	156	78	56	88
	DM Team (DMT) members trained in First-aid	5187	346	4971	650	3156	158	1736	271
	Members trained in S & R	3121	1115	708	105	2104	105	1736	271
	PRI members trained in DM	9144	183	9459	158	28694	533	5272	275
	Village volunteers trained at Block level	8440	469	7016	117	16363	82	11919	186
	Masons trained	1284	128	2042	136	5118	49	26	2
	Mock drills conducted	296	208	62	40	69	5	111	58
	Plans updated by BDMCs	380	134	126	81	38	6	30	47
GP LEVEL	Gram Panchayat DMCs (GPDMCs) formed	0	0	3127	3210	3061	89	8565	327
	GPDMC members trained	0	0	52257	163	51664	76	14943	57
	GPDM Plans finalized	0	0	2816	88	2185	64	2173	83
	DM team members trained in First-aid	0	0	9870	102	3542	26	627	2
	DM team members trained in Search & Rescue	0	0	9406	98	3974	29	634	2
	Mock Drills conducted	0	0	502	25	545	3	771	15
VILLAGE LEVEL	Village DMCs (VDMCs) formed	11513	102	21542	93	9867	77	5204	153
	VDMC members trained	117155	103	257690	111	149872	117	4842	14
	VDM Plans finalized	10375	91	21107	91	6896	54	4649	137
	Village DMT members trained in First-aid	38404	175	54844	118	8090	31	21653	64
	Members trained in S & R	28167	141	45325	97	7619	30	18053	53
	Villages with Contingency funds for Emergency response	32	1	2305	10	1240	10	0	0
	Awareness meetings	14034	17	22574	97	9661	39	2521	74
	Mock Drills conducted	1681	40	4023	17	1586	2	1867	55
	Plans Updated by VDMC members	8846	212	6356	32	1193	3	2042	60

[228] Data in the GOI-UNDP program was pass word protected and not available in the public domain at http://203.124.149.176/drmreport/index.aspx . However, officials involved in the program provided it

From a close examination of the above measures, it was apparent that some were more important than the numerous items that involved training. Hence, they were separated from the rest for more consistent comparisons. The capacity building program was undertaken at different tiers of governance, such as the state, district, block, gram panchayat, and village levels. This research found it fruitful to stick to the same rubric for comparing the different states.

At the state level, Gujarat showed overall superiority being the only one that had a Disaster Management Policy, formulated a plan, enacted a state-specific legislation, and set up a Disaster Mitigation Authority. While the other three had adopted the 2005 federal legislation, Gujarat enacted its own Disaster Management Act long before, in 2003. And along with Orissa, it had set up the Gujarat State Disaster Management Authority (GSDMA), a specialized agency for comprehensive disaster management. In the matter of preparing standard operating procedures (SOPs) and manuals for different hazards, Gujarat covered more hazards, even though it fell behind Tamil Nadu in percentage terms. Importantly, it was the only other state, apart from Tamil Nadu, to report that it had financial resources for taking up developmental schemes that addressed mitigation needs. But on the other hand, it was one of the two states, along with Bihar, which had not redesignated the nodal department as Disaster Management department.[229]

Orissa had also redesignated Relief Department and finalized all SOPs and manuals in percentage terms. Moreover, it was the first state in the county to set up Orissa State Mitigation Development Authority (OSDMA) in 1999.[230] Specialized agencies were regarded to be indicative of greater professionalization in disaster management, as they performed very useful

[229] Gujarat officials claimed that their Government's policy to restrict number of departments prevented the creation of a new department for Disaster Management. There was no explanation in Bihar.
[230] Officials in Orissa also informed that they were planning to change its name to Orissa State Disaster Management Authority.

functions of constant interfacing with hazard inputs and scientific opinions.[231] Thereby, it seemed to score higher than Tamil Nadu. As far as the issue of funds was concerned, respondents revealed during interviews that there was no dearth of resources. Tamil Nadu, though ahead in some measures, had not set up a disaster management authority. Moreover, its reporting was not accurate since it mentioned having formed such an agency, which was not validated during field research.[232] Moreover, it was found that main focus in Tamil Nadu was on recovery and reconstruction. On the whole, Gujarat appeared to be ahead of the rest at this rung. Orissa was next, with a specialized agency for all-phases comprehensive disaster management, followed by Tamil Nadu and Bihar.

At the district level, the picture was mixed. Gujarat and Orissa were ahead with respect to updating district level plans, in conducting mock drills, and in distributing emergency kits. Tamil Nadu performed poorly in two measures, alongside a similar number from Bihar. Despite distributing most percentage of emergency kits, along with Orissa, Tamil Nadu had constructed the least number of disaster resistant demonstration units and had updated none of its district level plans. It was also a poor third in conducting mock drills. Bihar, apart from constructing the highest number of demonstration units, figured at the bottom half in all other measures

The same performance was repeated by Bihar at the next level, i.e. the Block level. It consistently figured at the end, on all non-training measures. Gujarat again figured at the top in preparation of plans, updating them and conducting mock drills. Orissa was also ahead of Tamil Nadu in finalizing block level plans and updating them. At the Gram Panchayat level, Gujarat did not register any progress because it took up village-level capacity building, as it did not function at gram panchayat level. Among the rest, the order was the same, with Orissa leading

[231] Comfort (1988); Waugh (1996)
[232] "More Powers for Local Bodies Mooted." The Hindu (Chennai) 29 December 2007. It carried a news item in which senior functionaries were reported saying that a State Disaster Management Authority would be formed soon.

Tamil Nadu and Bihar. Orissa was ahead in preparing plans and conducting mock drills. Only in the matter of forming disaster management committees, Tamil Nadu reported a staggering number more than its target, whereas Bihar trailed on all counts. Finally, at the lowest rung of villages, it was Tamil Nadu that performed ahead of the rest. It formed more committees, finalized more plans, and conducted more mock drills. Orissa was ahead of Gujarat in having more sensitization meetings and having more villages with contingency funds for emergency response. Bihar again was at the bottom, although it had the highest number of sensitization meetings, but with poor performance in all other measures.

At three levels, state, district and block, it was Gujarat, followed by Orissa, Tamil Nadu and Bihar. At the Gram Panchayat level, it was Orissa that led the way, with Tamil Nadu leading at village level. Of the different tiers of governance, it needed to be remembered that state and district levels were the most important in disaster management. Administration had retained a top-down orientation in India with states at the key policy making level and the district being its most important implementing echelon. Therefore, states that had enhanced capacities at these levels, such as Gujarat and Orissa were considered to have performed better. Thus, on measures of most non-training items of the program, the order of performance was Gujarat followed by Orissa and Tamil Nadu, with Bihar at the bottom.

Skill enhancement measures were separated to facilitate comparison. Training, while being an important capacity enhancer, was not an accurate indicator without common evaluation standards. And in this case, states undertook training without a common or uniform agenda or evaluation mechanism. Its efficacy was not clear and it made for a very tenuous measuring rod due to non-uniform content, length and quality of instruction. However, for the record, it was noted that even in these counts, Gujarat was ahead in most, followed by Tamil Nadu, Orissa and

Bihar, in that order. Yet, due to lack of uniformity on a number of counts, progress on these measures was not considered.

The analysis presented above was open to criticism on the grounds that some measures had been considered more important than others. To obviate such challenges, it was imperative to present more arguments and evidence in support. First, this research recognized capacity building at the level of states to be more important since it was noted earlier that that they were central to disaster policies. Field research revealed that institutional arrangements of setting up disaster management authorities/agencies played a very crucial role in the domain. Gujarat was ahead in most parameters, and Orissa appeared to have overtaken Tamil Nadu for second spot. The last-referred and Bihar, without a specialized agency for all hazards, appeared handicapped. The most important agency dealing with disaster management in Tamil Nadu was the Office for Tsunami Relief and Rehabilitation. Its focus was on post-tsunami reconstruction, making it overwhelmingly concerned about one hazard, rather than comprehensive capacity building.

In an earlier section, it was mentioned that this research sought empirical support for document-based findings with information obtained from interviews, anecdotal evidence and field observations. Hence, interviews were discussed next. There was a mixed response from respondents in central ministries, federal agencies and non-governmental agencies at the all-India level. Most respondents occupied senior positions in policy making and implementation in disaster management. Yet, when asked to make a relative evaluation of these four states, some refused due to concerns for political correctness in a federal, democratic polity. Some others believed it was not possible. But there were a few, who explained their assessment. In their opinion, it was Gujarat leading Orissa, Tamil Nadu and Bihar, with regard to progress in capacity building. In the states themselves, there were candid admissions of weaknesses in Bihar and

Tamil Nadu. Important political and administrative respondents and volunteers in Bihar admitted to serious flaws in implementation of the program. In Tamil Nadu, too, shortcomings of a narrow focus as well as lack of community empowerment were admitted.

A second important source was anecdotal evidence about utilization of capacities in these states. During the program period, there were serious emergencies in Surat (Gujarat), Kandhamal (Orissa), and Nagapattinam (Tamil Nadu). While it was floods in the first case, communal riots in the second, it was the 2004 tsunami in the third. After heavy floods in 2007 in Surat district (Gujarat), large parts of the district needed a massive clean up operation for which heavy machinery was required. Using the State Disaster Resource Network (SDRN), officials were able to obtain required equipment, and rapidly cleared the enormous amount of silt and sludge.[233] Similarly, Kandhamal district (Orissa) was cut off from state headquarters by rioting mobs in December 2007.[234] However, deployment of a specialized Orissa Disaster Rapid Action Force (ODRAF) enabled communication to be restored in a matter of hours, and reinforcements reached the affected locations. In contrast, there were places in Nagapattinam (Tamil Nadu) that were cut off after the Indian Ocean tsunami in 2004. It took three to four days to clear debris and restore communications. Local authorities did not use the India Disaster Resource Network (IDRN), an electronic database, for locating logistic support.[235]

Field observations also provided basis for supporting inferences about relative capacities. An important pattern that emerged during field research was that Gujarat had adopted a more comprehensive approach, by factoring manmade hazards too. It displayed remarkable sensitivity

[233] SDRN was an electronic database maintained by the state. Information gathered from interviews in Gujarat revealed that officials were able to locate about 1500 numbers of heavy earthmoving equipment, by accessing the SDRN.
[234] Information gathered from interviews in Orissa.
[235] Information gathered from interviews in Tamil Nadu. Officials at field level dealing with disaster management admitted unfamiliarity with IDRN.

towards terrorism, communal riots and industrial accidents. It had established a state wide Disaster Resource network that was made available to all panchayat headquarters through a Wide Area Network. The disaster management agency in Orissa also showed greater sensitivity towards different disasters, including industrial dangers and other manmade hazards. It had set up the ODRAF, on the lines of a specialized federal force to deal with disaster rescue and relief. The ODRAF was a very valuable resource that proved its utility in different disaster situations, of natural and human causation. On the other hand, Tamil Nadu appeared to be limited by its focus on tsunamis, for most part, and cyclones to some extent. Bihar was the weakest, with neither structural nor non-structural capacities for an all-hazards disaster management.

Bihar, yet, was first only in terms of construction of disaster resistant demonstration units. However, ground level interaction with masons and villagers revealed a greater awareness and adoption of seismic resistant techniques in Gujarat, especially in the district of Kutch. Gujarat had also undertaken innovative measures such as home insurance and micro zoning, apart from retrofitting public buildings on a massive scale. For the record, Tamil Nadu also utilized insurance as a policy tool in post-tsunami construction.[236] In conclusion, on the basis of progress report of the GOI-UNDP program, information supplied by respondents, opinions formed during field research and anecdotal evidence, the capacities of the states, more to less, were in the order of Gujarat, Orissa, Tamil Nadu and Bihar.

Having established the dependent variable, the next couple of chapters examined its variation in terms of explanatory factors. In an earlier chapter, the role of economic resources,[237]

[236] Interview with senior officials in Tamil Nadu
[237] Lester et al (1983); Williams and Matheny (1984); World Bank (1997); Vogel (2001); Albala-Bertrand (2006); Mileti (1983); McEntire (1997); McEntire and Mathis training.fema.gov/EMIWeb/edu/docs/EMT/Chapter%20-%20**Comparative**%20**Politics**%20and%20**Disasters**.doc retrieved 8 July 2008

organizational learning from focusing events,[238] institutional development in the form of decentralized organizations,[239] and rational choice explanations based on the nature of the political party system[240] were noted as important variables. They were used to examine why some states invested in building robust organizations, and were able to establish better procedures and policies that lead to greater capacities.[241]

V. Data Collection Methods

Information was obtained mostly from reports of government, agencies set up by government, and UNDP reports. Material from other sources such as national and international agencies such as National Institute of Disaster Management (NIDM), National Disaster Management Authority (NDMA), All India Disaster Management Institute (AIDMI), USAID, International Strategy for Disaster Reduction (ISDR), Action Aid and others had also been used where available. The public domain contained reliable information on economic development of these states. Similarly, data provided governments and available with other sources described the extent of democratic decentralization in different states. Reports of the Election Commission of India were used to explain party fragmentation in these states. Feedback on experience of focusing events was based on documentary evidence and on interpersonal communication. Being a qualitative study, it relied heavily on interviews[242] and questionnaires. Direct interaction with political leaders and bureaucrats at federal, provincial, and local levels provided important

[238] Nice and Grosse (2001)
[239] Lester et al (1983); March and Olsen (1984); Green (2002); World Bank (1997); Farazmand (2001); Sapat (2001); May (1997)
[240] Geddes (1994); Lester et al (1983)
[241] Literature noted several attempts to identify causal factors. Farazmand (2001) mentioned knowledge, leadership, commitment and creativity; Sapat (2001) in a comparative study of American states, identified problem severity, capacity of officials, interest groups and elite commitment; Schroeder (2001) noted leadership
[242] Interviews had always been used. Robert Dahl (1961) admitted to having received very important information through interviews; Stallings (1997) noted that the survey method was common in disaster research. In a later work (2006) he observed that confidence in research increased with number of interviews; Phillips (1997); Bourque, Shoaf and Nguyen (1997) noted that interviews were always encouraged

information about perceptions and causal linkages. A total of one hundred and seventy nine respondents took part in the interviews in the national capital and the states. Their responses provided a "coherent account of causality" to delineate causal processes.[243] These subjective perceptions proved useful in explaining the correlation between the dependent and explanatory variables. They supplemented written material and also provided insights into causal mechanisms.

Disaster research literature had noted that there couldn't be a truly random selection process, especially in the choice of cases. It was also true of selection of districts, blocks as well as respondents. In this research, local level leaders and government employees were interviewed at village and block levels in four districts in each of the states. At the district level too, responses were similarly obtained. And the process was repeated at state and federal levels. On the whole, the range of respondents covered the different stakeholders in the domain. They included policy making politicians, government employees involved in policy making as well as implementation at various levels, locally elected politicians and community leaders as well members of non-governmental agencies. Care was taken to interact with politicians of different parties at state and local levels. Similarly, non-governmental agencies included those that were favorably disposed towards government as well as those that were not. All reasonable and prudent steps were taken for obtaining reliable and credible information that explained the relationships between the variables.

[243] King, Keohane and Verba (1994), 85.

Chapter 3: Democratic Decentralized Institutions and Disaster Management

Over the past few decades, democratic decentralization had become an important agenda for international bodies and the academic world.[244] Studies had examined its relationship with governance. Role of local, self-governing, decentralized institutions was considered a significant factor, with consequences for the delivery of public goods. The subject's growing scholarship had created scope for its application in the disaster domain. It was theoretically opportune to examine democratic decentralization for its role in policy outcomes. Methodologically, decentralized institutions were a stable platform for comparison of impact on governance reforms in the domain.

A well known adage was that "all disasters are local". It was also commonly believed that 'first-responders' had an important role in dealing with them.[245] Hence, this chapter examined whether greater decentralization, in terms of functions, financial resources and trained functionaries created capacities and flexibility to deal with disasters more effectively. The proposition that was tested was whether local, self-governing, decentralized levels of government had a significant and systematic impact on the effectiveness of policy outcomes in Indian disaster management.

In federal India, democratically decentralized bodies were called Panchayati Raj Institutions (PRIs), and were situated below the level of provinces. This research considered them as decentralized institutions rather than states, since the latter were well established levels of governance, and since they were already the basic unit of analysis in the dependent variable. It was hypothesized that local governance institution had inherent strengths arising from

[244] Cheema and Rondinelli (1983); Aziz and Arnold (1996); Cohen and Peterson (1999); Shah and Thompson (2004); Ahmad et al (2005); Hankla (2007)
[245] Waugh and Sylves (1996), p. 48

information, resources and accountability, which enabled them to make significant and critical provision of public goods in this domain. The evidence showed that PRIs played a signal role in outcomes, to the extent that they were involved. They enhanced overall capacities in the state, by adding local resources that were brought to the table. PRI leaders were not only proud to mention the extent of their involvement but also exuded confidence at discharging higher responsibilities. Second, greater decentralization also translated, partly, into greater responsibilities and in disaster management, making it easier to infer a relationship of accountability. A third notable aspect was a broad correlation between measures of decentralization and the dependent variable, with more decentralized states performing better. To the extent that they did discharge such roles, the results were superior. However, decentralization was controlled and limited. Consequently, these institutions displayed little autonomy or initiative and preferred to act on state directives. Hence, it was concluded that there was no evidence of a positive impact on disaster management outcomes because their capacities and role were severely limited. Local self-governments in India had a very circumscribed role and their independent contribution in disaster management proved insignificant to overall capabilities. While the possibilities of a positive relationship were not denied, information obtained in the field provided no conclusive evidence.

The plan of this chapter is thus. The first section reviews literature on democratic decentralization and its impact on delivery of public goods, before studying its role in disaster management. In general, despite mixed opinion on its efficacy in delivery of public goods, literature on disaster management had been more positive about their relationship. Before testing the hypothesis, it was imperative to know the Indian local self-government system, known as

Panchayati Raj Institutions (PRIs).[246] Hence, the second section briefly discusses statutory provisions in their evolution as well as key developments in selected states. Thereafter, the third part deals with variation on measures of democratic decentralization, among selected states. The fourth section evaluates evidence obtained in field research. The last segment analyses the findings and examines whether any cause-and-effect relationship exists, in an effort at process tracing.[247]

I. Decentralization and Public Goods in Disaster Management

In academic and practitioner domains, there had been a visible trend to explore the relationship between decentralization and good governance. Multilateral bodies like the World Bank or international aid agencies, such as USAID for example, advocated greater adoption of decentralization.[248] The former was seen as an answer to the many ills that characterized centralized administration as well as bureaucratization, apart from serving the causes of equity and efficiency.[249] However, results were not unequivocal about consequences. There had been mixed results about a positive correlation between decentralization and economic growth,[250] and it was noted that democratization or decentralization per se, did not lead to economic development or equitable distribution of resources.[251]

[246] Mathew (2000). It originated from the word "panch" to indicate an assembly of five elders for looking after village affairs.
[247] King, Keohane and Verba (1994)
[248] Cohen and Peterson (1999); Jayal (2003) noted that IMF, World Bank, European Bank of Reconstruction and Development, OAU, OECD and the Commonwealth had emphasized good governance
[249] Mathur, P.C. (1974); Cohen and Peterson (1999); Keefer and Khemani (2005); Besley, Pande and Rao (2007); Aziz and Arnold (1996); Khemani (2004); Hankla (2007); Cheema and Rondinelli (2007); Cheema and Rondinelli (1983); De Mello (2000)
[250] Davoodi and Zou (1998); Beck, Clarke and Groff (2001); Keefer and Khemani (2005); Narain (1969); Cheema and Rondinelli (2007)
[251] Keefer and Khemani (2005) found that empirical research had not borne out a correlation between the two; Przeworski et al (2000) in their wide ranging statistical studies of 141 countries came to the conclusion that democracy did not necessarily lead to development.

Decentralization was a broad overarching concept that covered many important perspectives.[252] Its recent theoretical lineage could be traced to Dahl and his postulates on pluralistic participation.[253] It was seen as an alternative to top-down governance, and a better option than bureaucratic reform.[254] Its strong point was accountability, especially in light of bureaucratic behavior that seemed impervious to it.[255] However, definitions of democratic decentralization had been a matter of concern and many avoided the issue by focusing on its major features. A working definition of the concept would be a transfer of authority to lower levels of governance within a nation. The direction of change was both vertical and horizontal, downwards as well as outwards, with the locus being the federal center and/or the states. Decentralization has been discussed largely in the context of a unitary state, with authority being transferred to levels below the central government. However, federal polities had also adopted this framework, as in the case of India and the United States, where decentralization took place below the level of provinces.

Primarily, scholars had dealt with forms of decentralization, reasons for transfer of functions, and their impact.[256] It was seen that there were numerous forms, from devolving political authority to a lower level in unitary governments, to transferring it below provincial levels in federal countries. Different philosophical and theoretical questions cropped up, as scholars tried to bring coherence to the wide range of transfers. For example, some approached it with a view to locate its primary objective and described it in terms of spatial, political, market and administrative decentralization.[257] Others classified them as deconcentration of functions,

[252] Shah and Thompson (2004)
[253] Dahl (1971)
[254] Mookherjee (2004)
[255] Mookherjee (2004)
[256] Tiebout (1956); Oates (1972); Manor (1999); Cohen and Peterson (1999); Aziz and Arnold (1996); Mookherjee (2004)**;** Hankla (2007); Cheema and Rondinelli (1983)
[257] Cohen and Peterson (1999)

delegation of authority, devolution of power and resources, and transfer of functions, and as deconcentration or administrative decentralization, financial devolution or fiscal decentralization, and local self-government or democratic decentralization.[258]

From the literature on the subject, this research chose the categories of political, fiscal and administrative decentralization.[259] The distinguishing characteristic of political decentralization was that local representatives were elected. The fiscal dimensions of decentralization themselves covered a wide range and included transfer of expenditure powers, assignment of taxes, intergovernmental fiscal transfers, and budgeting and monitoring mechanisms for fiscal flows.[260] Literature had noted gains in efficiency and equity in the process of fiscal decentralization.[261] Administrative decentralization, on the other hand, included deconcentration, delegation or devolution. There was, however, considerable overlap that defeated attempts at pigeonholing all of them into exclusive, watertight classifications. Mere political decentralization without the other two was a limited and weakened system since the higher level usually claimed better sources of revenue.[262] Administrative decentralization placed a question mark on the factor of accountability if implemented alone. On the other hand, fiscal decentralization alone was not feasible, since it appeared to amount to patronage. The interconnections between the three forms were clear when there were calls for making decentralization more effective, by proper sequencing of the three.[263]

Advocates of democratic decentralization listed several advantages. The discussion was mostly centered, although not limited to, greater effectiveness due to better information, more

[258] Cheema and Rondinelli (1983); Manor (1999)
[259] This categorization had been adopted from Ahmad et al (2005); Manor (1999). It was also consistent with a discussion on the Indian states, where the objectives of decentralization were identified in terms of functions, finances and functionaries. Mathew (2000)
[260] Ahmad et al (2005)
[261] Govinda Rao (2002); Khemani (2004)
[262] Hankla (2007); Khemani (2004)
[263] Ahmad et al (2005)

accountability, and greater pressure to perform. On the other hand, detractors pointed out that these institutions were vulnerable to elite capture, unhealthy competitiveness, corruption and fissiparous tendencies.[264] A fundamental assumption in all these arguments was that elected representatives were in a position to control the bureaucracy and determine its output. Concerns of implementation had been subsumed to the political leadership's ability to frame policy and achieve better results.

It had been said that greater information channels provided accurate and speedier information about resources for an appropriate match with problems or requirements.[265] In its absence, central allocations, unaware of local specificities, faced the possibilities of incurring expenditure on inapplicable and ineligible segments.[266] Tiebout in a pioneering work laid the scholarly foundation for fiscal decentralization. He held that full mobility of local voters ensured that local resources were used in a manner that best matched local preferences.[267] Oates developed it further by explaining that uniformity imposed heavy costs, especially if there was great heterogeneity among communities and regions.[268] Decentralization was likely to make better use of resources since planning was done at grassroots with full knowledge of field conditions.[269] It was proposed that since people moved to locations that had their ideal government, there was likelihood of competition among local governments to offer appropriate public policies to attract capital and labor.[270]

[264] Tanzi (2002); Manor (1999); Rodden, Eskeland and Litvack (2003); Sheth (2000); Mathew (2000); Mathew (1996); Cheema and Rondinelli (2007)
[265] Davoodi and Zou (1998); Cheema and Rondinelli (2007); Aziz and Arnold (1996)
[266] Keefer and Khemani (2005)
[267] Tiebout (1956)
[268] Lockwood (2002)
[269] Oates (1972)
[270] Weingast (1995)

The role of community in governance, more so in disaster management, was clearly recognized,[271] and local governments were seen as appropriate platforms to build relationships with it. Consequently, grassroots planning was able to factor local resources in a better manner. However, there was a structural bias in democratic decentralization, with emphasis on institutional design and technical capacity of its administration, and not as much on its relationship with its constituents,[272] thus leaving scope for Community Based Organizations (CBOs). Importantly, building partnerships with local agencies was a major part of agenda of IDNDR.[273] The other significant advantage of decentralization was the proximity of elected representatives to constituents, and greater information about them, which was seen to increase accountability.[274] Elected representatives and their constituents lived in the same area, and made it easier for the latter to pressure the former for better services. Finally, it was also opined that in all cases where constituents had greater interest in local issues and elections, decentralization exhibited a positive correlation with delivery of public goods.[275]

At the same time, literature also sounded a warning against regarding decentralization as an unmitigated blessing, as results were mixed.[276] As found in empirical studies, its success was predicated on a number of factors.[277] It was observed that it could also lead to detioration of public goods delivery. There was a great danger of these bodies being captured by local elites and powerful sections of society.[278] However, it was also held that there was no basis for

[271] Drabek and McEntire (2003); Ozerdem and Jacoby (2006)
[272] Krishna (2003)
[273] ISDR listed principles of the Yokohama Message. Ensuring participation from community to national level has been spelt out. http://www.unisdr.org/eng/about_isdr/bd-yokohama-strat-eng.htm#princ Retrieved 28 November 2008; Ozerdem and Jacoby (2006)
[274] Ahmad et al (2005)
[275] Keefer and Khemani (2005)
[276] Ahmad et al (2005), found that accountability relationships were central in delivery of public services
[277] Rodden, Eskeland and Litvack (2003). Introductory chapter had an extensive literature review
[278] Shah and Thompson (2004); Interviews with senior civil servants confirmed fears to a great degree.

generalizations on capture by local elites, in all circumstances.[279] Democratic decentralization was also heavily dependent upon the availability of trained personnel.[280] Corruption was another major concern. Due to capture by local powerful forces, and insufficient and ineffective oversight mechanisms, there was a strong possibility of increased corruption. Some studies found a greater correlation with corruption in a federal arrangement.[281] However, some empirical studies noted a negative correlation between corruption and decentralization.[282] In the context of India, field level perceptions revealed that greater awareness of state responsibilities was a dampener to bribe-seeking behavior.[283]

Decentralized institutions did not appear to provide any assurance of optimal outcomes. It was observed that fiscal transfers were determined by political considerations to a great extent.[284] On the other hand, utilization of transferred funds by local bodies was not without problems. Local bodies displayed a tendency for irresponsible, fiscal behavior since they knew that higher levels of government were most likely to bail them out.[285] It was also widely noted that when local governments depended excessively on financial transfers from higher levels of government, there was erosion of local accountability, especially in developing countries.[286] Another unfortunate consequence was a reluctance of local leaders to take necessary, but unpopular, decisions such as levying taxes to raise resources.[287] Local bodies preferred to depend on fiscal transfers rather than exercise their powers of taxation. Consequently, it limited their ability to

[279] Bardhan and Mookherjee (1999)
[280] Cohen and Peterson (1999)
[281] Treisman (2000)
[282] Fisman and Gatti (2002)
[283] Widmalm (2005)
[284] Khemani (2004). It was noted that higher tiers of government had more and better sources of revenue. Hankla (2007); Mishra (1987) noted a total inadequacy of funds at local levels in India
[285] De Mello (2000); Khemani (2004)
[286] Khemani (2004)
[287] Mitchison (2003) in a study of Uganda, noted the narrow tax base of local institutions and the difficulties they faced in meeting costs of programs

make credible promises or challenges during elections. Further, in relation to provision of a broad range of social services, there were problems in making electoral promises of specific and achievable goals.[288] These findings were of concern to disaster research due to their impact on policy outcomes.

In the domain of disaster management, conventional wisdom held local institutions to be significant factors. The oft-repeated 'all disasters are local' outlook explained it. First responders were fire, medical and police officials around the world. Even in developing countries like India, it was police and other officials, who were first responders, although they did not work for the local bodies.[289] The aim of emergency management was to take appropriate steps to prevent loss of life and property and to provide for basic human needs during a disaster.[290] Consequently, there was a heavy cost to pay in case of failure to act properly, as well as reward in case of a job well done.[291] Local governments and officials had important responsibilities in disaster management, and were often vested with legal authority or political responsibility.[292] As a result, there were political costs with serious electoral repercussions.[293] It was also held that effectiveness of DM depended on community demands.[294]

It was also noted that poor information dissemination lead to local officials becoming aware of imperatives of central plans and policies on disaster management, but without knowing

[288] Keefer and Khemani (2005). In disaster domain, it was difficult to make promises for a variety of reasons. First, there was no specific and substantial information. Second, it was equally difficult to correlate changes with specific policies as gestation periods were long

[289] A senior police officer responded that policemen were usually the first to reach the spot because citizens' complaints reached them first.

[290] NAPA (1997)

[291] Waugh (2006); Tierney (2006) reached a different conclusion. She found that the racial divide was reinforced after Hurricane Katrina

[292] Waugh and Sylves (1996)

[293] Sylves (1996); Tierney (2006); Waugh (2006); Arceneaux and Stein (2006); Brox (2006); Arceneaux and Stein (2006)

[294] Interview with a senior administrative official in India.

the underlying rationale.[295] An immediate reason for local officials' reluctance may be due to different priorities coupled with scant resources at their levels.[296] Moreover, disaster management policies involved taking unpleasant and unpopular decisions. Whether it was implementing re-zoning, introducing new building codes, or changing lifestyles, disaster management imposed restrictions on behavior and choices. However, despite the many weaknesses, there was recognition of their strengths and local bodies were seen acquiring greater capacities for tackling disasters.[297]

II. Democratic Decentralization in India

Early studies in India had observed a strong need for local self-government because of failure of centralized planning and absence of public participation.[298] It was a considered to be a remedy against weaknesses in central plans, with local governments being able to perform more efficiently and with greater economy.[299] Yet, local self-governments, known as Panchayati Raj Institutions (PRIs), lacked a constitutional mandate till 1992. Local self-government in India was a three-tier structure below the states, with Gram Panchayat (village panchayat) at the lowest level, Block Panchayat at the intermediate, and Zila Parishad at the district levels.[300]

The lowest unit of decentralization was the Gram Panchayat (GP). The population of a notified panchayat was about 2400 in two to three villages. It had executive and deliberative powers.[301] The elected head of this body was called Sarpanch.[302] Ward members or "panch"es were the others elected at this level. The Gram Sabha (village body) was the general body of all

[295] Waugh (2000)
[296] Hankla (2007); Mishra (1987)
[297] Waugh (1996)
[298] Seshadri and Reddy (1974); Narain (1969)
[299] Mathur, P.C. (1974)
[300] A distinctive feature of PRIs in India was the wide variation in organization structures, nomenclature, processes, and functions. Mathew (1996); Mathew (2000)
[301] Mathew (2000)
[302] Nomenclature varied and they were also called Mukhiya, or GP president in some states.

adult citizens of the GP. There was wide variation in the role and responsibilities of the Gram Sabha, with some states assigning the responsibilities of approving budgets and the beneficiaries of targeted programs, and other states providing them with only oversight powers.

At the intermediate level, a group of Gram Panchayats (GPs) were organized into a Panchayat Samiti (PS).[303] There was great variation at this level. While some states had organized it to be coterminous with a Community Development Block (CDP), others constituted it differently. It was headed by the Block President, also called Pramukh in some states. The Panchayat Samiti comprised of directly elected members as well as sarpanches who were ex-officio members. Thereafter, a group of Block Panchayats formed the Zila Parishad (ZP), which was coterminous with a territorial district. The latter, as noted earlier, was the highest level of field administration of a state. The ZP chairman or president, as he/she was called in different states, headed this body which also had directly elected members. Election processes to these three tiers of local self-government were not uniform in the states, with a mix of direct and indirect elections at intermediate and top levels.

Initially, democratic decentralization was mentioned only as a normative goal of the Indian democratic state. Consequently, it was left to states to decide the powers and functions that were to be devolved to PRIs. Therefore, while some states actively encouraged democratic decentralization, a majority of them paid lip service. Some states like Karnataka, West Bengal, Andhra Pradesh and Kerala had devolved more than the rest.[304] This changed in 1992-93. The 73rd and 74th amendments to the Indian constitution identified twenty nine subjects that were to be transferred to decentralized self-government institutions. As the Minister of Panchayati Raj explained, these amendments laid down the law for the entire country in the matter of

[303] Also called Block Panchayat, Taluka Panchayat, Panchayat Union in some states
[304] Mathew (2006); Mathew (2000)

- "Constitution of panchayats at the three levels of 'village', 'intermediate' and 'district' (except that the intermediate level may be dispensed with, in States with a population of under 20 lakhs);
- Regular five-year elections to these Panchayats, with elections within six months if a Panchayat is dissolved for any reason whatsoever;
- Stipulated reservations for women and historically disadvantaged sections of society such as Scheduled Castes and Scheduled Tribes, including SC/ST women (and an enabling provision for reservations in favour of the Other Backwards Classes);
- Constitution of District Planning Committees (DPCs) through the election of at least four-fifths of the members by, from and amongst the elected members of the district Panchayat and the Municipalities in each district. The DPC is required to 'consolidate' the development plans prepared at each of the three levels of Panchayats and the Municipalities within the district into a 'draft district development plan' which is then to be forwarded to the state government. The remaining one-fifth of the DPC members are to be nominated by the state and could include Members of Parliament (MPs), Members of Legislative Assemblies (MLAs) as well as civil society experts who could assist in the planning process with their technical expertise."[305]

The constitutional amendments created an imperative for all states to implement decentralization. The federal ministry of Panchayati Raj undertook an "activity mapping" exercise to keep track of steps taken in different states in compliance.[306] Transfer of financial sources was seen as critical for success and so the amendment mandated establishment of State

[305] Government of India (2006b)
[306] Government of India (2006b)

Finance Commissions (SFC), for recommending fiscal transfers. The SFCs were expected to propose the mechanism for providing financial resources to the PRIs. However, the State Legislature had discretion to accept, reject or modify its recommendations.[307] The federal policy also urged the transfer of functionaries and powers to the local bodies.[308]

III. Decentralization among States

In the pre-73rd amendment period, when it was left to states' discretion, there was great variation in their policies concerning local self-government. The constitutional amendments were supposed to change that, albeit with a modicum of discretion still remaining. Yet as the record showed, uneven progress was noted even thereafter.[309] Crucial to this study was recognition of differences in terms of devolved functions, finances and functionaries. They indicated the extent to which states had decentralized.

The important measures for evaluating decentralization had been regular conduct of elections, devolution of functions, finances, and functionaries. A great deal of emphasis had been placed by this research, on a decennial review of PRIs that was undertaken by the Institute of Social Studies in New Delhi. The last study was completed in 2000.[310] Although dated, it gave a fairly good picture, although there was no specific relative evaluation of states. On the basis of information about the selected states, there was consensus that Gujarat was the most, and Bihar the least decentralized among them. Tamil Nadu and Orissa figured between the two, and there was reasonable evidence that the former was more decentralized.

[307] Mathew (2000)
[308] Government of India (2006b)
[309] World Bank (2000)
[310] Mathew (2000)

Gujarat was the only one to have held regular elections to PRIs, without any interruption. They were postponed only for two years in 1975 and 1986.[311] Equally important, these bodies were rarely superceded, and the few times it happened were due to procedural failures.[312] Gujarat exemplified a high sense of responsiveness towards these institutions by amending the Panchayat Act forty five times, in response to local requirements and demands. It was reportedly taking steps to transferring the twenty-nine subjects to PRIs, with most development programmes already being implemented through them.[313]

PRIs in Gujarat had traditionally received far greater revenues than in other states. In the pre-1992 period, it was reported that the state had transferred about 25% of its revenues to various panchayats institutions and in 1977-78, their per capita income was Rs. 9.0 (nine rupees).[314] The comparable amounts in other states were, for example, Re. 0.78 in Uttar Pradesh and Re.1.25 in Orissa. It was, nevertheless, evident that few PRIs in Gujarat were interested in raising their own revenues through taxes and fees, and were reluctant to exercise their powers. Therefore, it was estimated that about 98% of funds were transferred by higher tiers, and PRIs raised only 2% from their own sources. The total amount of funds transferred to PRIs was Rs.4328 crores in 2007-08, and was Rs.5239 crores was proposed for 2008-09.[315]

Moreover, it was also observed that PRIs were, more or less, functioning as agencies of the state, instead of being autonomous institutions that determined priorities and policies in their subject areas.[316] Within the three tiers of PRIs, it was also found that village panchayats did not enjoy good administrative support, though they had many responsibilities and the authority to

[311] Sheth (2000)
[312] Ibid. Only one taluka panchayat was superseded before 1967 and in 1985-86, and a miniscule 26 village panchayats out of 13,000.
[313] Ibid
[314] Hundred paise equaled one rupee.
[315] Information received from Gujarat officials.
[316] Sheth (2000)

levy taxes and fees as well. Moreover, unlike in Tamil Nadu and Orissa, the Gram Sabha in Gujarat did not have the power to approve the budget, although it was expected to meet twice a year. Therefore, despite the relative success of Gujarat in decentralization, its PRIs did not function as autonomous agencies of governance.

Tamil Nadu has had a long history of local self-government. It was considered to be one of the best decentralized states, despite irregular local elections.[317] The state's 1994 Panchayati Raj Act envisaged a major role for Gram Sabha.[318] It approved budget proposals and annual plans, apart from selection of beneficiaries of government schemes. Part time clerks were appointed to assist in their administration. At the intermediate level, Panchayat Unions (PUs), as Block Panchayats were called, had greater responsibilities. The District Panchayat (DP) at the top, monitored the tiers below. On the matter of finances, the first State Finance Commission in Tamil Nadu submitted its report in November 1996. In terms of actual disbursements, each DP was allocated ten million rupees, and PUs and GPs were given one million rupees and a total of seven hundred million rupees, respectively. It was also decided to allocate 8% of total tax revenue to local bodies, increasing their allocation from Rs. 646 crores to Rs. 1174 crores. [319]

Orissa had a mixed record in democratic decentralization. In the post-1993 era, the Gram Sabha was entrusted with more powers.[320] It was convened twice a year and decided on local programs.[321]Importantly, it had the power to identify beneficiaries of targeted programs as well as approve the annual budget of the GP. At the intermediate level, the Block Panchayat was responsible for development programs, as well as primary education, although it had no

[317] Aram and Palanithurai (2000)
[318] Government of Tamil Nadu (1994). Section 3 and Chapter VII and VIII of Tamil Nadu Panchayats Act 1994 listed the functions of panchayats at various levels.
[319] Aram and Palanithurai (2000)
[320] Jena (2000)
[321] Government of Orissa (1964). Section 5 of the Orissa Gram Panchayat Act 1964

administrative power over teachers. The ZP, which was the highest body in local administration, oversaw activities in public health, education, social welfare, civil supplies and others.[322]

Notwithstanding the sizeable role and powers of these local institutions in Orissa, they were under the control of state government and its officials.[323] Elected representatives could be removed by government functionaries. Significantly, it was not the electors who decided but administrative echelons of state government. Similarly, there are other provisions that allowed government to control and supersede GPs, Block Panchayats and Zila Parishads (ZPs). Despite expanding the role of these local bodies, they did not enjoy meaningful control over officials. It was not any better in the matter of financial devolutions. The first State Finance Commission of Orissa submitted its report in 1998, recommending a sizeable increase in allocations to local bodies. A number of the recommendations were accepted and implemented.[324] Yet, fiscal transfers to PRIs were much lower, in comparison to Gujarat and Tamil Nadu.

At the bottom of the decentralization scale, among the four selected cases, Bihar always had a poor record of Panchayati Raj from before the 1993 constitutional amendments. Elections were not held regularly, and there was poor participation by non-officials.[325] It was noted that these bodies did not have adequate finances, nor were they effective. It was also opined that there was no effective and clear division of responsibilities between state and the panchayat institutions. While development functions were transferred to some extent, PRI s did not enjoy freedom or discretion to decide on priorities or policies. Grass roots planning never took root because decentralized planning was decided by the District Planning and Development Council that was headed by a state minister.

[322] Jena (2000)
[323] Government of Orissa (1994). Chapter IV of the Orissa Zila Parishad Act
[324] Government of Orissa letter no. 20342 dated 13 May 2008, to the author
[325] Sinha, K.K. (2000)

After the 1993 constitutional amendments, Bihar amended its PRI statutes. One result was strengthening the institution of Gram Sabha which was endowed with more powers to monitor GP activities. However, unlike in Tamil Nadu and Orissa, it did not have any authority to approve, and could only 'consider' budgets, accounts, audit reports, vigilance reports and all program related activities.[326] As far as functional devolution was concerned, the Bihar Act assigned thirty one functions to GPs, twenty seven to Panchayat Samitis and twenty four to Zila Parishads.[327] Yet, the state retained concurrent power and weakened the devolution. It was felt, even in 2000, that there was no clear division of powers between state government and local bodies. The state further eroded the authority of these bodies, by retaining wide powers for removal of popularly elected leaders, or in matters of superintendence of PRIs. In the matter of functionaries too, PRIs did not have control over its personnel, such as the Panchayat Sevak (village assistant), who was secretary of gram panchayat, the Block Development Officer, who was the executive officer of the Block Panchayat, or the more senior chief executive officer of Zila Parishad.

On count of financial resources too, Bihar's post-amendment record was not satisfactory. As in other states, its PRIs rarely used their powers to levy taxes, which included holding tax and profession tax. Their main sources of income were intergovernmental transfers. The state was not prompt in constituting the State Finance Commissions too. Worse, the PRIs lost a considerable sum of money, at the rate of Rs 100 per capita, amounting to Rs 5000 millions ($125 mn. appx.), due to procedural and legal tangles.[328] The state government did not transfer

[326] Government of Bihar. Section 7 of the Bihar Panchayat Raj Act, 2006.
[327] Government of Bihar. (2007a). Note on State of Panchayats referred to sections 22, 47 and 73 of the Act; Government of India (2006b) noted devolution of only 25 subjects
[328] Sinha, K.K. (2000)

any state funds to PRIs, but conveyed those received from the federal government.[329] PRIs in Bihar had lesser funds than most other states, and were also handicapped in terms of transfer of powers and functionaries. The record showed that their role was limited and that they were subject to intense control by the state.

IV. PRIs and Disaster Management in India

Field research was aimed at examining the relationship between democratic decentralization and disaster management outcomes. It was hypothesized that decentralization played a significant role in positively impacting administrative outcomes in the domain. It was expected to be a significant predictor of disaster capacities. Interviews were predicted to report that strong and robust local self-governing bodies with greater functional, financial and personnel resources, would lead to superior consequences in disaster administration.

The overwhelming majority of the one hundred and seventy nine respondents were in two categories, based on the nature of their occupation at four levels, which depended on the location of their position in the governance hierarchy. The two types of respondents were political functionaries and civil servants. The political respondents were elected functionaries of PRIs and the state legislature. The different levels at which the respondents were situated were the gram panchayat, development block, district, and the state. A few persons at the federal level and some members of non-governmental organizations as well as international agencies were also interviewed. Among all of them, members of the state legislature were central to policy making at the state level since disaster management was a state responsibility. Official respondents at state, district and block levels were directly involved in working along with PRIs.

They were asked to respond to basically two questions. First, they were asked if PRIs had played any role in disaster management in the past. This question was included to gauge the

[329] Government of Bihar (2007c)

extent of involvement, and recognized the wide variety of tasks that were involved in disaster management. Respondents were expected to identify the responsibilities shouldered by PRIs in disaster management. It was also expected that greater decentralization had a positive relationship between responsibilities and outcomes. States which ranked higher on decentralization scores were expected to shoulder greater responsibilities and also to discharge them better. Since theory postulated a positive correlation with disaster management, it was expected to provide causal linkages with superior policy outcomes, which was the intent of the next question. The second query was more subjective and respondents were requested to explain whether PRI involvement improved the situation and made it qualitatively better than when the state took on the responsibility. Apart from explaining causal linkages, a response of greater confidence in their abilities, was expected to provide supporting evidence. It was presumed that states which had robust local institutions would report better outcomes as they were better positioned to explain the issues.

Bihar

Findings in this state were, apparently, as per expectations. The Gram Panchayats were associated with disaster management in a very limited manner in this state. Second, there was only limited involvement of the PRIs in disaster management. They did not enjoy any autonomy in decision making and functioned as executing agencies and wings of state government. Third, notwithstanding their limited involvement, most of the respondents, except those at state level, were emphatic about the utility of PRI's role.

All the respondents accepted a role for PRIs in disaster management, although there were some differences about the extent of involvement. They were made responsible for monitoring and distributing relief. There was no doubt that PRIs were not independent and autonomous in

decision making, and respondents made it clear that they were working on behalf of the state, and in accordance with its directives. In addition, they were also associated, for the first time in 2007, in estimation of damages to houses and identification of beneficiaries for compensation. This responsibility was entrusted only recently.

There were a few elected respondents who reported a greater role in providing inputs to development and disaster planning. This seemed an unlikely view, apart from one that was shared only by a miniscule, in which their response appeared to have been exaggerated. It seemed to be based on the role of PRIs in preparation of Community Based Disaster Management Plans (CBDMPs), under the GOI-UNDP program. While preparing these plans, most of the respondents accepted that PRIs were acting on directions from the state officials. Importantly, perceptions of senior functionaries at state level were revealing. They believed that there was no autonomous role of PRIs in disaster management. Preparation of plans was firmly controlled by official machinery and was processed by state-appointed voluntary agencies.

Despite their limited involvement and lack of autonomy, the respondents had tremendous confidence in PRI capabilities in disaster management. A rare minority brought up the issue of widespread corruption leading to poor outcomes. Only one official respondent believed that they were not effective because of political animosities and differences. Even in a severely circumscribed sphere of activities, the overwhelming majority reported superior outcomes. This included both official and non-official functionaries, except at state level. Echoing the literature, a majority of them asserted that PRIs were more capable because of superior local knowledge about problems and resources. Greater vigilance, proximity to the scene of action and awareness of needs of people, made them more effective, surmised one district official. Elaborating further, a couple of them believed that they were effective in disaster management because they had

greater experience, on an annual basis, unlike civil servants in transferable jobs. Another local leader agreed that public goods delivery was predicated on calculations of political reward and loss. A significant number said that they could do better, but for excessive control and supervision of government officials, and inadequate funds.

A special mention was made of the responses of state level respondents, both political and bureaucratic. They were totally dismissive about the PRI role in disaster management. They held corruption among PRI leaders to be a major issue that impacted effectiveness of local bodies. PRIs were thought to be incapable as well as lacking responsiveness. One legislator believed that rules about constituency demarcation and allocation eroded accountability.[330] Factors like insufficient experience, lack of awareness about their potential and capabilities, along with rigid governmental procedures were said to be the reasons for incapacitated local bodies in disaster management. At another level, these responses appeared to be justifications against decentralization. Such rationale would have been in accordance with literature which believed that state level politicians and bureaucrats were extremely reluctant to surrender power to decentralized institutions.[331] However, the negative feedback was chiefly from state level respondents. Overall, to the extent that the positive contribution of PRIs was recognized, it was noted that superior information, experience, and greater accountability were responsible.

Orissa

Located on the eastern coast of India, Orissa had been prone to cyclonic storms and floods. As in Bihar, there was no evidence of any effective role in disaster management for the Block Panchayat or the Zila Parishad. Only the gram panchayats were involved. Several broad trends

[330] He attributed lack of accountability to a roster of reservation of panchayats as well as a non-party basis of local elections, resulting in lack of long- term stakes of participants.

[331] Literature had noted the reluctance of government functionaries to share power with decentralized governance organizations. Narain (1969); Seshadri and Reddy (1974); Mishra (1987); Mathew (1996); Shah and Thompson (2004)

were apparent in the responses of political and civil service functionaries. It was seen that PRIs took an active part in disaster management, much more than in Bihar. There was a greater perception of autonomy, especially in preparing CBDMPs, although PRIs had no autonomous decision making authority. In policy implementation, they functioned as agencies of the state. Finally, a large majority of respondents were clearly enthused about PRI role and potential. In addition to common references to floods and cyclones, the super cyclone of 1999 stood out as a defining point in collective memory. Many elected functionaries admitted a heightened awareness of and greater sensitivity towards hazards, after that event.

It was seen that PRIs had played an important role in disaster management. An extremely large majority of the respondents reported that these institutions started playing an increased role after 1999. They began to take an active part in the process of preparing community based plans to tackle disasters. However, they were dependent on the state for all their needs and functioned like any other line agency of government. Most of the respondents accepted that PRI role was evident in disseminating information, relief distribution, evaluation of damages and preparing CBDMPs. Teams formed by the PRIs took part in dissemination of information, search and rescue, distribution of food grains, and assisting in public health and first-aid. Their role extended to preparedness, in addition to participation in the response phase. The most common activity was distribution of relief.

Further, organizations such as the Cyclone Shelter Maintenance and Management Committee (CSMMC), in which the sarpanch was the central functionary, played a direct role. As a pointer towards the central role of CSMMC, one elected leader recollected a November 2007 meeting about the impending cyclone Sidr. It indicated that CSMMCs were more active than PRIs in matters pertaining to disaster management. However, that committee had the

sarpanch in leadership position, revealing a clear linkage with PRIs. Another important area, in which local bodies played a significant role, was in preparing disaster management plans for gram panchayats. Although many respondents were unaware of details about the plans, most admitted to attending the planning process. An interesting distinction was drawn by a respondent, by relating PRI participation to past experience. Areas that experienced severe disasters witnessed greater participation, he said. Ersama block, the worst affected in the 1999 cyclone, was an example.

One block official recounted that training was given to sarpanches, block chairmen, vice chairmen and others, in the use of safety material and kits. Sensitization meetings were held to increase their awareness about different hazards like cyclones, drought, tsunamis, and fires and so on. An official block level respondent reported that guidelines were laid down to involve all the locally representatives in disaster management activities such as evacuation, temporary shelter, community kitchens, security, first-aid and health assistance.

Comparing roles, there were some elected leaders, who believed that NGOs were more important and central in disaster management than PRIs. NGOs, on their part emphasized that disaster management had brought them nearer to PRIs.[332] There was some confusion, with one GP level political representative disregarding the role of gram panchayat in preparing disaster management plans, as he believed that NGOs were the only ones who were involved. However, he seemed to be an exception as he was unaware of the CBDMP in his jurisdiction. Similar confusion was evident in some civil servants, at the block level, who tended to equate all non-official participation in the disaster management with the role of NGOs. Yet, the centrality of NGOs was not established either. As some volunteers complained, NGOs had no greater role, and that PRIs did not allow them to participate in relief distribution.

[332] Victoria (2002)

It also became evident that PRIs functioned, largely, as executive agencies of government, and not as institutions of self governance with autonomous jurisdiction and decision-making authority. There were a significant number of respondents who thought that PRIs "cooperated" in preparing disaster management plans. More than anything else, it revealed an opinion of local bodies being used as one more agency of government, instead of being a separate source of decision making. District level officers commended PRIs for their effective dissemination of alert messages received from state. Elected respondents at the block level also did not feel that they had a meaningful, independent role.

The effectiveness of PRIs was clearly acknowledged by an extremely large number of interviewees. Both elected leaders and civil servants accepted that local bodies were responsible for handling their responsibilities well, in terms of preparedness, response and planning activities. Notwithstanding the vital role played by NGOs in Orissa, respondents perceived that PRIs were also effective. Their confidence stemmed from a variety of reasons, as explained by a majority of them, such as information advantage from being closer to constituents, knowledge of local sentiments, superior knowledge of resources, greater constituent support, higher levels of local participation, and flexibility in responses. As an example, one sarpanch mentioned how GPDM plans were changed due to recent experience of floods. Another significant factor was that during emergencies and for disaster management, political differences were subsumed in larger interest, said an elected functionary. They believed that their only constraint was financial resources.

However, there were some skeptics who pointed to widespread corruption among PRI leaders. One respondent was particularly scathing in criticism, saying that corruption had derailed direction of all activities and programs. Yet, even he was confident about the inherent

capabilities of PRIs, provided they were given funds, functions and functionaries. He too agreed that political differences got subsumed during times of disaster, citing the example of the 2007 floods. It was interesting to note that partisan considerations did not play a major role, possibly because of the need to come together and pool resources during emergencies.

Importantly, at the state level, there seemed a dichotomy of opinions between official and elected functionaries. All the elected functionaries were categorical that PRIs had a very limited role in disaster management, despite greater capabilities. They opined that PRI involvement was inconsequential in planning and policy making, and was limited only to relief distribution, and evaluation of damages. A member of the state legislature pointed that due to the low level of education among PRI leadership, in addition to the fact that they were ill trained, they did not recognize the true extent of their powers and abilities. Official respondents, by and large, repeated the official policy position that underscored the value of non-official participation. They appeared to have recognized the severe limitations of state abilities, which was evident in their cooptation of NGOs.[333] On the whole, it was evident that PRIs had a very significant impact on disaster management outcomes.

Gujarat

In the discussion on the dependent variable, it was seen that Gujarat had greater capacities in disaster management than the other selected states. In an earlier section in the chapter, it was noted that it had also scored high on measures of decentralization. Field responses only confirmed that PRIs had important consequences for positive outcomes. Considering its all-hazards approach, and correlating it with a higher score on decentralization, it would have been logical to expect Gujarat PRIs to be undertaking greater responsibilities in disaster management. However, it was found that there was no significant difference in the range of PRI

[333] McEntire (2006), found the growth of emergent groups, as evidence of state's inabilities and shortcomings.

responsibilities when compared with a state like Orissa, for example. And again, significantly, PRIs did not enjoy or exercise any operational autonomy in the disaster domain, choosing to function as subordinate formations of state government.

All the respondents accepted that PRIs were entrusted with substantial responsibility in the domain. Only one of them, a veteran of the Kutch earthquake disaster management team, was outspoken in his dissatisfaction with its scope, as he believed that it could be wider. The others said that PRI role extended to provision of relief, as in most other states, preparedness functions and some response measures. The range of activities included dissemination, evacuation, search and rescue, community kitchen and relief distribution. Another state level public representative said that PRIs were made responsible for clearing rubble and giving relief after the 2001 Kutch earthquake. Yet another informed that school construction in earthquake hit Kutch district was taken up by Village Education Committees, in which the sarpanch was a member.

Importantly, only one block level official pointed out that PRIs were statutorily involved in the discharge of disaster management responsibilities.[334] Many local leaders admitted that disaster management was a fixed part of the agenda of the general body meeting of the village panchayat, which was held every six months. Disaster plans were approved in the meetings. Preparing CBDMPs was a major task of PRIs, although there were a significant number of respondents who were not fully aware of its modalities. In industrialized areas, PRIs' participation was more institutionalized due to statutory provisions of the Factories Act. Sarpanches and other PRI members were a part of the Local Crisis Groups (LCGs), and were associated in mock drills.

[334] Government of Gujarat (2003). Sections 25 and 26 of the State's Disaster Management Act specified the role and responsibilities of local bodies.

One member of the legislature pointed out that in case of drought, the state declared an emergency only after receiving a resolution from PRIs. He also mentioned that elected and official personnel of gram panchayats were jointly involved in the process of estimating loss of crops, which was the basis of the drought resolution. Damage assessment in case of floods, was done by PRIs. Moreover, the state had also authorized PRIs to take up development works costing less than Rs. 2 Lakhs ($5000 approximately), to aid in relief and recovery without any approval from government authorities.

There were some who did not share the same confidence about PRIs and their leadership. One sarpanch, who took part in block level disaster management meetings, said that he did not find a great deal of participation or meaningful discussion. An official respondent thought that sarpanches did not have interest in those meetings because they were not well-informed. Speaking about the role of PRIs in the post-quake scenario, a block level official was dismissive about their involvement. However, these views represented a very small percentage of the responses. While quality of participation and disinterest in meetings were possible scenarios because uniform conditions could not be expected, the post-quake comments were understandable, as the state had taken on all responsibilities in 2001.

On the whole, the respondents made it abundantly clear that PRIs had functioned as agencies of the state, carrying out its directives. The sections 25 and 26 of the Gujarat DM Act clearly and unequivocally laid down the chain of command and directed local bodies to obey the directions given by district and state level authorities. Government direction was also evident in instructions to village panchayats to clear drains as a measure of preparedness, mentioned one respondent. One official explained that project officers went from village to village, developing plans, increasing capabilities, holding mock drills, preparing plans and mobilizing NGOs and

community groups. It indicated that even in Gujarat, preparation of CBDMPs was very much a state-driven program. Yet, even as agencies of the state government, most respondents agreed that PRIs played an important part. While the extent of their participation was quite similar to the situation in Orissa or Tamil Nadu, there were qualitative changes. In part, this was because Gujarat has had a tradition of non-state actors playing a key role in development. The cooperative movement in the dairy sector was a national bench mark. Moreover, unlike in Orissa and Tamil Nadu, NGOs did not play a major role, leaving greater space for PRIs to represent the community.

Irrespective of the extent of PRI participation and government direction, an extremely large majority of the interviewees were significantly proud of their effectiveness in carrying out whatever tasks were assigned. Even respondents who were not aware of local disaster plans, expressed confidence in PRI abilities, and some of them had actually been involved in its implementation. An important source of their effectiveness was due to pooling resources and submerging political differences during disasters. Other explanations attributed credit to the prudence of locally elected leaders, and their proximity to ground level conditions. One senior official believed that PRI effectiveness was because the state developed techniques to involve them after the disastrous 2001 earthquake. In the limited area in which they functioned on behalf of the state government, the PRIs made a significant impact on quality of outcomes in disaster management.

Tamil Nadu

Even after more than three years, memories of the 2004 South Asian tsunami were fresh in public memory. Not unsurprisingly, the focus of elected and bureaucratic respondents regarding all-hazards capacity development was derived from their tsunami experience. And as in the other

states, the most effective level of PRI participation was the gram panchayat. In addition, there were several other noticeable trends. First, field level findings gave clear and unambiguous evidence about PRI role in disaster management. There was near unanimity over the role of PRIs in disaster management, among gram panchayat presidents, as sarpanches were also known. All the respondents were acutely aware of the fact that they were significant actors during emergencies. Second, mirroring the experience of the other states, it was seen that PRIs did not exercise autonomy and carried out directions from the state. The third important observation was that they were equally confident about their abilities to deliver public goods in disaster management, within the limited scope.

Every one of the respondents provided evidence of PRI participation in the disaster domain. Immediately before and after the disaster event, they were used for dissemination of warning, foodgrains distribution, and damage assessments, distribution of foodgrains and for organizing community kitchens. A special mention about their role in dissemination of disaster alerts and warnings was warranted. A senior official explained their role in early warning systems, wherein some panchayat presidents were given wireless sets. What began as an experiment in Early Warning System in a pilot program was now extended to more vulnerable panchayats in 13 coastal districts.[335] Moreover, respondents stated that they were keenly watching weather news. Increased awareness also meant that local officials and leaders provided district officials with information. One senior officer recounted that he got calls from panchayat presidents to find out about tsunami alerts as had happened in October 2007.

All the cyclone shelters were under the control of gram panchayat. One elected functionary referred to the immense authority enjoyed by the Gram Sabha, which had the power to approve disaster plans and local budgets. One respondent gave the example of her gram

[335] Government of Tamil Nadu (2008)

panchayat, where the Gram Sabha had the final say in locating the site of a cyclone shelter. The Panchayat president was a member of all committees and the gram panchayat was significantly involved in disaster management. In addition, there were cyclone shelter committees that were elected by seashore residents, in the presence of panchayat presidents.

As far as CBDMPs were concerned, the PRIs continued to play a central role, stated most of the respondents. There were some who were unaware of details, but such persons were a minority. For example, one said that the disaster management plan did not seem to have been prepared through PRIs, although different committees formed under the plans had included the panchayat president, village administrative officer, ward members of the panchayat and others. The increased role and number of NGOs may be a possible reason why some local leaders were not fully aware about PRI role in preparing plans.

As in the other states, it was also abundantly clear that these institutions functioned on the directions of the government. They did not enjoy an independent say in the matter of disaster management. An example of state control was that PRIs were only allowed to incur an expenditure up to Rs. 5000 ($125 appx) during emergencies.[336] Perceptions of state control were uniformly present among all categories. One block level officer exulted about his control over panchayat presidents, speaking about his role in deciding the release of government grants. Another block level official gave an example of how PRIs were co-opted in a top-down fashion, when he said that presidents of village panchayats in a temple town were always instructed to take preparatory steps before major festivals. Not unsurprisingly, in Tamil Nadu, the District Collector had the authority to suspend Panchayat resolutions.[337]

[336] The provisions in Gujarat were more liberal, with a limit that was 40 times higher.
[337] Aram and Palanithurai (2000).

On the whole, though, there was a broad consensus that PRIs were able to deliver better results in their limited jurisdictions. Notwithstanding the strict control of state and the larger role of NGOs, the local bodies were perceived to be efficient and effective. Some state level respondents believed that it was due to training and capacity building those local bodies had improved their ability to deal with emergencies. One local leader mentioned that the 2004 tsunami sensitized them, and they took greater interest in mock drills, equipment details and other relevant information. In an impressive display of knowledge, fishermen of his seaside panchayat reeled off details about GPS, satellite radios, C-band radios and other equipment that could be used by the fishing community. Their keenness to learn was correlated, by many respondents, to the direct and devastating experience during the tsunami, making them more willing to take on responsibility. In Tamil Nadu too, a positive correlation between decentralized institutions and disaster management outcomes was evident.

V. Conclusion

Field observations provided valuable information about the relationship between democratic decentralization and disaster management outcomes in India. Apparently, there was a broad correlation that appeared to confirm the hypothesis. It was only when this research delved deeper, did it emerge that this variable was not a major predictor of capacity building among the states. Primarily it was because of the limited scope of PRIs in disaster management. At best, decentralized institutions were good and effective agencies of government that could handle their responsibilities effectively. Yet, since the responsibilities were very limited, there were no grounds to infer a significant and systematic impact on the dependent variable.

A comparison of the four states revealed broad areas of similarity as well as issues in which differences were visible. In all the states, the respondents were aware of the importance of

disaster management and the broad direction of its objectives. Second, there were no great differences in responses, of all categories and at all levels, except among state level actors. In most states, except Gujarat, the top tier was disdainful about PRIs effectiveness that was reflected in a marked disapproval by the political respondents at state level.

The most important issue on which all of them had similar responses was about the limited sphere of PRI involvement. Local bodies did not exercise autonomous decision making authority, and their participation was rigidly structured by the state. Consequently, the common denominator of involvement extended only to distribution of relief and assessment of damages. The other states, excepting Bihar, also involved them in dissemination of warnings, and responsibilities of the response phase such as search and rescue, community kitchens, first-aid and public hygiene. It was seen that PRIs discharged their duties commendably, notwithstanding the occasional complaint of corruption and malfeasance. The other was that local stakeholders were aware of PRIs' inherent merits.

Another important feature was the role of NGOs. In Orissa and Tamil Nadu, these organizations played an important role and occupied space that might have been held by PRIs. Consequently in those two states, they were important actors in the domain. In Gujarat and Bihar, it was different. Gujarat appeared to have dispensed with an institutionalized role for NGOs during non-disaster times. Therefore, PRIs had a more visible role in Gujarat. Bihar, on the other hand, had not formulated a well-thought out policy to deal with NGOs.[338]

The attitude of state level actors towards PRI participation and recognition of the latter's strengths was significant. Except in Gujarat, the others were dismissive about PRI claims of effective delivery. While in general, it can be attributed to reluctance to surrender power and

[338] From discussion with respondents of Bihar, it became clear that the state took a policy decision to involve NGOs, only after the Kosi floods of August 2008.

authority, members of the state legislature may have correlated it with a reduced role for themselves. Many civil servants also remained skeptical, although a number of them believed in the strengths of PRIs. In Gujarat, however, there was greater acceptance of PRIs in all domains, including disaster management. A likely explanation may lie in the fact that, in the past, local bodies had been stepping stones for leadership positions at the state level.[339]

On the basis of evidence obtained in the field, democratic decentralization did not emerge as a significant predictor of disaster management outcomes in India. Local bodies functioned as executing agencies of government rather than autonomous tiers of governance. They had no effective control over their personnel[340].Uniformly, across all the four selected cases, there was no evidence of local bodies addressing disaster management concerns because they were deemed important by their inhabitants. While the strength of these institutions was visible, they did not play a meaningful role in a manner that impacted capacities for dealing with disasters in India. At best, they eased the situation for the state, by handling some important functions during the immediate aftermath. To their credit, it was found that there was no inevitability of capture of local bodies,[341] and with the salience of disaster management, they held promise. Whether they can contribute more effectively, in all-phases of disaster management, or whether they will be victims of the numerous pathologies that had been outlined in theory, remained unresolved. In the Indian context, the situation did not warrant positive conclusions for this research. At the same time, it can be argued that it did not disconfirm either. Yet, since it failed to conclusively indicate a positive relationship, it did not bear out the hypothesis of this research.

[339] Sheth (2000) noted that many PRI leaders later occupied state wide electoral posts.
[340] World Bank (2000)
[341] Bardhan and Mookherjee (1999)

Chapter 4: Economic Resources and Reform of Disaster Capacities

Ordinarily, it is easy to correlate the role of economic resources in impacting delivery outcomes in disaster management. Straightforward, linear reasoning might correlate greater wealth with better results. Resources that were invested in enhancing capacities were expected to improve effectiveness. This research, while recognizing their importance, was aimed at investigating if it was the critical factor that was responsible for policy reform for greater capacities and effective disaster management. The premise enjoyed face validity, although its implications were grave for less wealthier regions. Literature, while not specifically identifying it as the most important determinant, made ample references to its role. Nevertheless, the explanatory factor of economic resources remained vague and general, with the intervention of other variables needed to explain linkages with disaster management reform.

The emphasis on economic resources was significant and had serious implications. For example, a comparison of American emergency responses to 9/11 and Hurricane Katrina would then find the relative underdevelopment of Louisiana to be the reason for its well-publicized shortcomings. It can be argued that economic resources translated into better capabilities that came into play before, during and after disasters. Yet, explanations were never unilinear[342] as in the case of Tamil Nadu and Orissa. On account of all economic and human development indices, Tamil Nadu figured high above Orissa. A resource-based argument would have predicted the former to have undertaken policy change to build superior capabilities. However, as a discussion of the dependent variable revealed, Orissa was found to have built better capacities. It had

[342] Ragin (1987), explained that it was difficult to develop consistent causal relations because outcomes did not usually have one cause and that they did not occur in isolation

undertaken fundamental reform with comprehensive capacity building in disaster management.[343]

This chapter explored the relationship between states' levels of economic development and delivery of public goods in disaster management. It was a test of the hypothesis that economic resources were required to undertake policy reform to build greater capacities and, thereby, effect superior outcomes. Hence, states which were more developed were expected to have more robust capacities to deal with disasters. According to the underlying logic, field research was expected to reveal causal linkages between the two. It would have meant that the relative prosperity of Gujarat, and corresponding poverty of Bihar were the reasons for their respective measures on the dependent variable. Since the logic was deterministic, and rendered all improvement in disaster management as a function of economic prosperity, the inquiry had great value. If proved true by field research, it had serious repercussions for normative discussions of the subject.

Findings of field research provided critical and credible inputs about the hypothesis. First, economic factors were found to be significant in the policy domain. Capacity building mattered for effectiveness in public goods' and higher levels of economic development were enabling factors. The next important finding was that states' investment in reform and capacity building was incumbent on other factors, and that there was no automatic correlation between the two. Prosperity and availability of resources did not automatically lead to reform, but depended on other intervening variables. They enabled the reform in capacity building, but did not provide the critical impetus for change. Finally, it was found that even less developed states had no difficulties in gaining access to resources. There were adequate sources of finance available, and states did not have to be highly developed to be able to invest them. Consequently, while higher

[343] It was found in Chapter 2 that Orissa had superior capacities in measures of disaster management.

levels of development provided economic resources for disaster management, they were not a sufficient condition. States did not find themselves constrained for funds, notwithstanding their development levels. Moreover, a country or state's economic indicators did not determine the levels of public investment or expenditure on public goods and disaster management infrastructure.

The different states in this study varied on measures of economic development. Thereby, they presented a valuable sample to investigate their role in this chapter. Its first section reviews the literature on the subject. Thereafter, in the second part, it establishes the variation among states, on a scale of economic development. Field data is presented and analysed in the third segment, to enable valid and systematic conclusions. That is the content of the last part of the chapter.

I. Economic Resources and Disaster Management Capacities

A survey of literature showed that economic resources had constantly figured in discussions in delivery of public goods, in general. They were considered along with technological pressures, political demands and administrative-organizational arrangements;[344] organizations' stake, information about risk, vulnerability, and experience;[345] market failure, industry strength, industry structure, quality of statutes, and strength of public interest groups' in discussions of explanatory factors relevant to disaster management.[346] The World Development Report 1997 noted the centrality of state role in promoting social and economic development, implicitly recognized the importance of its capacities to deal with forces that disrupted development.[347] It had been observed that development was "a viable means to reduce the

[344] Lester et al (1983)
[345] Mileti (1983)
[346] Williams and Matheny (1984)
[347] World Bank (1997)

quantity and severity of disasters".[348] Economic development allowed countries and states to tackle disasters. It was commonly understood that economic resources played an instrumental role in providing choice to address important and significant problems.[349] It was stated that socio-economic resources fixed the outer limits of possibilities, or alternately provided opportunities.[350] In an empirical study of hazardous wastes, a direct correlation was found between economic resources and policy outputs.[351]

The converse was also true, as pointed out in the World Development Report 1997, that states with low capacities had difficulties in dealing with internal pressures as well as external threats. Thereby the economic resources argument addressed concerns of the disaster research school as well as social vulnerability approach.[352] In the broadest terms, it was held that socio-economic development of the poor was found to be a good way of addressing vulnerability of the weaker sections.[353] Scholars also noted that lack of resources hampered disaster management.[354] Relating the size of a nation with abilities, it had been said that smaller countries were more likely to have difficulties because they were overwhelmed easily.[355] An interesting case was the earthquake that occurred in Kashmir, in both the Indian and Pakistani sides, in 2006. A more developed India was able to deal on its own. Pakistan, its smaller and less developed neighbor, on the other hand, was overwhelmed. Notwithstanding its reliance on international aid, the latter

[348] McEntire (1997), p. 234
[349] Dreze and Sen (2002)
[350] Lester et al (1983)
[351] Lester et al (1983) included an overview of literature; Williams and Matheny (1984) found that fiscal capacity was a significant indicator in explaining regulatory outcomes regarding hazardous wastes
[352] World Bank (1997)
[353] Winchester (2000); Tierney, Lindell and Perry (2001) elaborated that ethnicity and income levels had an important impact in preparedness levels.
[354] Carroll (2001)
[355] Khator and Kabra (2001)

was not able to come to grips even after a long time.[356] In India's case, its economic growth had allowed it in 2004 after the Indian Ocean tsunami, to refuse international aid. This was not always the case, as the 2001 Gujarat earthquake experience showed.[357]

At a very basic level, there may not be any disaster management possible without resources. It was noted that requirements of each phase of the all-hazards approach, entailed availability of resources. Specifically, in the mitigation phase, there was a requirement of long-term structural measures such as building levees, dredging canals, clearing flood plains, constructing multipurpose irrigation projects, among others. The NFPA 1600 standards identified (5.4.3) a mitigation strategy to include "Relocation, retrofitting or removal of structures of risk … redundancy or duplication of essential personnel, critical systems, equipment, information, operations, or materials". In terms of non-structural measures, it included managing resources (5.5.2) such as "personnel, equipment, training, facilities, funding, expert knowledge, materials…."[358] A cost element was evident for each of them.

In the preparedness phase, early warning systems needed to be developed as did adequate communication facilities, in addition to capacities in health care, training of personnel and stakeholders. During the response phase, the focus shifted to search and rescue, evacuation, fire fighting, immediate health care, sustenance, clothing and shelter along with emergency provisions for daily life. It was also evident that resources were needed to restore electricity, water, communications and highways, plug breaches in canals, repair bunds and levees, reconstruct damaged bridges and culverts, as well as restore other infrastructures and facilities. It

[356] Then President of Pakistan was critical of Western governments for insufficient international aid. http://news.bbc.co.uk/2/hi/uk_news/4465600.stm BBC. 24 November 2005, retrieved on 28 November 2008; The situation was bad even after an year. http://news.bbc.co.uk/2/hi/uk_news/scotland/5397380.stm BBC 1 October 2006 retrieved on 28 November.
[357] Gujarat State Disaster Management Authority (2001)
[358] NFPA 1600 (2004)

was believed that greater resources exercised a mitigating influence on the damages caused by disasters.[359] The utility of investing in long-term plans had been recorded, noting that sound recovery had great impact in reducing losses.[360] Developed and diversified economies were able to undertake recovery operations better, underlining their ability to raise internal resources or obtain external help. However, it was also seen that restoration of production systems, with wider economic linkages, was difficult to achieve.[361]

The relationship between development and disaster management was not, however, considered to be positively correlated in unequivocal terms. Theory had long held that impact of disaster was a result of interaction between the physical, demographic and the built-up environments.[362] The built-up environment was held to be a factor that increased vulnerability.[363] Thereby, the correlation between development and vulnerability pointed to a weakness in the 'development improves disaster management' logic. Development also lead to greater urbanization and concentration of population, and thereby increased the vulnerability profile of a place.[364] The growing trend of urbanization in the world, leading to more and more mega cities, was seen to pose greater dangers because of the inherent weaknesses of such locations, complexity of the urbanizing trend as well as disasters, and finally due to the under-examined interplay between the two.[365] It was also said to increase the vulnerabilities of society, by creating false confidence that resulted in construction in flood plains, concentration and larger

[359] Vogel (2001); McEntire and Mathis, training.fema.gov/EMIWeb/edu/docs/EMT/Chapter%20-%20**Comparative**%20**Politics**%20and%20**Disasters**.doc- Retrieved 8 July 2008.
[360] Albala-Bertrand (2006)
[361] Vogel (2001)
[362] Mileti (1999)
[363] McEntire (1997)
[364] Vogel (2001)
[365] Mitchell (1999)

profiles of development projects that turned out to be threats, which increased the damage potential.[366]

Importantly, there were empirical studies which did not find conclusive support for a positive relationship. Having accepted earlier that lack of resources hampered governments, it was found that resources in themselves were no guarantee for superior results.[367] One analysis declared them to be insignificant predictors, when compared to technological pressures, and administrative-organizational arrangements.[368] Moreover, literature referred to a host of non-structural measures such as building codes, zoning regulations, limiting development and measures to reduce exposure that did not apparently require fiscal investments.[369] Finally, a notable weakness in the 'development leads to better disaster management' argument was that there were always competing demands for resources, and pressure groups or lobbies were important for obtaining budgetary claims.[370] Unfortunately, it was widely recognized that this policy domain never enjoyed the constant support of an organized constituency and was usually a loser in budgetary allocations.[371] The uncertainties surrounding disasters meant that there was little opportunity for a pressure group to develop in the absence of a certain and impending emergency or when memories of past events faded from public memory.

II. Economic Development of the States

At the outset, it was necessary to note the wide disparities in economic development, among the selected Indian states. Gujarat and Tamil Nadu, among the selected states, were commonly understood to be more developed than Orissa and Bihar. Failure of planned

[366] Perrow (2006)
[367] Khator and Kabra (2001)
[368] Lester et al (1983)
[369] Mileti (1999); Sakamura (2001)
[370] Sapat (2001); May (1997)
[371] NAPA (1993); Waugh and Sylves (1996)

development, in the pre-reform as well as the post-reform periods, had been recognized in the wide variation on different indicators.[372] It made it possible to correlate levels of development with the policy reform to develop capacities.

Notwithstanding discordant notes on the positive impact of economic resources, this research tested their relationship. Therefore, it was found to be necessary to clarify conceptual concerns regarding the assessment of levels of development. What were the measures that enabled a determination of a state's economic health? Commonly, indicators such as Gross State Domestic Product, Gross Per Capita Income, Per Capita Tax Earnings, and tax-to-revenue ratios were used for this purpose. However, each had its own strengths and weaknesses in reflecting levels of economic development. It could be argued that per capita income was a good indicator as it showed average individual levels of economic prosperity. Yet, it did not take into account the gross disparity in incomes. And, it also did not indicate if a state had enough resources to spend on disaster management capacity building. Next were tax earnings and revenue-to-income ratios. It could be argued that states were able to spend on disaster management only if they had additional resources, since governments needed revenues to incur expenditure in building capacities. However, this did not apply in exploitative and rent-based economies, and allocations were dependent on organized lobbies for budgets. It meant that higher revenues did not necessarily find investment avenues in the disaster domain. Another indicator was the Per Capita Gross State Domestic Product (GSDP), which reflected the quantum of economic activity and, in a very general way, the state's level of prosperity. And there was the Human Development Index, which was a broad indicator of the socio-economic development of a state.[373] The premise was that economic development lead to development in social indicators such as health,

[372] Misra, B. S. (2007); Guruswamy, Baitha and Mohanty (2006)
[373] UNDP http://hdr.undp.org/en/statistics/indices/hdi/ retrieved 29 November 2008

education, etc. However, questions had been raised about the causal connection between development and equitable progress in social sectors.[374] In the disaster domain, in one of the few quantitative analyses, it was found that this variable was equated with per capita personal income, per capita state spending, median family income and percentage of population below poverty level.[375] Such a combined approach, while glossing over the finer points conceptually, nevertheless provided a good idea about the level of a state's economic development. This research also used a combination of indicators.

This research used a combination of measures of Per Capita Gross State Domestic Product, Per Capita Income along with poverty indices. Most of these indicators were consistent with each other. The selected states figured at the same levels in scales of per capita incomes and GSDP measures. They co-varied uniformly on all these indicators, giving a fair indication of where they figured on a common scale of development. Gujarat and Bihar occupied their respective places as the most and least developed of the selected states. Second in the scale was Tamil Nadu, which had traditionally been a developed state. Orissa, on the other hand, was an underdeveloped state, which was third among the chosen four cases.

A striking feature revealed by the data was the remarkable rise of Gujarat. Its growth was significant because the southern state of Tamil Nadu had been traditionally considered a relatively developed state. Not withstanding considerable infrastructural development,[376] it slipped from its position and was overtaken by Gujarat. In most indicators of economic development, Gujarat had emerged as one of the most developed states in India. And in some, it was at the very top. This rise has been mirrored in the indices on Per Capita Income. The other

[374] Dreze and Sen (2002) used education and health indicators to study the distributional aspects of economic growth among different states in India
[375] Lester et al (1983)
[376] Krueger and Chenoy (2002) opined that infrastructure was an accurate indicator of economic progress since it was a prerequisite for economic development

measures also provided adequate indication of Gujarat's economic progress, vis-à-vis Tamil Nadu. The other two, Bihar and Orissa, were consistently poor on economic indicators. While, Bihar was seen to be the more underdeveloped, Orissa was not vastly different. On the whole, while Gujarat and Tamil Nadu represented the developed states in India, Bihar and Orissa exemplified the other end of the spectrum. Within the same country, the development gap seemed to be significant.

Table 4. Per Capita Income of States 1981-2004 (in rupees)[377]

	1981	1990	2000	2004
Bihar	3363	4092	4233	4701
Orissa	4149	5365	5735	6487
Gujarat	6480	8832	13298	16779
Tamil Nadu	5305	7415	12167	12976

A rank analysis also documented the remarkable growth of Gujarat among a list of the 14 major General Category of States that covered cover large, non-hilly provinces.[378]

Table 5. Rank Analysis of Per Capita Income of States [379]

	1994	2000	2004
Bihar	14	14	14
Orissa	13	13	12
Gujarat	4	4	1
Tamil Nadu	5	5	6

The position with respect to Per Capita State Domestic Product and its growth rates provided greater clarity on Gujarat's development vis-à-vis Tamil Nadu. The other two states, Bihar and Orissa, lagged far behind.

[377] Mishra, B.S. (2007)
[378] Small, hilly provinces formed a Special Category of States, whose structure of economies was different.
[379] Mishra, B.S. (2007)

Table 6. Per Capita Net State Domestic Product (Current Prices 28 Feb. 08)[380]

	1999-2000	2002-2003	2005-2006	2006-2007
Andhra Pradesh	15507	19568	26226	29582
Assam	12282	14421	18211	20166
Bihar	**5766**	**6928**	**7875**	**9214**
Chattisgarh	11761	13145	20151	NA
Gujarat	**18864**	**22683**	**34157**	**NA**
Haryana	23121	30380	41988	49038
Jharkhand	11435	11865	19066	20811
Karnataka	16603	19388	27101	NA
Kerala	19294	23207	30668	33609
Madhya Pradesh	12384	12303	15304	16578
Maharashtra	23340	26697	37081	NA
Orissa	**10567**	**11788**	**17610**	**20240**
Punjab	25611	29316	36759	40566
Rajasthan	13619	13128	17306	19512
Tamil Nadu	**19378**	**21813**	**29958**	**32733**
Uttaranchal	13672	18819	24585	27879
Uttar Pradesh	9719	10632	13316	14685
West Bengal	15826	18746	25223	NA

Table 7. Rate of Growth of GSDP (% per year)

	1980-81 to1990-91	1991-92 to1998-99
Bihar	4.66 (12th)	2.88 (14th)
Orissa	4.29 (13th)	3.56 (13th)
Tamil Nadu	5.38 (5th)	6.02 (4th)
Gujarat	5.08 (8th)	8.15 (1st)

Source: Planning Commission[381]

Finally, the same position was reflected in the poverty indices. In an inverse manner they were indicators of levels of development. The greater the population under poverty level, the lower was the state's position on an economic development scale.

[380] Government of India, Ministry of Statistics and Programme Implementation http://mospi.gov.in/mospi_nad_main.htm retrieved on 6 April 2008

[381] Ahluwalia (2002)

Table 8. Percentage of Population in Poverty

	1983	1987-88	1993-94	1999-2000
Orissa	65.29 (1st)	55.58 (1st)	48.56 (2nd)	47.15 (1st)
Bihar	52.22 (3rd)	52.13 (2nd)	54.96 (1st)	42.60 (2nd)
Tamil Nadu	3.87 (4th)	43.39 (4th)	35.03 (7th)	21.12 (7th)
Gujarat	3.08 (11th)	31.54 (11th)	24.21 (12th)	14.07 (11th)

Source: Planning Commission[382]

From the above data, a clear picture emerged about the selected states in the scale of economic development in India. It was evident that Gujarat was the more developed, followed by Tamil Nadu. The other two states, Bihar figured at the bottom of the scale, with Orissa being the last in respect of having the largest population under poverty levels. It was an indication of greater disparities in income distribution than Bihar.

With respect to issues directly concerning the relationship between economic resources and disaster management capacities, several important concerns needed to be recognized. Given India's overall economic position, shortage of resources was always a major indicator of inadequacies.[383] The relative development of Gujarat and Tamil Nadu were only indicative of their place within India. It was not to be construed that these states had reached levels of development that enabled them to address all or most of their requirements. In the country as a whole, which also included the states of Gujarat and Tamil Nadu, there were serious weaknesses in several key areas. Shortcomings in infrastructure were noted in the manner in which they impacted distribution of relief as well as for providing medical assistance to those affected by disasters.[384] Serious shortages were noted in recovery programs that relied on physical

[382] Cited in Ibid, p. 99
[383] Pilgrim (1999)
[384] Relief Web (2006), http://www.reliefweb.int/rw/RWB.NSF/db900SID/ACIO-6Q4BXU?OpenDocument retrieved 29 November 2008

restoration of resources, facilities and infrastructure.[385]It was recognized that administrative response was seriously handicapped by unavailable early warning systems, and lack of resources, among other things.[386] The enormous damage due to the 2004 tsunami was directly attributed to absence of preparedness measures.[387] Inadequacy of mitigation measures had been highlighted as well as, insufficient capabilities in preparedness.[388]

Hitherto, funds for disaster management were provided by the Government of India, when it was determined that state capacities were overwhelmed. The amount of disaster relief disbursals depended largely on the scale of devastation. The mechanism for allocations was determined by a Finance Commission that was periodically set up to decide the revenue-sharing formula between center and states.[389] The Finance Commission laid down a formula-based process for disbursal of funds. The federal government allocated resources through a Calamity Relief Fund (CRF) for each state, and the National Calamity Contingency Fund (NCCF), which augmented the former. The CRF was "created in each state for meeting the expenditure for providing immediate relief to the victims" of various disasters.[390] The allocations were worked out on the basis of a ten year average of the period, 1982-1992, after adjusting for inflation.[391] The NCCF allocations augmented these funds, in case of severe natural calamities, with the same purpose. The Twelfth Finance Commission increased the total allocation from the earlier

[385] Parasuraman and Unnikrishnan (2002); Provention Consortium (2005b) highlighted a need for comprehensive recovery
[386] USAID http://www.usaid.gov/in/our_work/strategy/strategy6.htm retrieved 22 June 2008
[387] UNDP (2005); Asian Development Bank, UN and World Bank (2005) noted a failure in recognizing vulnerability
[388] Government of India (2004b); Asian Development Bank, UN and World Bank (2005) noted the surprise factor of the 2004 tsunami.
[389] Government of India (2007a). Article 280 of the Indian Constitution mandated the setting up of a Finance Commission.
[390] Government of India (2004a), p. 69
[391] Pande and Pande (2007)

Rs.11007.59 crores ($2700 million appx.) to Rs. 21333.33 crores ($5200 million appx.) for the period 2005-06 to 2009-10. [392]

Table 9. Releases Under CRF and NCCF, 31 Dec 2006 (in Rs. Crores)[393]

	Allocation Under CRF	Center's Share of CRF Released	Releases under NCCF
Andhra Pradesh	361.28	335.48	203.06
Assam	198.62	72.40	000.00
Bihar	153.23	000.00***	000.00
Chattisgarh	114.98	150.33	000.00
Gujarat	258.30	246.87	545.69
Haryana	130.60	58.31	000.00
Jharkhand	129.71	48.64	000.00
Karnataka	120.39	113.98	384.97
Kerala	89.77	33.67	000.00
Madhya Pradesh	261.58	246.67	30.85
Maharashtra	234.05	220.00	589.90
Orissa	310.24	291.34	25.00
Punjab	153.33	112.26	000.00
Rajasthan	436.42	413.66	100.00
Tamil Nadu	219.53	000.00***	000.00
Uttar Pradesh	304.48	114.18	000.00
West Bengal	241.50	000.00*	000.00

*** *Not released for want of information regarding utilization certificate, etc*.

States, on their part, expended the resources received from the center, and from their own revenues on a variety of tasks that provided a clear picture about their objectives. They included setting up organizations like the State Disaster Management Authorities, introduction of training for civil servants, conducting mock drills, establishing multiple communication networks, setting up specialist response teams, dog squads, trained search & rescue teams, mobile hospitals, Emergency Operation Centers, modernization of early warning systems, as well as providing better developmental infrastructure. However, all the above were not met from the fiscal transfers under CRF and NCCF because states were encouraged to cover them under long-term projects, through which disaster management was to be mainstreamed into developmental

[392] Government of India (2007b)
[393] Government of India (2007b)

planning. It had been a major objective of state policy as the Disaster Management Act, 2005 wanted "…the concerned Ministries and Departments to draw up department-wise plans in accordance with the National Disaster Management Plan."[394] Thus, the states had different methods of meeting the investment requirements of disaster management. And the center played an important role in providing for immediate requirements of distributing relief and restoring infrastructure. It was left to the states, for the most part, to expend the resources from center as well, as to use their own revenues for investing in building capacities.

The test of the hypothesis depended on finding that policy reform was related to the state's level of economic development. States which were more developed were expected to have invested in greater capacities. However, there was no strict correlation between the rank ordering of states on the dependent variable and their position on economic indicators. Such correlation may or may not have existed, and was not the object of the inquiry. The objective in this chapter was to seek confirmation of the systematic and significant, autonomous impact of the explanatory factor on the capacities of disaster management in the states. It was to see if the consequence would have been better or worse, but for a higher or lower level of economic development. This research relied on published data available in the public domain for information about the economic development of states. It depended on the responses of interviewees to understand the linkages, if any, between the two, and if it could be inferred that states policy reform to build their disaster capacities was dependent on their levels of economic development.

[394] Government of India (2007b), p. 93

Most of the one hundred and seventy nine participants addressed the significance of this factor.[395] The respondents were queried on two major concerns. First, they were asked to list the various activities carried out in the domain. It would have been consistent with expectations, if the more developed states were found carrying out a more comprehensive range of activities and policy measures, because their resources provided an enabling window. The second question was concerned about availability of funds. Stakeholders were asked if paucity of funds was a factor in disaster management. Responses from the poorer states would have conformed to predictions if they had expressed difficulties in providing public goods due to lack of fiscal resources. Conversely, the more developed states were expected to report a comfortable position on that count. Complaints about federal grants were also expected to be heard from the poorer states, which faced a shortage of resources. Issues concerning funds and allocations for disaster management were decided at state level, by elected and non-elected functionaries. Hence, the responses of state level respondents held greater significance, among others. Their responses, more than those in districts and below, were important because they had a better picture of the state's finances.

Bihar

For a state that faced floods with unfailing regularity, it was not a surprise that people had developed their own coping mechanisms, apart from their dependence on state interventions. The second aspect that emerged was that the range of disaster management activities was mostly limited to the response stage. The traditional relief perspective appeared to prevail even in the new millennium. There was no comprehensive approach to work out the needs of disaster management. Compared to the wide ranging capacities and activities in Gujarat, or even Orissa,

[395] A few, who were not in the federal government or the selected states, were not covered on these points. There were only five such respondents.

the wish list in Bihar was quite modest. Finally, and surprisingly, there were no complaints about paucity of funds. While, local leaders and civil servants, in the field, articulated a requirement for greater allocations and a need to take up more long-term mitigation programs, participants at key places at state level did not consider it a constraining factor.

In an earlier chapter, it was mentioned that Bihar had suffered fewer losses of life despite severe disasters, and identified coping mechanisms developed by people. It was seen as an example of people relying more on themselves, rather than state machinery. During field research, the first significant trend related to this development. Preparations for known hazards such as floods took place as a matter of routine, said all the local leaders and most civil servants in the field. More than relying unduly on the state, coping mechanisms were adopted at family and community levels. They spoke about storage of food grains, fodder and firewood in addition to locating higher grounds to stay. Some said that coping mechanisms extended to individual mitigation efforts, and pointed to the elevated plinth of residential structures. It emerged that there was far less reliance on the state, and that they depended on it for foodgrains, primarily. That also explained the high salience of relief distribution.

A second feature that was most prominent was the continuance of a ‘relief orientation’. From the list of activities undertaken, it was clear that there was no paradigm shift. An extremely large number of respondents highlighted the importance of providing relief. And by relief, they referred to free distribution of food grains to those affected by disasters. There were numerous references about how it shaped the nature of public discourse, after disaster events. Invariably, it occupied a central position, followed by provision of boats for evacuation, and polythene sheets for temporary shelter. Emergency rations, evacuation, and temporary shelter were identified by most respondents as principal activities of disaster management. The other important

responsibilities included provision of medicines, basic health care, safe drinking water, and sanitation facilities. The district level respondents also reiterated the overwhelming focus on immediate needs of the response phase.

Thereafter, requirements of the reconstruction phase were addressed such as restoration of road communications, power and other utilities. Compensation was also paid for loss of life and damages to property. For example in 2007, the state provided Rs.80.23 crores ($20 million appx.) as cash dole, and an agricultural input subsidy of Rs.350 crores ($85 million appx).[396] They also reported spending Rs.7.82 crores ($2 mn. appx.) for providing ex-gratia to families who lost 986 family members. Long-term requirements were also partially addressed in the construction of raised platforms, which proved critical for airdropping operations.

The requirements of disaster management in Bihar also reflected their overwhelming concern with immediate response activities and, to some extent, prevention, mitigation plans. Most field level officials spoke about shortage of vehicles. However, more than greater sensitivity to requirements of disaster management, it reflected their views on inadequate logistics that were used in routine work. Interestingly, only one respondent was emphatic about the need for a good road network, whereas another identified a requirement for better alerting systems. Reflecting an absence of a widely shared perspective for long-term plans, only one respondent mentioned the need to make a ten year estimate of requirements for boats, motorboats, and for road communications. Strengthening river embankments, improving education to increase awareness were also necessary tasks, he said. Similarly, a local leader referred to the unavailability of ambulances, and another spoke about a need for fire tenders. There were a couple more who pointed to the lack of ambulances, fire tenders, trained teams, rescue equipment, and inadequate boats, in addition to debris clearing machinery. The majority

[396] Government of Bihar. (2007)

did not share these views, which seemed to be the opinions of a few sensitized and articulate individuals. These responses represented exceptions. As a result, or otherwise, the state took no initiative in building those capacities. It appeared that, like the large majority of respondents, state policy also focused on requirement of resources for distributing foodgrains. And once that was carried out satisfactorily, as in 2007, there were not many demands.[397] It did appear to confirm the hypothesis that economically underdeveloped states were less inclined to take up comprehensive capacity building policies. However, a full confirmation depended on their articulation about the paucity of resources as the major constraint.

Importantly, there was greater awareness about long-term mitigation plans among leaders of local bodies. Long-term mitigation plants figured in their responses as much as response-phase activities such as evacuation, shelter and emergency rations. Many articulated a need for constructing flood control, irrigation projects and hydroelectricity plants. A couple of them demanded high-investment projects such as raising river embankments and desilting rivers. A few officials talked about the need for mainstreaming disaster management into development plans for constructing dams in upstream Nepal, and interlinking rivers as a long-term solution. However, demands for these projects remained unfulfilled. The department of disaster management had no responsibility for these schemes as they were to be undertaken by other departments like those for irrigation, and energy under federal guidelines.[398] The state, as a whole, did not take up these projects because it lacked resources.

Yet, constraints of resources did not sound credible, when juxtaposed with emphatic statements by state level functionaries that there were no shortage of funds for. Sadly, it was

[397] It was agreed by every one, cutting across party lines, that food grains were distributed in adequate quantities, for the first time in 2007.
[398] Government of India (2007b). As per federal guidelines, such projects were to be taken up under the state's normal development plans and not under the disaster management budget; Pande and Pande (2007)

evident that they had not considered the scope of the domain beyond the immediate requirements of relief. Consequently, critical respondents said that there was no lack of resources and no financial constraints for their disaster management policies. These responses were at the state level, and were critical due to their centrality in this domain. One state level participant, while admitting that Bihar had not pumped any of its resources beyond utilizing the federal allocation, contended that CRF funds were adequate. Therefore, the common refrain, at the state level, was that there were no constraints of resources.

The observations appeared to be in accordance with theoretical predictions. The range of activities was limited, and their focus revealed a 'relief' mind set. Bihar's low level of economic growth appeared to explain the findings for the most part. As expected, there were demands for long-term mitigation projects, which implicitly pointed to Bihar's poor resource position. But these were heard at lower levels, and the bureaucratic division of work placed them beyond the department of disaster management. The limited perspective on disaster management was also evident when it was found that many officials did not use the resources at their command, especially the non-financial ones. For example, a small minority reported utilizing the federal database for logistics, the India Disaster Resource Network (IDRN). Overall, the field reality of Bihar did appear to conform to its level of economic development, although it was expected that there would be greater complaints about requirements of funds. Instead, there was a complacency regarding availability of resources that belied expectations. Stakeholders in important positions did not perceive any shortage of funds, and expressed confidence about meeting fund requirements in the disaster domain. As stated earlier, respondents at the state level were central to questions about resource requirements, as they had a good picture about availability of finances.

Orissa

In the preceding section, it was seen that Orissa had figured at the bottom of developmental scale, marginally above Bihar. Field research came up with several significant trends, some of which were not consistent with theoretical expectations from underdeveloped states. First, most respondents reported a variety of functions that addressed all phases of disaster management. Orissa carried out a wide range of activities and displayed an approach that reflected a comprehensive, all-hazards approach. The next important feature, after the experience of the 1999 super cyclone, was that majority of the respondents were able to articulate demands for numerous long-term and short-term requirements. Finally, despite entailment of resources for comprehensive plans, there were no complaints on that count.

The first notable feature was that Orissa had embarked on a thoroughgoing, capacity building exercise and had undertaken a wide range of activities in disaster management. Elected and civil servant respondents, at all tiers of governance, related the policy components of the domain that went beyond a 'relief orientation'. Respondents exuded confidence about Orissa's better communication facilities, alerting systems, remote sensing applications, improved roads, increased number of cyclone shelters, and a greater number of brick and mortar houses for the poor. They were also proud of the fact that Orissa was the only state in the country to set up the Orissa Disaster Rapid Action Force, which was trained and equipped for disaster management.[399] The ODRAF was formed for specific search and rescue operations as well as "relief line clearance and overall disaster management" as the OSDMA website put it.[400] Many respondents were enthusiastic about the materials available with them which included life jackets, buoys,

[399] The Central Government had created a common trained manpower in the India Disaster Response Force for use of all states, whereas Orissa created the ODRAF from its resources.
[400] OSDMA, http://v3.osdma.org/ViewDetails.aspx?vchglinkid=GL011&vchplinkid=PL034 retrieved 10 October 2008

ropes, tower lights, stretchers, and mechanical cutters. One sarpanch confidently stated that if a super cyclone hit them now, they were better prepared. Unlike 1999, now there were proper facilities, even for disposal of dead bodies, human and animal.

Long-term plans were also on the radar of state level officials. The state had also undertaken vulnerability mapping through high-resolution remote sensing. Disaster proofing by laying roads above high flood level, incorporating safety norms in construction of buildings, apart from ensuring environmental protection within the state in the National Cyclone Risk Mitigation Project (NCRMP) were priority areas, claimed an official respondent. Moreover, he pointed out that Orissa was the first state to set up a separate agency for disaster management, the Orissa State Disaster Mitigation Authority in 1999. In 2006-2007, Orissa spent over Rs.391 crores ($95 million appx.) for repairing and restoring public infrastructure that had been damaged by floods.

In a joint program that began long before the super cyclone of 1999, Government of India, Government of Orissa, and the German Red Cross covered about 25000 community members in training.[401] They were trained in search and rescue, first-aid, water and sanitation, health and hygiene and other aspects of Community Based Disaster Management. Thereafter, mock drills became an integral part of Orissa's disaster management, and were being held twice every year. They included mandatory safety drills in industrial areas, and were monitored by OSDMA.

At the same time, the respondents informed that traditional concerns were not forgotten or overcome. Providing foodgrains remained a major responsibility of the state, in addition to arranging boats for evacuation, and search and rescue operations. In the 2006-07, government

[401] Stated by officials of Indian Red Cross, Orissa Branch.

plied 1336 boats to evacuate 63776 people.[402] Public hygiene was another important area. In 2006-07, a total of 496 medical centers were set up, 220 medical teams were deployed, in addition to disinfecting over 50,000 drinking water sources. [403] An amount of Rs.32 crores ($8 million appx.) was also paid for providing cash relief for damaged crops.[404]

In addition to the activities already taken up, the list of requirements that remained on the wish-list of panchayats was equally long and exemplified the second important feature of the responses. At panchayat level, the CBDMPs recorded most of the requirements. They included road repairs, deepening water bodies, drinking water sources, community halls, training centers, sanitation facilities, health centers, cyclone shelters, brick-and-concrete houses, roads, veterinary buildings, electricity connections, afforestation projects, and mangrove plantations. Respondents also identified a need to increase training in search and rescue as well as first-aid. In the preparedness phase, one functionary pointed out the need for a fail proof arrangement for stockpiling medicines, and for constructing rural godowns to store supplies. The need for strengthening first-responders was also understood, explained a state level official, who spoke about the need to provide inaccessible panchayats with Very High Frequency (VHF) radio sets for emergency communication. Another identified a need to have weather announcement centers in fishermen jetties, providing radios and life jackets in all fishing boats, and to establish marine police stations. Some demands included long-term requirements for river embankments that even required land acquisition. An example was the demand for a major irrigation project to address regular flooding by Subarnekha River.

Finally, when it came to perceptions of resource requirements, the response was revealing, despite the long list of needs. Except for the massive multi purpose irrigation projects,

[402] Government of Orissa (2007)
[403] Ibid
[404] Ibid.

there were no complaints of fund shortages. More than problems of insufficient fiscal transfers, Orissa's objection was more with the formula of the federal government, for dovetailing mitigation projects with mainstream development projects. Federal policy in all such cases was that "expenditure on restoration of infrastructure and capital assets, (except those intrinsically connected with immediate relief operations and connectivity with the affected areas and population) are required to be met from the Plan funds of the States."[405] Moreover, there were complaints about the subjective process of federal fiscal transfers. One state official opined that CRF guidelines and methodology were extremely opaque. Worse, he believed that NCCF devolutions were decided behind closed doors and were possibly influenced by partisan considerations.[406] However, it was more of a grouse against the arbitrary and ambiguous criteria, although it did amount to a problem with adequate resources.

On the question of adequacy of funds, there were mixed responses at lower levels, whereas state level respondents conveyed no concerns. Conflicting views were found at local body levels, with some considering it an important issue and others saying that it was not. However, the few who complained about fund constraints mentioned them in the context of a need to take up capital-intensive river projects. Resources were not cited as constraints for other requirements. Altogether, every one agreed that fund requirement demands were never brushed under the carpet.

At the state level, respondents did not believe that there was any problem with accessing financial resources. A plurality of officials was of the opinion that CRF allocations were sufficient for completing ongoing projects. For a major disaster, one official guesstimated a

[405] Government of India (2007b)
[406] Pande and Pande (2007). NCCF was managed by a sub-committee of the National Development Council (NDC), which was headed by the Agriculture Minister with the Deputy Chairman of the Planning Commission, two Union ministers and five Chief Ministers, nominated by the Prime Minister, as its members.

requirement of Rs 500 crores ($120 million appx.) It was also pointed out that preparedness systems, including Early Warning Systems and communication facilities, were being set up by Government of India. Meanwhile, Orissa had also acquired considerable experience in accessing multilateral sources such as the World Bank, Asian Development Bank and others. In the immediate aftermath, it received a loan of $150 million from the World Bank.[407] It also received from the British Department for International Development (DFID), a sum of about $55 millions for various recovery programs.

The responses in Orissa were not according to expectations. To begin with, the wide scope of its activities was not predicted for an underdeveloped state. And, importantly, there were no reports about any of their plans being constrained by poor resource availabilities. Its ability to draw upon multilateral sources of funding helped Orissa overcome the constraints imposed by lower levels of development. Consequently, much against expectations, there was no complaint about shortage of resources.

Gujarat

The situation in Gujarat appeared to conform to the predictions of theory. Of the selected states it had the most elaborate administrative abilities to deal with disasters. And it was economically the most developed of the four. Data from the field appeared to support the hypothesis to a great extent. First, Gujarat had vastly developed its disaster management capacities and was a leader in the entire country, and not the sample alone. The second important aspect was that notwithstanding its comprehensive policy reform, there were important stakeholders who were seeking more capabilities. Finally, there was no concern of resource constraints.

A striking feature of Gujarat's system was its comprehensiveness. They had undertaken a host of activities addressing all phases of disaster management. A majority of them spoke of the

[407] Sinha, Anil K. (2002); State officials put the World Bank loan at $ 64 millions (appx.).

large procurement exercise for obtaining equipment that ranged from simple to advanced and heavy machinery, which were useful in emergencies. These ranged from life jackets, ropes, inflatable tubes, polythene sheets to heavy earth moving equipment, sophisticated steel- cutting and concrete-cutting machinery. Similarly, for urban and transportation accidents, they procured cranes, lifts, dumpers, gas cutters, etc. The capabilities of the fire services were exponentially increased with more fire tenders, water tankers, and ambulances. Importantly, the procurement list was prepared on the advice of personnel who received specialized training.

A very significant aspect of their progress was the development of systems for better utilization of resources. Respondents were grateful at the introduction of mobile emergency medical services, throughout the state. On the communications front, an electronic communications backbone was set up through the Gujarat State Wide Area Network (GSWAN) linking up all tiers of local government and state government offices. A state initiative in preparing an electronic database of suppliers was frequently used during disasters, and addressed logistics questions about suppliers.[408] For example, a few respondents spoke about the experience in 2007 in Surat, when they were able to use the State Disaster Resource Network (SDRN) to requisition large numbers of earth moving equipment, and complete the task of clearing the streets of slush and debris in a very short time.

State level respondents also said that organizational reform was a major part of the reform agenda, as seen in the formation of the Gujarat State Disaster Management Authority (GSDMA), and Gujarat Institute of Disaster Management (GIDM). The focus was beyond relief and response, it was on building capacities. Further, they also built a trained force by earmarking one company in every battalion of the state's reserve police as a disaster management team that

[408] The Gujarat initiative was in addition to the federal electronic data base called the India Disaster Resource Network

was trained in search and rescue operations, as well as other emergency duties. As the respondents informed, these were only an illustrative list of measures that included capacity building of institutions, and personnel and their skill upgradation.[409]

A significant number of respondents spoke about massive state investments in the recovery phase after the 2001 earthquake. One local politician in Kutch mentioned that high schools were built, drains desilted and new drinking water pipelines laid in his panchayat. In a flood prone area, the river embankment abutting a panchayat was raised as per local demand. The government pumped in additional resources for seismic-resistant housing programs, rebuilding damaged buildings, retrofitting infrastructural public assets such as dams, highways, electricity lines, power substations, and water supply lines in vulnerable zones.[410] Much like the Japanese,[411] the state saw disasters as opportunities, such as town planning in quake-hit Kutch. They even acquired land to develop infrastructure.

In a situation where comprehensive reform was undertaken, fewer demands for more capacities would have been expected. The second significant pattern was that responses revealed articulation of more requirements, which included simple demands for boats too. One member of the state legislature wanted better alerting systems to warn of impending disasters. In other cases, field observations noted specific demands for a river embankment, raising the height of a bridge in a flood prone area, and desilting the local waterway, as well as constructing a raised causeway over it. Demands were more in industrial locations, where respondents complained about inadequate human resources and facilities for off-site plans and drills. Another district level official was unhappy about lack of personal protective equipment to deal with chemical disasters

[409] Senior officials informed about creation of new posts in each district to man its Disaster Management Cell. New posts were created at state headquarters, too, for the Disaster Management Cell.
[410] Government of Gujarat (2005)
[411] Mileti (1983)

as well as shortage of transport arrangements. Yet, instead of mistaking these demands for weak capabilities, they exemplified a higher level of awareness and a progressive need to continue with capacity building.

On the subject of paucity of resources, there was an unambiguous response that indicated that it was not a concern. An overwhelming number of respondents agreed that it was not an issue in Gujarat. The vast procurements and the comprehensive programs were submitted as evidence against any shortfalls. Financial resources were never a constraint, stated senior state level functionaries. One of them estimated that a total of Rs. 7000crores ($1700mn. appx.) was likely to be incurred on post-earthquake reconstruction. Another pointed out that Rs. 700 crores ($170mn. appx.) was spent in 2000, in addition to CRF allocation, only to combat drought. From the World Bank, Gujarat sought a total assistance package of more than $700 millions.[412] In addition, another loan was secured from the Asian Development Bank for the sum of $ 350 millions.[413] Hence, it was not surprising that most respondents at gram panchayat, block and district levels also said that they did not have any problem with obtaining resources for disaster management requirements.

There was the occasional problem regarding shortage of funds for particular schemes at the local level, and in the industrial sector. There seemed to be complacency in the industrial domain, possibly due to an ability to rely on the sizeable resources of the private sector. In all the other cases, complaints were few, and appeared to be exceptions as most local respondents responded that funds were not a serious constraint. Similar was the issue with an official expressing his satisfaction over funds for long-term planning.

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[412] World Bank http://www.worldbank.org.in/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/INDIAEXTN/0,,contentMDK:20041763~menuPK:295625~pagePK:2865066~piPK:2865079~theSitePK:295584,00.html retrieved 1 December 2008

[413] Gujarat State Disaster Management Authority. 2002.

The results on Gujarat were consistent with the predictions of theory, and appeared to be according to expectations. Minor deviations such as unmet requirements in a comparatively resource-rich had been seen as insignificant aberrations. However, several intervening factors also needed to be explained. It was stated by a legislator that Gujarat's procurement of equipment took place only after policy makers saw the utility of such equipment when it was used by international agencies in the post-quake situation of 2001. It lead to the conclusion that Gujarat built its capacities because of its experiences in 1998 and 2001, and not due to a rational policy analysis that was enabled by a comfortable resource situation. Nearly every respondent referred to those defining moments to explain policy reform, rather than their own level of economic development. Moreover, the state's fiscal strength was not the sole contributing factor as Gujarat had accessed large amounts of funds from international agencies.

Tamil Nadu

Tamil Nadu was always considered a comparatively developed state and it was expected that the disaster management system would have been suitably strengthened. One more reason for such outcomes was its known vulnerability to cyclones, floods and industrial hazards. Theoretical premises would have expected it to be a leader in the field due to its economic clout. Data on infrastructure development indicated its strong position, and it was contra-intuitive to find that disasters could disrupt its processes and expose its weaknesses as they did during the 2004 tsunami.[414] Their capacity building, under the new paradigm, began in real earnest after 2004. It was the first and most important finding. Second and equally important, it was seen that there was a marked stress on reconstruction, response, and, to some extent, on mitigation and preparedness. Third, their list of requirements was primarily aimed at tackling tsunamis more

[414] Asian Development Bank, UN and World Bank (2005)

than other hazards. Finally, it was equally significant to note that the state was confident about arranging resources for disaster management.

Without doubt, it was remarkable to find that their system building, in terms of the new paradigm, started after 2004. It was surprising, considering its economic strength and past disaster experience. A very large majority of the respondents referred to the tsunami experience to relate all or any developments in disaster capacities, in recent times. The next notable feature was the great emphasis on reconstruction and response. Attention was also paid, to some extent, on mitigation and preparedness. Recovery, however, remained a special focus of Tamil Nadu's disaster management. Priority was accorded to restoring road connectivity, power lines, damaged public services of drinking water, sanitation, and health services, said a respondent. A senior functionary informed that Special Implementation Units were set up in different departments to carry out the tasks of reconstruction. A state level institution was set up to coordinate different departments in post-tsunami, reconstruction activity.

Another state level official underlined their ambitious recovery program through which they attempted to address mitigation concerns. They laid great stress on reducing vulnerability by replacing thatched huts with proper houses. By the beginning of 2008, more than 40,000 houses were reconstructed and plans were taken up for another 77,000 units away from the sea coast.[415] The other major projects included construction of five new bridges, reconstruction of 1050kms of roads and drainages, restoration of 6 fishing harbors, 6 fish landing centers and 236 public buildings.[416] Respondents also mentioned about installation of illumination facilities on the beaches, construction of more bridges, and setting up emergency operations centers, with fail-

[415] Government of Tamil Nadu (2008)
[416] Ibid

safe and redundant communication channels, monitoring facilities, computers, phones, satellite nodes and manpower.

Traditional concerns about relief distribution also remained with respondents at the block level. It was their main activity. However, they also spoke of increased capacities in terms of more cyclone shelters, and better warning systems, apart from emergency life saving equipment like life jackets, ropes, cutters, and medicinal kits. Even tents were stored. Respondents in urban locations listed the activities undertaken in those sites which included roads, sanitary complexes, cyclone shelters, drinking water supply projects and shelter belt plantations. Taking note of a recently constructed embankment, one sarpanch observed that flooding in his panchayat was no longer a problem.

Preparedness, in a limited way, was also stressed at some levels. One respondent spoke about wireless sets being given to sarpanches in panchayats on the sea coast. It began as a pilot project in early warning systems in 55 panchayats, and was being extended to more vulnerable panchayats in 13 coastal districts.[417] They had installed loudspeakers in different parts of their panchayat, said one sarpanch. Another respondent in a popular pilgrim town spoke about mikes and loudspeakers being placed in different locations, for communicating emergency messages.

The last notable aspect concerned perceptions regarding resources. There was no dearth of funds. Respondents were emphatic that there were no resource constraints, especially at the state level. In the field, though there were the occasional complaints about not having earth-moving equipment or reliable communication in fishing boats, it was not seen as an obstacle to capacity building. A significant number of senior functionaries who responded to this question maintained that there was no shortfall of resources. The problem was not with funds, as one of them explained, but with the capacity to execute projects and expend the huge amount of funds

[417] Ibid

that was pumped in by government and international agencies. The federal government provided a liberal rehabilitation package of about Rs.2300crores ($560millions appx.) and the state had also obtained $423millions from the World Bank, $143millions from the ADB, and $30millions from the International Fund for Agricultural Development (IFAD).[418] Another district level respondent also agreed and said that at field level, there were constraints of trained manpower and equipment, rather than funds. The lone complaint was from a legislator who believed that his proposals for taking up a number of river embankment projects were not taken up due to paucity of funds. However, as noted in a preceding section, the problem was because of norms for funding developmental schemes.

The responses in Tamil Nadu were surprising. Even though there was no shortage of financial resources, and with its record of development, the state was expected to show greater competencies. Yet, it did not happen until the 2004 tsunami. Moreover, it did not fully adopt the paradigm shift in policy reform, not having undertaken institutional reform. Its focus on reconstruction and response activities were not fully indicative of a comprehensive concern for thorough change.

IV. Conclusions

The correlation of economic prosperity and disaster effectiveness was best seen in Gujarat and Bihar, although there were minor variations to expected responses. The respective positions of Orissa and Tamil Nadu did not fully conform to predictions, either. Overall, empirical data indicated that economic resources played a major role in the ability of states to be effective in disaster management. Virtually, no reform was possible without resources, and it was recognized by all stakeholders. Yet, levels of economic development were not the most crucial determinant of policy change and capacity building reform.

[418] Government of Tamil Nadu (2005)

A comparison of the findings showed that Gujarat had taken up comprehensive, all-hazards disaster management. Vast resources were pumped in the domain not only to ensure recovery and mitigation, but to enhance its capacities in preparedness and response phases. Bihar, which was the poorest of the selected states, had, expectedly, not invested in capacities beyond response and relief objectives. It was overtly concerned with providing relief to the affected, in addition to undertaking evacuation and distributing polythene sheets for temporary shelter. It remained stuck in the traditional mould of a 'relief orientation'. On the other hand, an underdeveloped Orissa had undertaken substantive steps in comprehensively building up its capacities. Setting up the OSDMA as well as the ODRAF was indicative of its thoroughgoing nature. In the latter's case, there was overwhelming attention on reconstruction and restoring societal capacities.

It was important to note that there was no perception of shortage of funds in any of the cases. In all the states, lack of economic resources was not seen as a constraint. While local leaders and field level officials did articulate requirements, it was necessary to recognize that it did not amount to admission of constraints of resources. And save an occasional state level political leader, no other respondent mentioned it. One reason why economic resources did not appear to be a critical variable, as one senior official mentioned, was because most of the funding was done by the federal government. Formula-based fiscal devolutions provided funds and, as one respondent in the federal government stated, no state had voiced any objections.[419] Another major reason why it was not an important factor was because of the increasing role of international agencies. International agencies stepped in as major actors, since they saw disasters as humanitarian crises. They played an important role in providing succor, and became sources

[419] There were a few respondents in the states who complained about lack of transparency and arbitrariness in the NCCF and were unhappy about the provisions of CRF.

for accessing funds. It was seen in Orissa, Tamil Nadu and Gujarat, where a number of national and international NGOs shouldered part of the response and reconstruction tasks. The last, significant feature was that states had recourse to financial resources from multilateral and international agencies like the World Bank, Asian Development Bank, USAID, and DFID. Consequently, the level of economic development ceased to be a determining factor, as states could access funds from federal government, and international agencies and organizations.

Therefore, it can be concluded that while levels of economic development were important factors, they were not critical. With multilateral financing becoming available, economic development of a state was no longer a necessary condition, and certainly not the one that counted as the most significant. Hence, an Orissa that figured low in all socio-economic indices was also able to invest resources and develop its capacities, like the developed Tamil Nadu or Gujarat. Conversely, it also did not explain why a more developed state like Gujarat had no comprehensive disaster management strategy for responding to different disasters before 2001.[420] It became clear that the impetus for investing in disaster management did not depend on a state's level of economic development, but that other factors proved critical for the change.

[420] UNDP (2001)

Chapter 5: Party Systems and Electoral Salience of Disaster Management

Of the different factors that impact disaster management outcomes, in particular, and public administration in general, the nature of the political party system merited serious consideration. Significant correlation with delivery of public goods was seen to depend on the party system in an electorally competitive context. Rational choice explanations, based on electoral calculations, were found to provide credible explanations about delivery of public goods in democracies. It had been noted that party systems played an important role in structuring incentives for political actors. Therefore, it was necessary to examine the impact of party cohesion and political calculations on administrative outcomes in the disaster domain.

In the literature on disaster research, there had been surprisingly few works that examined the relationship between the political system and disaster reform. More had explored the impact of disasters on the political system.[421] An important part of this research was to examine if disaster management figured prominently in political calculations and if there was any imperative to improve its functioning. Disaster management was an appropriate example of public good,[422] given the increasing costs of disasters in terms of losses of human life, and economic damages. It was incumbent on this research to test this political variable, which had not been attempted in scholarly literature on Indian disaster management. Rational choice explanations were studied for a correlation with foreign direct investment, growing lawlessness,

[421] There had been studies that looked at the effects of disasters on politics. Abney and Hill (1966), examined its effects on elections in New Orleans; Sylves (1996) felt that an incumbent US president lost votes in the 1992 election due to federal response in Hurricane Andrew; Garrett and Sobel (2003), studied the political considerations of disaster declarations in US; Tierney (2006) touched on their social repercussions, which impacted elections; Waugh (2006) noted that disaster management claimed political casualties; Arceneaux and Stein (2006) examined the political costs of disaster in a Houston mayoral election; Dreier (2006) wrote about race and class considerations in post-Katrina reconstruction; Brox (2006) found that Hurricane Katrina weakened the position of incumbent mayor in the elections; Morena and Ilcheva (2007) looked at the effects of disasters on electoral contestants in Florida; Arceneaux and Stein (2006) examined the political costs of disaster in a Houston mayoral election

[422] Bueno de Mesquita et al (2000)

and problems in governability in Indian provinces,[423] but not in emergency management. This research aimed to address this gap in disaster research.

The hypothesis that had been tested in this chapter, predicted that the nature of the political party system created electoral salience for the domain, and had an impact on disaster policy reform. At a general, cross-national level, the relationship between democracy and delivery of public goods had been the subject matter of a vast body of literature. A major part concerned the role of party systems and electoral rules. Cohesive party systems had an incentive in delivery of public goods that were considered important for people. The centrality of contestation generated pressures for policy outcomes, and delivery of public goods depended on the cohesion/fragmentation of the party system and its creation of electoral salience for the policy domain. As applied in this research, it tested the argument that the nature of the political party system and the measures of electoral salience it generated were primarily responsible for the capacity building undertaken by some states. It was predicted that more cohesive party systems had positive consequences for disaster management policy domain as they created higher electoral salience and a consequential imperative for policy reform.

This chapter has been organized in five parts. Literature on party systems and electoral compulsions are examined to understand the linkages with delivery of outcomes of public goods. It is predicated on the assumption that elected leaders are responsible for delivery outcomes by the permanent executive.[424] The second section is devoted to describing measures of cohesion of political parties. Based on such indicators, the next section studies the selected cases in the Indian context. In both these parts, this research relies greatly on the work of Chhibber and Nooruddin, who applied the Laakso-Taagepera formula for studying effects of party cohesion on

[423] Kohli (1990); Sinha, Aseema (2005); and Mitra (2006) were illustrative samples of a growing literature
[424] Heady (2001)

delivery of public goods among Indian states.[425] It also brings in literature on the political system in India, which deals with political parties. The fourth section comprehends responses obtained in field research. Theory is tested for a relationship between electoral salience in cohesive party systems and outcomes in disaster management. And finally, the last part analyzes the findings.

I. Democracy and Delivery of Public Goods

The recognition of public administration as a political enterprise had been reinforced with the end of the politics-administration dichotomy debate.[426] This relationship had been implicit in Lasswell's definition of politics as "…who gets what, when, how." The end goals of politics were to be attained through policies that decided, "…..who gets what". Public policy, therefore, had clear political objectives and political leadership had responsibility for outcomes in administration. It found resonance in political science literature, in which rational choice theorists explained the actions of self-interest seeking, rational, political actors in terms of their calculations to gain or retain electoral power.[427] It formed the basis for an inquiry into a correlation between electoral salience in cohesive/fragmented party systems and effective administration in disaster management.

Despite extensive scholarly scrutiny, there had been no consensus on the outcomes of the relationship between democracy and development. The theoretical possibility for a positive correlation was questioned as was the direction of the causal arrow from the former, chronologically, to the latter.[428] Some even argued that democracy was not conducive to economic development because it was not easier for the leadership to provide direction as in

[425] Chhibber and Nooruddin (2004)
[426] Svara (1998) was of the opinion that the dichotomy was a creation of scholars in the mid-20th century only
[427] Norris (2004); Geddes (1994); Holbrook and Dunk (1993)
[428] Kohli (1988) disputed Huntington's "political decay" argument, and also believed that communist countries were not going to become democratic any day soon; Przeworski et al (2000) provided a succinct explanation about contending views on the subject

authoritarian regimes. Greater emphasis on immediate consumption rather than investment, capital growth constraining higher wages, and greater redistributive policies was said to work against growth and development in democracies.[429] On the other hand, modernization theory reversed the causal arrow by postulating democracy to be the end point of a transition that began with economic development.[430] Yet, doubts on democracy's claims of superior socio-economic outcomes, were not supported by empirical evidence, but a negative correlation was not discovered either.[431]

Advocates of democracy stressed its positive features as well as highlighted the negative effects of authoritarian regimes. Disputing charges that they constrained growth, democracies were seen to generate socio-economic development because of their strengths in "allocative efficiency".[432] At a political level, liberty of expression and association in democracies was found to work against arbitrariness in governance.[433] It was found to be more responsive to public needs and aspirations because of strong bonds of responsibility towards citizens. Thereby, literature explained that democracies provided more public goods, improved welfare of the poor by being more responsive and spending more for such services, and having greater income redistribution policies.[434] Similarly, it was noted that democracies have tended to spend more on social sectors that reflected priorities of a larger number of people.[435] Given their broader support base, public policies were seen to be better focused at addressing needs and aimed at uplift of a

[429] Przeworski et al (2000)
[430] Lipset (1954) identified a correlation between economic development and democracy; Przeworski et al (2000); Weiner (1967)
[431] Przeworski et al (2000)
[432] Ibid, 143
[433] Kohli (2003b)
[434] Acemoglu and Robinson (2006); Hecock (2006); Stasavage (2005); Przeworski et al (2000); Block (2001); Bueno De Mesquita et al (2000); Dasgupta (1993)
[435] Bueno De Mesquita et al (2000); Przeworski et al (2000); Holbrook and Dunk (1993)

larger number than in other political systems.[436] The famous example of famines bore repetition. Sen had noted that famines did not occur in democracies. His reasoning was that political leadership effectively addressed incipient famine conditions in order to avoid being punished in elections by poor voters, and that a full-blown crisis was averted through superior informational feedback about field conditions.[437] It had been recorded that democracies resulted in superior outcomes in social sectors, although there had been complaints of selection bias and methodological weaknesses.[438] However, a significant finding was that even those statistical models that found no correlation between development and regime type, admitted to superior distributive effects in democracies.[439]

Notwithstanding the inconclusiveness of empirical studies, the theoretical significance of a vast theoretical literature necessitated an examination of some of the important processes involved. With increasing attention being paid to the role of good governance in development,[440] it was important to understand the institutional structures that determined the latter. The nature of the political party system played a major role in shaping the incentives for electoral gains. Political parties were the principal actors in the political system, and, to a significant extent, it was found that their interests and concerns determined the provision of public goods.[441] A more cohesive system was expected to provide public goods and influence the discourse during elections.

[436] Haggard and Kaufman (1995) argued its corollary, that authoritarian regimes were under pressure to perform because they had to cater to requirements of key supporters
[437] Sen (1981)
[438] Ross (2006)
[439] Przeworski et al (2000)
[440] World Bank (1997); Kohli (2003a)
[441] Ware (1996); Chhibber and Nooruddin (2004)

For political actors and parties, the central feature of democracy was the element of contestation.[442] Electoral contests provided a mechanism for operationalizing peaceful alternation of power.[443] It was seen as the lynchpin in the democratic process, holding a promise of office as well as a threat of punishment, connecting the dots between accountability and governance.[444] It was held that elections provided regular opportunities to "kick the rascals out", while exercising electoral privilege.[445] Contestation, through the party systems and the processes of elections, had provided a mechanism through which political actors maintained accountability.

For voters, electoral contests were an issue of choice, and in the process enabled them to seek accountability in the political system. To begin with, electoral rules provided an opportunity to choose representatives, who reflected voter preferences in policy alternatives. Voters exerted their influence by choosing representatives who best mirrored their preferences or articulated them better.[446] Incumbents, not in line with their voters on preferred outcomes or adopting preferred policy positions, were threatened with rejection. Thus, electoral contests became the forum through which voters determined and communicated their choices in public policy. As a result, it was also surmised that low rates of growth were unlikely in democracies because voters punished leaders who did not deliver.[447]

Electoral systems, it was seen, went a long way in explaining political competition between political actors. Relating it to the number of parties, it had been axiomatically stated that certain electoral systems encouraged fewer number of parties. Duverger was credited for the postulate that a "simple-majority, single-ballot system favors the two-party system", which came

[442] Przeworski et al (2000)
[443] Dahl (1971)
[444] Dasgupta (1993); Norris (2004)
[445] Norris (2004); Bueno de Mesquita et al (2000); Tvinnereim (2004); Arceneaux and Stein (2006)
[446] Lindblom (1968)
[447] Kohli (2003b); Arceneaux and Stein (2006)

closest to "a true sociological law".[448] Majoritarian electoral systems which facilitated first-past-the-post winners through a single-ballot, simple-majority processes were more conducive to decisive government formation.[449] Fewer parties in the electoral fray meant that they focused on programmatic agendas, and not particularistic ones, for they had to "build broad, cross-cleavage coalitions" in order to win elections.[450] On the other hand, party fragmentation had the potential to reduce incentives for broad-based support, as parties only needed to focus on small constituencies to win power.

The nature of the political party system was central to the relationship. Cohesion and fragmentation of the party system was a principal factor, on two counts. First, the nature of the party system largely determined whether public goods or private goods were provided. Cohesive systems, with fewer parties, catered to the needs of all sections and groups of the electorate. Fragmented party systems, with their limited constituencies, had an incentive to focus on the needs and interests of their support groups.[451] Public goods, which were "policies that effect welfare of everyone in the state",[452] became the focus of discourse when there were fewer parties in the political system. Prospects in the next elections became major motivations for political actors to make them issues on the electoral agenda in case of cohesive systems. Electoral salience of public goods, in turn, laid down priorities in the governance agenda.[453]

Second, it was also seen that cohesive systems were more likely to be positively correlated with outcomes of policy change and reform.[454] Dealing with its converse, a vast body of literature had noted that a fragmented political system, represented by more number of parties,

[448] Duverger (1954), 217
[449] Norris (2004); Hallerberg and von Hagen (1999) held that pluralist governments were likely to stay longer in power, be stable and decisive
[450] Chhibber and Nooruddin (2004), p.162
[451] Cox and McCubbins (1986). Redistributive politics were thought to be a part of electoral politics.
[452] Bueno de Mesquita et al (2000), p.64
[453] Ware (1996)
[454] Haggard and Kaufman (1995)

had negative consequences for governance outcomes.[455] Several factors were discussed in studies that largely focused on fiscal policies. While most talked about the size of the ruling coalition in their attempts to correlate with policy outcomes, it was also accepted that the same logic applied to the number of political parties in the system. Roubini and Sachs explained that governments were not solely responsible for governance outcomes and that the number of parties in a system also represented "dispersal" because of alternation of power.[456] On a similar line, Chhibber and Nooruddin made the argument that the entire party system was a variable, and not merely a ruling party or coalition.[457] It did not matter if the parties were in the government, as a part of the ruling coalition, or in opposition, as legislative rules allowed even smaller or individual players to be heard and to impact the policy making exercise. The party system, whether it was cohesive or fragmented, had significant consequences because political actors in competitive electoral systems always considered their competitor's position while framing policy.[458] Therefore greater number of political actors in a system meant that policy makers had to factor many positions, negatively impacting the possibilities of reform.

Empirical studies had noted that a larger number of parties resulted in delayed decision making as there was distributional struggle among the different support groups.[459] The empirical study of Roubini and Sachs confirmed that fragmented systems had sub optimal outcomes in the form of higher public debt as there was conflict among different groups.[460] Larger coalitions were found to delay important policy decisions as there were problems in reaching agreement,[461]

[455] Weingast, Shepsle and Johnsen (1981); Alesina and Perotti (1994); Roubini and Sachs (1989); Kontopoulos and Perotti (1999); Hallerberg and von Hagen (1999); Chhibber and Nooruddin (2004)
[456] Roubini and Sachs (1989), 905
[457] Chhibber and Nooruddin (2004)
[458] Alesina and Perotti (1994) noted that parties' decisions on important policy domains depended on the information they had about their competitors
[459] Ibid
[460] Roubini and Sachs (1989)
[461] Duverger (1969)

until the concerns of all the groups were addressed.[462] It was argued that legislatures were also responsible for policy distortions because of their large membership.[463] There was a marked increase of 'pork-barrel' projects, which were unwarranted on purely efficiency considerations. A greater number of political parties in Parliament, which indicated fragmentation, resulted in poor policy outcomes.[464] Political actors being decision makers, a larger number of them translated into greater reluctance to and avoidance of taking responsibility.[465] Overall, it was held that party fragmentation had a negative correlation with policy change. Coalition governments were also expected to have shorter tenures,[466] increasing the element of uncertainty. Therefore, fewer parties were seen to introduce and implement reform in a decisive manner, once the electoral imperative became clear.

Thus, it was hypothesized that states with fewer political parties were more likely to stress public goods in elections and also successfully undertake policy reform. Disaster management, a good example of public good, was expected to be made an electorally salient issue in cohesive systems. Given the competitive context of the party system, it was hypothesized that they were most likely to highlight the provision of public goods during electoral contests. In turn, the voter salience of these issues became the basis for pursuing an active governance agenda that aimed to provide public goods. Conversely, private goods and identity concerns of divided constituents were more likely to be prominent in fragmented party systems, with lesser likelihood of disaster management being debated in electoral contests. Therefore, field research was likely to indicate higher voter salience and greater party cohesion in states that had superior outcomes in disaster management in India. In the states of Gujarat,

[462] Alesina and Perotti (1994); Bueno de Mesquita et al (2000)
[463] Weingast, Shepsle and Johnsen (1981)
[464] Volkerink and de Haan (2001)
[465] Kontopoulos and Perotti (1999)
[466] Ware (1996)

Orissa and, even, Tamil Nadu, there were expectations of better scores on these counts. Conversely, Bihar was likely to reveal greater fragmentation and poor electoral salience of disaster management, to prove the hypothesis.

II. Party Cohesion

The objective in this chapter had been to examine the impact of the party system and the electoral salience of the policy domain on outcomes in disaster management in the four states. Literature had noted a correlation between electoral processes in a democracy, and policy outcomes. It was held that organization of the system of political parties, which were an intrinsic part of the democratic process, had a significant impact on improving delivery of public goods. Electoral competitiveness of political parties created incentives to provide good governance. Policy issue salience with voters, mediated party cohesion and the delivery of public goods. Party cohesion was most important, as electoral salience by itself faced enormous hurdles for being translated to policy outcomes.

The next important step was to determine levels of party cohesion and fragmentation in the selected states. This research adopted the model developed by Markku Laakso and Rein Taagepera for establishing the Effective Number of Parties (ENP).[467] It was broadly based on the Herfindahl- Hirschman index that was used to establish concentration of industry.[468] Their model had been applied to derive effective number of electoral or parliamentary parties, based on calculations of votes or seats that got in elections. The share of legislative seats was the basis for Effective Number of Parliamentary Parties, and votes received by each party enabled the calculation of the Effective Number of Electoral Parties. While the former indicated party cohesion inside the legislature, the highest body responsible for policy reform, the latter showed

[467] Laakso and Taagepera (1979).
[468] Feld (2007); Ziegfield (2008)

party presence in the system as a whole. The basic formula remained the same, with variations for seats won or votes polled by each party. It was

$$n = 1/\sum p_1^2$$

'n' was the effective number of parties and $\mathbf{p_1}$ was the proportion of seats or votes of each party. A lower score of ENP indicated greater cohesion and concentration. This formulation had been widely used in literature, indicating its acceptance as a valid measure of party cohesion.[469] In the context of India, Chhibber and Nooruddin had used it to explain variation across Indian states in delivery of public goods.[470]

In addition to the usage of the Laakso-Taagepera model, this research also relied on Chhibber and Nooruddin's theoretical framework for application in Indian disaster research. Equally important, their research design had incorporated a comparison among provinces, which was also the method adopted in this study. This research was in full agreement with Chhibber and Nooruddin for adopting a comparative approach between different provinces. Moreover, for the same reasons that they offered, this research also looked at the presence of parties within the state legislatures, instead of their share of votes, since state governments were being evaluated for effective policy outcomes.[471] The Effective Number of (Parliamentary) Parties was a valid indicator of the abilities of the state's highest body for policy deliberation, in bringing about reform and change in the delivery of public goods. Disaster management was a responsibility of state governments in India and, therefore, ENPs at federal level and in the local bodies were not examined. This research accepted their contention and used the framework to test for efficacy of

[469] It had been widely used in literature. A brief sampling of literature that had been cited in this work included Norris (2004), Chhibber and Kollman (2004), Chhibber and Nooruddin (2004), Tvinnereim (2004), and Ziegfield (2008)
[470] Chhibber and Nooruddin (2004)
[471] Ibid, p.165. They made a valid point that "the number of competitive parties in the state assembly is more important than the number of electorally competitive parties when the dependent variable of interest is the policy output of a given state government."

outcomes in disaster management in the four selected states in India. For these reasons, this work owes a debt of gratitude to Chhibber and Nooruddin.

Party cohesion and fragmentation in the highest policy making bodies of Bihar, Gujarat, Orissa and Tamil Nadu was determined by the adoption of the Laakso-Taagepera formula. General elections to their state legislatures held since 1990 were studied. It was the same time period as was used to examine measures of the dependent variable. This research identified a political party as one that had been recognized by the Election Commission of India as a national party, or a state party recognized in the state in which elections were held, or a state party that was a recognized party in other states (and not the one in which elections were held), or a party that was classified as being unrecognized.[472] The formulation also considered the large number of independents who belonged to no party, but whose numbers were significant enough to warrant consideration. Hence, to obviate errors of underestimation of fragmentation, small parties and independents were treated as separate entities and counted.[473]

III. Party System in Indian States

Most works on party systems included detailed explanations that traced their evolution over a long period of time.[474] Development of political institutions, such as political parties, had been a cause for concern in new democracies for purposes of consolidation and stability.[475] In comparison, a democratic India, which became independent in 1947, appeared to be a young nation without concerns about the stabilizing forces of established political institutions. Observers found that political institutions were well developed and that the party system played a

[472] Election Commission of India (2004). The Representation of People Act 1951, Sec. 29A authorized the Election Commission of India to register political parties

[473] Laakso and Taagepera (1979) said that if smaller groupings were banded together under one entry, it may lead to underestimation of fragmentation.

[474] Duverger (1954); Ware (1996); Chhibber and Kollman (2004)

[475] Huntington (1968)

major role in ensuring stability in the fledgling democracy.[476] In the process, it was found to disabuse popular notions about political institutions in newly democratic countries.[477] It was seen that India's dominant party helped mediate societal conflict, to a great extent, and enabled nation-building. Political decisions accommodated diverse interests, an example of which was the linguistic reorganization of provinces in the 1950s.[478]

The Indian National Congress (INC), popularly called the Congress, which had spearheaded the freedom struggle, was the principal actor in a dominant party system in India's early decades.[479] Its centrality was accepted, given its success in addressing organizational issues as well as its ability to contain and accommodate sectional conflict.[480] The Congress Party was also credited for preventing fissiparous tendencies from destabilizing the nation,[481] although some considered it an anomaly due to the cleavages in Indian society.[482] The situation changed only in the later decades, when it was noted that there was steady deinstitutionalization and increased populism, as well as capture of political parties by interest groups.[483] An increase in the number of political parties since the 1970s was also recorded.[484]

Notwithstanding, the role of Congress party in the nation's politics, state level politics displayed a variety that defeated any attempt at treating party systems uniformly. The role of caste in Indian politics was a well known phenomenon.[485] Yet, an ideology based party like the Communist Party of India (Marxist), established itself as a major force in the states of West Bengal, Kerala and Tripura, while religion was a major political force in the western state of

[476] Hasan (2002); Ganguly (2007); Gowda and Sridharan (2007)
[477] Kothari (1970),p. 433, specifically contested Marxist notions as well as Huntington's claims
[478] Kohli and Mullen (2003)
[479] Kothari (1970)
[480] Weiner (1967)
[481] Haggard and Kaufman (1995)
[482] Chhibber and Petrocik (1989)
[483] Haggard and Kaufman (1995); Ware (1996)
[484] Chhibber and Kollman (2004)
[485] Weiner (1954); Kothari (1975); Frankel (1988); Hasan (1989); Frankel (2006)

Punjab.[486] Subsequently, growth of regional political parties became a noticeable trend.[487] While identity politics had always existed in the form of regional parties in the South Indian state of Tamil Nadu, political associations based on other social cleavages arose in states like Bihar and Uttar Pradesh.[488] In the welter of different party systems in the states, the results from the Laakso-Taagepera formulation were in broad conformity with expected outcomes about the nature of party cohesion. [489]

Bihar

Even before 1947, Bihar was always considered a fractious state, where governance was difficult.[490] The number of parties appeared to validate complaints of governance problems in this state.

Table 10. Elections to Bihar Legislative Assembly, 1990 [491]

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	237	39	3721392	11.61
CPI	109	23	2112887	6.59
CPM	31	6	427214	1.33
INC	323	71	7946635	24.78
JD	276	122	8212666	25.61
JNP(JP)	158	3	494717	1.54
JMM	82	19	1008174	3.14
IPF	82	7	889068	2.77
JKD	28	1	134827	0.42
MCOR	11	2	70365	0.22
SOP(L)	47	1	109871	0.34
IND	4320	30	5907134	18.42
Total seats		**324**		
Effective Number of Political Parties		**4.67**		

[486] Hart (1988)
[487] Hasan (2002); Sridharan (2002); Kumar (2004)
[488] Kothari (1975); Weiner and Field (1975); Kohli (1988); Manor (1988); Hart (1988); Hasan (1989); Frankel (2006); Ziegfield (2008)
[489] All the tables are based on data made available by the Election Commission of India http://www.eci.gov.in/StatisticalReports/ElectionStatistics.asp retrieved 5 January 2008
[490] Mason (1985)
[491] These included political parties that won seats in the state legislature. Complete names of political parties had been provided in Appendix B. Independents had been indicated as a separate category.

Bihar was known for social cleavages in the polity.[492] From the table, it was evident that there was a high level of party fragmentation, which possibly mirrored societal divisions. The large number of legislative parties had serious implications for public administration. An important feature was that fragmentation was consistently high, although the number of parties declined in later elections.

Elections were held regularly, at five-yearly intervals in 1990, 1995, 2000, and 2005. However in February 2005, they did not throw up a decisive majority for any one political party or grouping, resulting in general elections after eight months. The 1990 elections marked the end of the Congress, ascent of the Janata Dal (JD), which remained in power till 2005, as Rashtriya Janata Dal (RJD).

Table 11. Elections to Bihar Legislative Assembly, 1995

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	315	41	4480363	12.96
CPI	61	26	1645765	4.76
CPM	31	6	497570	1.44
INC	320	29	5622952	16.27
JD	264	167	9669589	27.98
SAP	310	**7**	2440275	7.06
BSP	161	2	462291	1.34
JMM	63	10	803132	2.32
JPP	33	2	116936	0.34
SP	176	2	577067	1.67
BPP	259	1	1050557	3.04
CPI(ML)(L)	89	6	814034	2.36
CVP	15	1	95935	0.28
JKP	29	1	63780	0.18
JMM(M)	58	3	331821	0.96
JMM(S)	22	6	436102	1.26
MCOR	5	2	100992	0.29
IND	5674	12	4772494	13.81
Total seats		**324**		
Effective Number of Political Parties		**3.345**		

[492] Frankel (2006)

Despite more parties, an important result of this election was that the JD gained a simple majority on its own strength. In the earlier 1990 elections, it had to depend on other parties for its survival, not having a simple majority on its own strength.

Table 12. Elections to Bihar Legislative Assembly, 2000

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	168	67	5424687	14.64
BSP	249	5	701936	1.89
CPI	153	5	1334386	3.60
CPM	21	2	338198	0.91
INC	324	23	409646	11.06
JD(U)	87	21	239667	3.47
CPI(ML)(L)	107	6	925253	2.50
JMM	85	12	1306152	3.53
RJD	293	124	10500361	28.34
SAP	120	34	3205746	8.65
UGDP	6	2	9629	0.26
KSP	7	2	132835	0.36
MCO	9	1	104450	0.28
IND	1482	20	4211341	11.37
Total seats		**324**		
Effective Number of Political Parties		**4.717**		

The JD underwent splits and emerged as the Rashtriya Janata Dal (RJD). The RJD was able to retain power by taking the support of other parties, including its one-time rival, the Congress. A coalition government came to power after the elections, and included the Congress. After the 2000 election, a new province, Jharkhand, was carved out of Bihar. Consequently, the number of legislative seats came down from 324 to 243. The BJP which had won more seats in south Bihar went on to form the government in the newly constituted state of Jharkhand. The creation of the new state had important ramifications for Bihar, as the new state retained an overwhelming majority of mineral resources and the main sources of revenue. The state that remained was predominantly agrarian.

Table 13. Elections to Bihar Legislative Assembly, February 2005

PARTY	SEATS CONTESTED	WON	VOTES POLLED	%Votes
BJP	103	37	2686290	10.97
BSP	238	2	1080745	4.47
CPI	17	3	386236	1.58
CPM	12	1	156656	0.64
INC	84	10	1223835	5.00
NCP	31	3	240862	0.98
CPI(ML)(L)	109	7	610345	2.49
JD(U)	138	55	3564930	14.55
RJD	215	75	6140223	25.07
SP	142	4	658791	2.69
LJP	178	29	3091173	12.62
IND	1493	17	3957945	16.16
Total seats		**243**		
Effective Number of Political Parties		**5.201**		

The state went through a political crisis for eight months as no political grouping had won enough seats for a simple majority. Finally, elections were held again in October 2005 and they provided a clear majority for a center-right wing coalition.

Table 14. Elections to Bihar Legislative Assembly, October 2005

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	102	55	3686720	15.65
BSP	212	4	981464	4.17
CPI	35	3	491689	2.06
CPM	10	1	159906	0.68
INC	51	9	1435449	6.09
NCP	8	1	186936	0.79
CPI(ML)(L)	85	5	559326	2.37
JD(U)	139	88	4819759	20.46
LJP	203	10	2615901	11.10
RJD	175	54	5525081	23.45
SP	158	2	594266	2.52
AJVD	7	1	49869	0.71
IND	746	10	2065744	8.77
Total seats		**243**		
Effective Number of Political Parties		**4.238**		

It was evident from the above that there were a large number of actors inside the state legislature. By averaging all the results, Bihar had an Effective number of **4.434** political parties since 1990. Even when the October 2005 election results were not counted, if considered a runoff, the effective number of political parties, remained higher at **4.483**. Among the four selected cases, it had the highest score on fragmentation, which gave a fair indication of the difficulties in bringing about much needed policy reform in disaster management. A discussion of the dependent variable had already indicated the state's weak performance, and the above data provided prima facie confirmation.

Gujarat

On the western coast of India, Gujarat had been a part of the Bombay province, until it became a separate state in 1960 as a result of linguistic reorganization. The Congress Party held sway over the state till 1995, relying on its vote banks and coalitions.[493] Thereafter, the right wing Bharatiya Janata Party (BJP) had won every election in the state in 1995, 1998, 2002 and 2007.

Table 15. Elections to Gujarat Legislative Assembly, 1990[494]

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	143	67	3386256	26.69
INC	181	33	3899159	30.64
JD	147	70	3725148	29.36
YVP	61	1	107220	0.85
IND	980	11	1323790	10.44
Total seats		**182**		
Effective Number of Political Parties		**3.158**		

After 1995, the contest was mainly between two parties, BJP and the Congress Party. And as the following tables revealed, the BJP was successful in winning a majority of seats in all the

[493] Yagnik and Sud. (2004)

[494] These included political parties that won seats in the state legislature. They had been indicated in an abbreviated form here and their complete names had been provided in Appendix B. Independents had been indicated as a separate category.

subsequent elections. The 1995 elections saw only these two parties win seats, in addition to a number of independent candidates.

Table 16. Elections to Gujarat Legislative Assembly, 1995

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	182	121	7672401	42.51
INC	181	45	5930216	32.86
IND	1617	16	3376637	18.71
Total seats		**182**		
Effective Number of Political Parties		**1.985**		

Factional politics had occupied center stage after 1995, as there was a split in the BJP and a breakaway faction came to power, supported by arch rival Congress. Nevertheless, it did not last long. Long before the expiry of the Assembly's tenure, the incumbent government lost majority.

Table 17. Elections to Gujarat Legislative Assembly, 1998

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	182	117	7300826	44.81
INC	179	53	5677386	34.85
JD	91	4	429283	2.63
AIRJP	168	4	1902171	11.68
SP	33	1	64913	0.40
IND	415	3	854142	5.24
Total seats		**182**		
Effective Number of Political Parties		**2.003**		

The next elections were held after the 2001 earthquake that devastated large parts of Gujarat. The results of the 2002 elections, therefore, held great significance for this research. As the results showed, the incumbent party was able to retain power, with an increase in the number of its seats. Not only did the BJP gain more seats, it also gained in terms of votes. Another significant feature of the 2002 election was that despite a reduction in the number of seats, the

opposition Congress also received more number of votes than the previous election. Both the main parties gained at the expense of smaller political parties.

Table 18. Elections to Gujarat Legislative Assembly, 2002

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	182	127	10194353	49.85
INC	180	51	8033104	39.28
JD(U)	29	2	175024	0.86
IND	344	2	1169711	5.72
Total seats		**182**		
Effective Number of Political Parties		**1.768**		

The 2007 elections returned the BJP to power again, although with a slightly reduced majority. It won the same number of seats as in 1998, though it received nearly 5% more votes.

Table 19. Elections to Gujarat Legislative Assembly, 2007

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	182	117	10739972	49.12
INC	173	59	8309449	38.00
JD(U)	35	1	144062	0.66
IND	480	2	1444605	6.61
NCP	10	3	230517	1.05
Total seats		**182**		
Effective Number of Political Parties		**1.928**		

The results demonstrated a high level of cohesiveness of the party system in Gujarat. For all elections since 1990, the effective number of political parties in Gujarat closely approximated a two-party system, with a score **2.168** parties. It was dominated by one party, the BJP, although it was evident that the main opposition party had also received a significant number of votes. Party cohesion was consistent with the policy reform that was taken up. The results provided a credible explanation to the scale of reform.

Orissa

The eastern state of Orissa had never been a consistent support base for the Congress. The 1990 elections were an electoral debacle for the Congress, due to a landslide victory for the Janata Dal. The latter won a mind boggling 83% of the assembly seats, in one of the most one-sided election results. The performance of the Congress Party was dismal, winning less than a fourteenth of all seats.

Table 20. Elections to Orissa Legislative Assembly, 1990 [495]

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	63	2	390060	3.56
CPI	9	5	326364	2.98
CPM	3	1	91767	0.84
INC	145	10	3264000	29.78
JD	139	123	5884443	53.69
IND	389	6	807000	7.36
Total seats		**147**		
Effective Number of Political Parties		**1.416**		

Despite its earlier majority, the JD lost power to the Congress in 1995. The Congress wrested victory, even though it received only 4% more votes than its incumbent rival.

Table 21. Elections to Orissa Legislative Assembly, 1995

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	144	9	1245996	7.88
CPI	21	1	271199	1.71
INC	146	80	6180237	39.08
JD	146	46	5600853	35.41
JMM	16	4	307517	1.94
JPP	4	1	27494	0.17
IND	682	6	1661485	10.51
Total seats		**147**		
Effective Number of Political Parties		**2.507**		

[495] These included only those political parties that won seats in the state legislature. They have been indicated in an abbreviated form here and their complete names have been provided in Appendix D. Independents have been indicated as a separate category.

The next elections were held in 2000, after the 1999 super cyclone. The incumbent Congress Party was routed by the winning coalition of Biju Janata Dal (BJD) and BJP. An increase in the number of parliamentary parties was evident.

Table 22. Elections to Orissa Legislative Assembly, 2000

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	63	38	2570074	18.20
CPI	29	1	172398	1.22
CPM	15	1	109256	0.77
INC	145	26	4770654	33.78
JD(S)	24	1	118978	0.84
AITC	36	1	110056	0.78
BJD	84	68	4151895	29.40
JMM	21	3	301729	2.14
IND	236	8	1506216	10.66
Total seats		**147**		
Effective Number of Political Parties		**3.194**		

The performance in the 2000 elections was repeated in 2004, and the ruling coalition retained power, although the Congress improved its tally of seats as well as the polled votes. Importantly, the number of parties increased from before.

Table 23. Elections to Orissa Legislative Assembly, 2004

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	63	32	2898105	17.11
CPI	6	1	129989	0.77
CPM	3	1	93159	0.55
INC	133	38	5896713	34.82
BJD	84	61	4632280	27.36
JMM	12	4	301777	1.78
OGP	4	2	217998	1.29
IND	295	8	2065650	12.20
Total seats		**147**		
Effective Number of Political Parties		**3.475**		

Largely on the basis of a highly skewed 1990 result, the effective number of political parties averaged over four general elections, stood at **2.64**. An important feature was an increasing trend towards growing fragmentation in the last three elections. Yet, overall it continued to have a higher score on cohesion, with fewer effective political parties. A notable feature was that the policy reform process began after 1999, even though the 1990 elections had produced the most cohesive result. Apart from that significant point, there was a neat correlation between the high level of party cohesion and the policy reform in capacity building.

Tamil Nadu

This southern state was long considered as the flag bearer of regional politics. Regional parties had held sway in Tamil Nadu since the 1960s.The Congress party, which had been the dominant party in the country, had not headed a government in the state since 1967. Even national parties underwent a regional transformation in the state.[496] The issues and the parties in this state had a consistent, regional orientation. While they entered into alliances with national parties for federal politics, only the regional parties retained power at state level. Scholars had termed it the closest to a two party system, given the alternation of power between two major regional parties.[497] A striking feature of election results in this state had been the regularity with which the two regional rivals, Dravida Munnetra Kazhagam (DMK) and the Anna Dravida Munnetra Kazhagam (ADMK)[498] replaced each other in government. In most cases, they replaced each other with nearly the same margin of victory in terms of seats or votes. The details in the following tables made it clear.

[496] Hart (1988); Weiner and Field (1975); Kothari (1975)
[497] Weiner and Field (1975)
[498] It was known as the ADK (JL) in 1989, ADK in 1991, and AIADMK in 2006

Table 24. Elections to Tamil Nadu Legislative Assembly, 1989[499]

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
CPI	13	3	295170	1.22
CPM	21	15	851351	3.53
INC	214	26	4780714	19.83
ADK	4	2	148630	0.62
DMK	202	150	8001222	33.18
ADK(JL)	198	27	5098687	21.25
ADK(JR)	175	2	2214965	9.19
JNP	10	4	282647	1.17
IND	2123	5	2164484	8.98
Total seats		**234**		
Effective Number of Political Parties		**2.266**		

Federal politics, the death of Rajiv Gandhi in 1991, and perceptions of the ruling DMK as a party favorable to his killers, led to an invocation of Article 356 of the constitution to dismiss the government and bring the state under central rule.[500] Thereafter, elections had been held every five years, in due course.

Table 25. Elections to Tamil Nadu Legislative Assembly, 1991

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
CPI	10	1	305143	1.24
CPM	22	1	777532	3.15
ICS(SCS)	13	1	57249	0.23
INC	65	60	3743859	15.19
JD	15	1	415947	1.69
ADK	168	164	10940966	44.39
DMK	176	2	5535668	22.46
PMK	194	1	1452982	5.89
TMK	11	2	371645	1.51
IND	1771	1	390227	1.58
Total seats		**234**		
Effective Number of Political Parties		**1.795**		

[499] These include only those political parties that won seats in the state legislature. They have been indicated in an abbreviated form here and their complete names have been provided in Appendix E. Independents had been indicated as a separate category.

[500] Government of India (2007). Article 356 of the Indian Constitution enabled the federal government to dismiss the state government for failure of constitutional machinery.

Having lost power in 1991 to its regional rival, the DMK staged a come back with an emphatic majority of seats and votes.

Table 26. Elections to Tamil Nadu Legislative Assembly, 1996

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	143	1	490453	1.81
CPI	11	8	575570	2.12
CPM	40	1	456172	1.68
JD	16	1	117801	0.43
JP	50	1	150134	0.55
ADMK	168	4	5831383	21.47
DMK	182	173	11423380	42.07
FBL	1	1	75324	0.28
PMK	116	4	1042333	3.84
TMC(M)	40	39	2526474	9.30
IND	3857	1	1022339	**3.76**
Total seats		**234**		
Effective Number of Political Parties		**1.736**		

The pattern of anti-incumbency sentiment was evident in the loss of the incumbent DMK. The difference in the number of seats was disproportionate to the votes received, and the ADMK gained a hundred seats more than its rival.

Table 27. Elections to Tamil Nadu Legislative Assembly, 2001

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
BJP	21	4	895352	3.19
CPI	8	5	444710	1.59
CPM	8	6	470736	1.68
INC	14	7	696205	2.48
ADMK	141	132	8815387	31.44
DMK	183	31	8669864	30.92
FBL	1	1	39248	0.14
PMK	27	20	1557500	5.56
TMC(M)	32	23	1885726	6.73
MADMK	3	2	129474	0.46
IND	978	3	1728440	6.16
Total seats		**234**		
Effective Number of Political Parties		**2.816**		

After the South Asian tsunami of December 2004, elections were held in early 2006. Conforming to the pattern of anti-incumbency, the ruling AIADMK gave way to a coalition, led by the DMK party.

Table 28. Elections to Tamil Nadu Legislative Assembly, 2006

PARTY	SEATS CONTESTED	WON	VOTES POLLED	% Votes
CPI	10	6	531740	1.61
CPI(M)	13	9	872674	2.65
INC	48	34	2765768	8.38
AIADMK	188	61	10768559	32.64
DMK	132	96	8728716	26.46
MDMK	35	6	1971565	5.98
PMK	31	18	1863749	5.65
DMDK	232	1	2764223	8.38
VCK	9	2	426321	1.29
IND	1222	1	995345	3.02
Total seats		**234**		
Effective Number of Political Parties		**3.757**		

The predominance of the two regional parties was evident, as was the eclipse of national players. The effective number in Tamil Nadu was **2.47** political parties, when all the five elections since 1989 were counted. And if only the last four were considered, in which the legislature completed its full term of five years, the effective number increased marginally to **2.53** parties. The remarkable feature of Tamil Nadu was the unfailing regularity with which incumbent governments were voted out. However, the higher levels of party cohesion provided a plausible explanation to the reform process that was begun after 2004.

IV. Electoral Salience of Disaster Management

The governance implications of party cohesion were expected to result in electoral salience of policy issues. Political parties created voter salience of public goods and, thereafter, pursued them in governance agendas. The First-Past-The-Post electoral system, which was

followed in India, encouraged parties to advocate programmatic issues that appealed across cleavages and divisions in society.[501] The Laakso-Taagepera formulation provided a scale of party cohesion within state legislatures, with higher scores indicating greater fragmentation. While a score of two represented a perfect two-party system, it indicated the predominance of a single party if it was less than two. Accordingly, it was found that that party cohesion was highest in Gujarat, followed by Tamil Nadu and Orissa, with Bihar being the most fragmented.

At a fundamental level, a positive correlation was found between party cohesion and policy reform. It was noted that Gujarat, Orissa and Tamil Nadu, which had relatively cohesive systems, had undertaken significant capacity building in disaster management. Yet, it was necessary to derive a direct relationship between the two and, hence, one hundred and seventy nine stakeholders in the domain were interviewed in field research. However, it was not possible to ask about party cohesion or fragmentation, and its relationship with policy outcomes. It was explained in an earlier section that party systems impacted voter salience of issues by emphasizing the public or private nature of goods in elections. Hence, the respondents were asked about the electoral salience, which was the intervening variable, of disaster management. Controlling for the timing of disasters, as far as possible, by considering the time gap between their occurrence and elections, the interviewees were asked about the role played by disaster management in electoral contests to the state legislature. Electoral resonance of the policy issue was tested, with the expectation that it would have higher salience with voters in states with cohesive party systems. In the process, they would have proved to be significant and powerful drivers of reform.

Respondents were asked if disaster management was an important public issue. Second, they were asked to recollect if it had played an important role in party agendas during elections.

[501] Chhibber and Nooruddin (2004)

The third query was more a follow-up to the second, and participants were asked to give details if there was electoral salience or provide reasons if there was none. It was presumed that incumbent parties, in cohesive party systems, would have made it an issue if they had been able to deliver favorable outcomes, and the challenger was expected to mount attacks if they had not. The common feature of vulnerability to hazards was presumed to render it an important public good in all states.

The respondents were political functionaries who took part in elections to the state legislature as well as the local bodies. Being political activists, they were expected to be knowledgeable about contentious issues that dominated elections. Local body leaders were also included because they formed the grass roots support base for all elections, whether it was to the state legislature or federal Parliament. On the other hand, bureaucratic personnel at different levels of governance were interviewed as they were associated with the conduct of elections. Their constant interaction with political leaders during and after elections made them relevant stakeholders.

Bihar

All the respondents in Bihar, without exception, accepted that disaster management was an important and relevant public good. However, they were equally emphatic that it was not an issue that dominated or even figured in election agendas. They were nearly unanimous about the absence of electoral salience of this issue. It was not an issue that figured in the list of contentious items that decided electoral fortunes. These responses were same at all levels, from both elected officials and civil servants.

All of them claimed that it was the case in all elections, and not merely to the state assembly, with one exception. One case was mentioned by a block level official, in which an

incumbent candidate affiliated to a prominent national party did lose in the elections to gram panchayat, due to poor performance in tackling disasters. It was an exception rather than a significant observation for two reasons. As pointed out, this research was considering elections only to the state legislature whereas this case related to a gram panchayat. States had primary accountability and local body leadership did not bear ultimate responsibility for disaster management. Electoral salience appeared to have been attributed wrongly. And such conclusions found support from another respondent who made no mention of the incident, despite belonging to the party that lost.

The lack of electoral salience did not remain a puzzle either. A couple of elected leaders replied that good governance was never forgotten by people during elections for it created goodwill and support for the incumbent party. Yet, the fact that it did not actually play a role was answered in terms of greater salience of other and more contentious issues. An extremely large section of respondents pointed out that the issue of caste mattered most in elections. It overwhelmed all other issues, including good governance. The centrality of social cleavages had long been recognized in Bihar.[502] Political actors, at state and local levels, were near unanimous in saying that elections were decided on the basis of primordial affinities. One public representative elaborated that caste, group loyalties, money, and muscle power were the determinants of electoral victory, and not issues of governance.

Some rationalized that the time gap between disaster occurrence and elections as well as the short span of public memory affected issue salience. Another significant reason put forward by a few respondents, was that political divisions were subsumed to the immediate task of disaster response. A few interviewees proffered the reason of low levels of education as a result

[502] Frankel (2006)

of which people continued to associate natural disasters with divine will. Consequently, it was rationalized that the incumbent government was not held responsible for poor disaster administration, to a great extent.

As a result, despite recognizing its importance, disaster management never became a salient issue during elections. The responses were according to expectations, since a fragmented party system, as in Bihar, was predicted to be providing private goods that addressed limited support groups. Hence, despite the recognized importance as a public good, it never entered electoral discourse.

Orissa

Disaster governance in Orissa had stood out for its pioneering, capacity building reform. A political party system explanation was consistent with the low scores on the Laakso-Taagepera formulation on fragmentation. The ENP gave a good indication of the fewer obstacles that were likely to hamper reform.

The party cohesion variable was reflected through the factor of electoral salience. Disaster management was seen to be an important issue that resonated with voters. It was found to be especially salient in the 2000 elections. They took place soon after the super cyclone in 1999, leading to a significant number of respondents attributing the loss of the incumbent Congress party to its handling of the disaster. A significant section of participants, some of whom had contested the 2000 elections, were of the opinion that the perceived failure in providing public goods in the context of the 1999 super cyclone had led to the defeat of the incumbent Congress Party. There were a few respondents who believed, instead, that dissidence and infighting in the ruling party were responsible. Conceding that the latter scenario was partly

true, as one member of that party admitted, he still highlighted the salience of the policy issue during elections.

There were a good number of respondents, who believed otherwise. They felt that voters had not considered disaster management performances or promises during elections. Even in the 2000 elections, they disputed its central role on two counts. First, as one legislator said, it was erroneous to conflate political sentiments in a few districts with the whole state. In his opinion, the 1999 cyclone affected only a couple of coastal districts. While conceding that the politics of Orissa was controlled by coastal districts, he did not believe that it figured on the political agenda. Moreover, he subscribed to the argument that the loss was due to dissidence and factional politics in the party. A volunteer working with an NGO was of the firm opinion that governance in disaster management never became an election issue.

A second line of reasoning was followed by another legislator, although it went against the assumption of political responsibility and control of administrative actions. He drew a subtle, but important distinction between administrative machinery and its political leadership. He believed that the former were held responsible for public goods in disaster management and that the political actors were not penalized because they had no role to play in the top-down, bureaucratic exercise.

Overall, based on the significant number of those who believed that it was salient, it was fair to accept its importance as an explanatory factor, at least in the 2000 election. Importantly, those who highlighted its significance, however, did not mention a role for the disaster domain in subsequent elections. A possible explanation was the proximity of elections to the disaster event. It, therefore, became clear that the issue salience of disaster management in the 2000 elections appeared to have been an important driver of policy reform in Orissa and that the incumbent

party lost power for a variety of reasons, one of which was its poor performance in the super cyclone.

Gujarat

Of all the selected cases in this study, Gujarat had reported the highest score in party cohesion. Its performances in disaster management were also consistent with predictions. Yet, on the issue of electoral salience, the results were curiously inconsistent with expectations. One of the elections was held in 2002, after the Kutch earthquake in 2001. The incumbent BJP party came back to power, returning with an even higher tally of legislative seats than before. It would have been entirely consistent with the hypothesis if the incumbent party had used its record in disaster governance to seek votes. The responses in the field, however, indicated a medium level of salience for the issue during the elections.

The responses regarding lack of electoral salience fell into two broad categories. First, a larger group held a seemingly atheoretical opinion that governance and development were beyond politics and political divisiveness. Therefore, they concluded, it never became a contentious issue on which elections were fought. Many of them believed that disasters presented an opportunity to undertake thorough and far-reaching developmental reforms. They saw no electoral considerations for the delivery of public goods. Another explanation relied on their strong tradition of community organization during crises. In several village panchayats, there were examples of community mobilization and consensus building among all political groupings, when it came to disaster management. They came together, overcoming partisan divisions. As a surprising example, they pointed out to Gujarat's conflict with the center for more funds, after the 2001 earthquake. It was significant to note that the state did not hesitate to clash with the center, even though the same political party was in power at both places.

A significant group of respondents, however, believed that election contests did have disaster management on their agendas. Especially at the level of state politics, these respondents considered it to be an important political issue. There were political leaders who mentioned that, in the past, opposition parties had tried to make it an election issue. Yet, it emerged that the ruling party was not pro-active in making it electorally salient. Instead, it preferred to respond to challenger's attacks, rather than highlight its own performance.

The findings did not provide clarity to the theoretical premises. Especially, considering the greater party cohesion that co-varied with better capacities, there were expectations of higher electoral salience too. However, field level findings were equivocal with respect to the expectations of voter salience. The reluctance of the ruling party to reap electoral rewards was difficult to explain, while the factor of party cohesion appeared to be a significant predictor. The tendency of subsuming political differences to tackle disaster policy reform appeared to strengthen the expectation from cohesive party systems even without the expected salience during elections.

Tamil Nadu

The 2006 elections took place in Tamil Nadu, shortly after a major disaster event, as had happened in Orissa and Gujarat. Less than a year and a half after the disastrous South Asian tsunami of December 2004, elections were held. Considering its proximity to general elections in May 2006, disaster management had the potential to become a major election plank. Tamil Nadu's reputation as being closest to a two party system, as well as its lower scores on the Laakso-Taagepera scale, indicated greater party cohesion. A finding of higher voter salience of the disaster domain would have been entirely consistent with the hypothesis.

The results, however, were not according to expectations. Disaster management was not considered a major electoral issue, by a large number of respondents. Considering its higher level of cohesion and its record in policy reform, it was a surprising finding. One respondent rationalized by saying that the affected area and its population was not large, and was limited to the coastal zone abutting the sea. However, it did appear to be an important issue in local body elections, even though it was the state that was responsible for disaster management. There were a few who pointed to its impact on local body elections. One political functionary pointed out that good work in disaster management had brought them electoral rewards, albeit in local elections to the municipal body. Another also said that his good work had helped him win local body elections.

The most important unit of governance for disaster management was the state, and it was reported by some that disaster management never became an important agenda in the state assembly elections. Elections at this level were decided by regional considerations and coalition politics, believed one legislator. It was said that despite the ruling ADMK having done a good job after the tsunami, it could not derive political capital of it since it appeared that people appreciated individual efforts, and not the party plank. As mentioned by one of the respondents, other issues gained predominance during electoral contests, and governance outcomes in disaster management were outside the pale of significance.

The incumbent party in 2004, the ADMK, had taken up policy reform in the post-tsunami period. Yet, only a few respondents believed that provision of public goods provided electoral rewards at the state level. A political functionary said that disaster policy was not used as an election issue. Interestingly, he admitted that the AIADMK had done good work in the post-tsunami phase, as a result of which they did get many votes. But it was not sufficient to win

seats. Its policy achievements did not figure in the election contest and it could not prevent its rival from returning to power. The conclusion that seemed obvious was that elections were decided not on disaster management performance, despite experiencing an once-in-a-lifetime tsunami, and despite the government being seen to have done good work.

The answer seemed to lie in Tamil Nadu's regional politics. Not only were national agendas determined by regional priorities, the contests also exhibited a significant anti-incumbency trend. While, such rationale did not preclude policy domains from dominating electoral contests, in this case the answer seemed to be a regular, overriding, anti-incumbency sentiment that unseated ruling government every five years, irrespective of their policy and performance.[503] As many respondents explained there were other issues that took precedence over disaster management, and the incumbent party paid the price. The effects on local politics were clear cut and revealed the explanatory power of rational choice theorization. It raised important questions that necessitate a study of local body politics and disaster management. Yet, at the state level, where this study was undertaken, the impact was not unequivocal. Nevertheless, even when the disaster domain lacked electoral salience, the state took up and strengthened policy reform, which proved consistent with formulation about the impact of the political party system.

V. Conclusion

This chapter tested the hypothesis which predicted superior outcomes as functions of party cohesion, and mediated by voter salience of the policy issue. It had been argued that fragmented systems were suited to promote private goods, to pay off support groups. Therefore, greater party cohesion created electoral salience for broad-based programmatic policies resulting

[503] Guruswamy, Baitha and Mohanty (2006) noted that there was economic progress in the state in the 1980s, as well as alternation of power between the two regional parties.

in provision of public goods. Voter salience was a function of party cohesion as political actors created interest in services and goods that appealed across all divides. Disaster management was considered as one of the important concerns, although it was never the sole issue on which elections were fought. Conversely, fragmented party systems only needed to cater to limited constituencies and their demands for private goods.

In this chapter, data revealed that party cohesion was the highest in Gujarat, followed by Tamil Nadu, Orissa, and Bihar. The last named was highest in party fragmentation with the highest effective number of parties. Expectations of the hypothesis lay in the direction of policy outcomes being impacted by greater electoral salience of the domain, which in turn was a consequence of greater party cohesion. Empirical data revealed that the issue was most salient in Orissa and to some extent in Gujarat and Tamil Nadu. In Bihar, while its importance was recognized, it never reached the agenda plate of elections. In the first three states, while there were other issues too, disaster management appeared as one of the important issues of electoral contention.[504]

There was evidence of party cohesion and electoral salience in Orissa that lent credence to the hypothesis. Respondents believed that disaster management was an important item on the agenda that played a role in swaying votes in Orissa. The incumbent government lost elections in 2000, and its performance in disaster management appeared to be a major contributory factor. Voter salience indicated that it was a prime motivator of policy reform with parties getting punished for poor disaster administration. Bihar exemplified the hypothesis in which disaster management was not treated as electorally important due to party fragmentation. Despite recognizing its relevance for the state and evidence of poor governance results, no political party paid a penalty for such neglect. The same political party continued to win elections, three times

[504] Morena and Ilcheva (2007)

in a row. In the 15 long years that it was in power, it was not held accountable for its disaster administration. In a pattern that agreed with the hypothesis, absence of electoral salience was indicative of concerns for private goods to specific, constituent groups.

In the case of Tamil Nadu, while the policy domain was recognized as relevant, traditional political trends prevailed. Despite claiming to have responded well, the ruling party did not seek to make it an overriding item on the electoral agenda. And the challenger group seemed to have acquiesced by not criticizing incumbents' performance. The overriding factor appeared to be traditional two party rivalries that crowded out policy concerns. A significant level of party cohesion translated into competitive electoral contests, which resulted in alternation of power due to anti-incumbency sentiments, more than performance in disaster management. The cohesion in the party system appeared to explain policy reform on its own without the intervening variable of electoral salience.

Gujarat was consistent with the expectation about party cohesion and administrative outcomes. However, this cohesion was not translated into electoral salience for disaster management to the expected extent. It was explained that community mobilization and a positive approach to deal with policy issues prevented it from become an electorally contentious issue. However, the minority who did speak about its salience for voters supported the prediction of the hypothesis. On the whole, Gujarat appeared more to bear out the predictions concerning party cohesion and its impact on governance.

On the whole, empirical evidence only lent partial support to a causal relationship with policy outcomes in disaster management. An important feature of the responses was regarding non-partisan sentiments during disasters. It was explicitly stated in Bihar, Gujarat and Orissa, and appeared to provide a justification for lack of electoral salience. The respondents in these

three states, especially at the local level, emphasized that all political differences were forgotten during crises, and that everyone came together in responding to disasters. However, there seemed to be more to it. In Orissa, given the electoral salience of the issue, the lack of political divisiveness during the disaster did not last during state assembly elections. In Gujarat, it seemed to support the argument of those who viewed emergencies as opportunities to come together and take up better policies. To some extent it explained the subdued salience during elections, while party cohesion provided a convincing reason for capacity building reform. In the case of Bihar, which did not take up any reform, the absence of partisan differences appeared to support the contention that public goods had no electoral salience and also amounted to a complacent acceptance of status quo.

The factor of party cohesion and electoral salience proved to be significant predictors in the case of Bihar and Orissa. In their cases, there was a significant and systematic impact on capacity reform. However, issues such as traditional two-party rivalries and even community mobilization in crises prevented an emphatic causal correlation in other states. Party cohesion in itself correlated well with the changes in the dependent variable.

Chapter 6: Double-Loop Learning from Focusing Events

Organizational learning had been considered a major factor in administrative behavior and change.[505] Scholars had recognized its significance for understanding policy reform. Researches about factors that lead to organizational learning went a long way in explaining policy outcomes. Major disasters were focusing events, and were seen to lead to double-loop learning, leading to major policy reform.[506] The underlying assumption regarded policy reform as a positive and desirable change brought about by the process of double-loop learning in organizations.[507] This research identified policy reform outcomes as evidence of organizational learning and examined the compelling role of major disasters as focusing events. The relationship between organizational learning and focusing events provided a stable platform for undertaking a detailed analysis into reasons for policy reform.

This chapter examined the correlation between focusing events, organizational learning and disaster management. The hypothesis was that focusing events lead to policy reform. The experience of severe calamitous events lead to "double-loop learning"[508] in organizations which was seen in policy change as a result of experience of such events. It was found that they had a significant impact with consequences of a paradigm shift in policy. Normal events that were not perceived as focusing events also had the potential to change, although it was likely to be in the form of smaller adjustments to behavior or correction of errors. On the other hand, major disasters were found to have consequences in double-loop learning, in which policy objectives were reframed, as well as the strategy to attain them. Change was not limited to evaluation of

[505] Sabatier (1988); May (1992); Dodgson (1993)
[506] Kingdon (1984)
[507] Cobb, Ross and Ross (1976) mentioned that all policy change was assumed to be important since there were always issues competing for attention, more than available capabilities; Birkland (1997); Carley and Harrald (1997)
[508] Argyris and Schon (1978), p. 22

policy implementation with a view to find errors and make adjustments. Instead, in double-loop learning, it led to questioning the objective and its construction. Importantly, it was consistent with findings in field research that major disasters led to fundamental changes in policy, which amounted to a paradigm shift. In the context of Indian disaster management, it was seen when a traditional relief orientation gave way to comprehensive capacity building, after 'focusing event' disasters. Hence, this research considered organizational learning from focusing events to be a significant predictor of reform and capacity building in the disaster domain.

The causal process of this change involved a different perspective on organizations and their autonomous impact. Traditionally, literature had seen institutions as representing societal cleavages or as an arena for resolving conflicting interests.[509] They did not have an autonomous presence. The New Institutionalism literature created analytical space for an independent and autonomous impact of organizations. They were capable of learning from experiences and having an autonomous effect, independent of the social groups that supported the institutions. In the field of disaster management, the scope for learning arose from largely ineffectual efforts that led to a huge gap between expectation and actual delivery of public goods.[510]

The first section of this chapter elaborates on organizational learning, and related concepts, that figured in administrative organizations.[511] The concept of "Potential Focusing Events"[512] is also explained to understand their relationship with policy outcomes. The relationship between focusing events and disaster management reform is covered in the second section. The next part examines the independent and autonomous impact of the experience of focusing events, as evidence of change. The empirical feedback from the field informs the

[509] March and Olsen (1984), proposed a theory of sociological institutionalism, adding to existing perspectives on institutions; Bennett and Howlatt (1992)
[510] May (1982); Comfort (1988); Rose (1991); Tierney, Lindell and Perry (2001)
[511] Easterby-Smith (1997); Mitchell (1999); Bennett and Howlatt (1992)
[512] Birkland (1997)

research about stakeholder perceptions as well as their explanations of a causal relationship in the fourth part of the chapter. Their opinions on the magnitude of disaster and evidence of learning are important inputs in this analysis. The last and fifth section concludes the discussion by analyzing the findings.

I. Focusing Events and Organizational Learning

This section explained the fundamental assumption that guided this research, in addition to explaining the important concepts that were relevant for understanding the impact of focusing events on disaster administration. It relied on an implicit process of organizational learning. An assumption of autonomy of institutions was vital to understand how and why organizations learnt from experience, events or any other exogenous occurrence. Thereby, the process of organizational learning from experience, and initiating change, would not be mistaken as a mirror image of the views, interests and activities of societal sections. Scholarship, in recent times, treated institutions as analytically autonomous instead of being reflections of societal cleavages and interests.[513] Similarly, policy change was no longer only seen as the consequence of conflict among different groups in society.[514] Institutions were found to be independently capable of responding to developments and making changes, through a process of organizational learning. They were capable of influencing policy change on the basis of their understanding of events and experience. This was the fundamental assumption of this research about institutions, while examining their relationship with learning and disaster management. The process of organizational change appeared to be seamless, if only inputs and output were taken into consideration. Several of its component processes were not identifiable, although they played an

[513] March and Olsen (1984)
[514] Bennett and Howlatt (1992)

important role. The process of organizational learning was implicit in understanding how they undertook change, and its consequences were seen in policy outputs.

A vast body of literature had studied organizational learning from different perspectives.[515] However, its application in empirical studies was found to be much less in comparison, presumably because the concept was not known for precision.[516] There was a broad consensus about its main features, although difficulties had been noted in defining and identifying it, as well as in delineating the process by which it took place.[517] Heclo defined learning to mean "a relatively enduring alteration in behavior that results from experience", conceptualizing it as a "change in response made in reaction to some perceived stimulus."[518] It enabled effective information processing, interpretation and adoption of appropriate responses.[519] Commonly, its results were seen in policy change, although, theoretically, it could be argued that absence of change could also be an outcome of learning.[520]

There were difficulties in identifying who learns, how and what, and many scholars avoided them by focusing on its results. A marked bias towards outcomes was found in the literature on organizational learning. Most scholars considered them as evidence of learning having taken place, instead of attempting to isolate or differentiate the processes involved.[521] The learning experience was seen to comprise of processes that included seeking information, obtaining feedback and adjusting behavior.[522] Literature identified information storing and

[515] Dodgson (1993) reviewed literature on organizational learning
[516] Easterby-Smith (1997); Mitchell (1999); Bennett and Howlatt (1992) said that it had been "over theorized and under applied", p. 288
[517] Birkland (2006); Carley and Harrald (1997)
[518] Heclo (1974), p. 306
[519] Easterby-Smith and Araujo1(999); March and Olsen (1984); Comfort (1985); Comfort (1988); Bennett and Howlatt (1992)
[520] Cohen, March and Olsen (1972) spoke of oversight and flight as examples of decision styles.
[521] Easterby-Smith and others (1999); May (1992); Birkland (2006); March and Olsen (1984) said that political theories had traditionally explained intent of actions through outcomes.
[522] Comfort (1988)

processing as key processes that played an important role in enabling learning and adaptive behavior in organizations.[523] On the other hand, questions had been raised about who learns, despite a bias towards identifying individuals as the objects of learning. [524] However, this research had assumed analytical autonomy of organizations, choosing to view them as active participants in the learning process, and found support from those who did not consider organizational behavior as only an aggregation of individual learning.[525] Organizations, as opposed to individuals were seen to be capable of learning, while treating agencies of government, or the state itself as institutions for the purpose.

The concept of learning provided a perspective to understand policy change, although there was no certainty regarding the types of outcomes or the nature of change.[526] To a great extent, it also depended on the type of learning. Detection of error that lead to corrective, adaptive behavior was seen as single-loop learning in which "members of the organization carry out a collaborative inquiry through which they discover sources of error, invent new strategies designed to correct error, produce those strategies, and evaluate and generalize the results."[527] On the other hand, double-loop learning was a process of fundamental reorganization that consisted of a "double feedback loop which connects the detection of error not only to strategies and assumptions for effective performance but to the very norms which define effective performance."[528] A similar distinction was evident in policy learning literature that talked of

[523] Corbacioglu and Kapucu (2006); Comfort (1999)
[524] Huysman (1999); May (1992); Dodgson (1993); Corbacioglu and Kapucu (2006)
[525] Organizations were primary actors in disaster management, and received ontological primacy. Comfort (1988); Birkland (2006); Prange (1999)
[526] World Bank (2006b) listed the lessons that had not been learnt in World Bank assisted projects, that concerned disaster management; AIDMI (2005a), examined the lessons not learnt in India
[527] Argyris and Schon (1978), p. 22
[528] Ibid, p.22

instrumental policy learning and social policy learning.[529] Importantly, learning consisted of both processes in its relationship with change.

The most common reason that was seen to initiate the learning process was the factor of experience.[530] Experience of policy implementation, was seen as an important part of the process, initiating a process of change through the mechanism of feedback. Importantly, shortcomings in delivery of public goods and negative experiences had been seen to play a greater role in shaping policy outcomes.[531] At the same time it was noted that there was no certainty about lessons being drawn, or the right ones being learnt.[532] Nevertheless, this chapter was concerned with experiences that lead to double-loop learning, signifying a paradigm shift and fundamental changes in adaptive behavior.[533] This research examined the factor of focusing events for providing a credible explanation for double-loop consequences. It used Birkland's concept of "Potential Focusing Events" to explain the causal link between experience of disasters and fundamental policy change. Birkland refined Kingdon's 'focusing events' to imbue them with a potential to become defining moments, as all of them did not invariably reach the agenda plate.[534] Major changes in organizational behavior, in terms of policy reform and capacity building, were caused by events that were distinctly different from minor adjustments. Apart from the impact of the disaster agent, scholars had also stressed the importance of symbolism more than the event itself.[535] Public perceptions of the event were influenced by the symbolic value of the occurrence.

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[529] May (1992)
[530] Senge (1990); March and Olsen (1989); Prange (1999); Finger and Brand (1999); Comfort and Kapucu (2006)
[531] May (1992); Comfort (1988); Tierney, Lindell and Perry (2001); Rose (1991)
[532] March and Olsen (1989)
[533] Argyris and Schon (1978) explained that 'double-loop learning' occurred when the organization's norms, policies and objectives themselves were questioned
[534] Birkland (1997) based his conceptualization of 'Potential Focusing Events' on Kingdon's 'Focusing Events' and Sabatier's 'Advocacy Coalition Framework'
[535] Kingdon (1984); Birkland (1997)

II. Focusing Events and Policy Reform in Disaster Management

Literature had noted that experience of disasters was a significant predictor of policy change.[536] Scholars who studied the phenomenon of prior disaster experience, especially shortcomings in outcomes, agreed that it was a potential source of change and improvement in policy.[537] It also suited practitioners, who found actual experience, and not abstract rational analysis, to be a more reliable basis for planning change.[538] Thereby, experience became instrumental in detection of errors or shortcomings and resulting in changes in policies and their implementation.[539] Each focusing event provided a window of opportunity for policy attention, with the domain becoming salient after each disaster. [540] However, even after they reached the agenda stage, it was recognized that there was overwhelming concern with the last major disaster event and type. On the whole, it was understood that disaster experience provided a short-lived window for policy change, before other issues took priority in policy agenda amid fading memories of past events.[541] Nevertheless, literature did not find an unequivocal positive correlation between prior disaster experience and improved policy outcomes due to a variety of reasons such as complacency, subjectivity of experience, varied lesson-drawing experience and other factors.[542]

Birkland's concept of "Potential Focusing Events" explained the greater likelihood of change after such events. A Potential Focusing Event, as defined by Birkland, "is a rare, harmful, sudden event that becomes known to the mass public and policy elites virtually

[536] Birkland (1997)
[537] Birkland (1997); Rose (1991); Carley and Harrald (1997); Tierney, Lindell and Perry (2001)
[538] Rose (1991)
[539] May (1992); Comfort (1985); Senge (1990); Prange (1999); Comfort (1988)
[540] Carley and Harrald (1997); Mitchell (1999); May (1988); UNDP (2004)
[541] Birkland (1997); Mittler (1988); Carley and Harrald (1997); Mitchell (1999); May (1988);
[542] Tierney, Lindell and Perry (2001)

simultaneously" leading to important policy change.[543] Implicit was a stress on consequences of a more serious nature, indicating a disaster that had greater potential of damage. It provided credible, causal reasoning why issues gained policy attention, unlike the unpredictability of the 'Garbage Can Model' of policy preferences.[544] Birkland based his proposition on two concepts. First, he used Kingdon's concept of "Focusing Events", which was explained as a "coupling" of problems, policies and politics that resulted in agenda-setting with disasters being a good example of such events.[545] Second, he combined it with an Advocacy Coalition Framework in promoting policy change with variation on count of advocacy groups among different types of disaster events. [546] Together, he explained how focusing events, which were major disasters, had the potential to result in policy change, with the involvement of advocacy coalitions which were specific to policy domains.

Focusing events served a major purpose of providing an analytical basis for differentiating policy outcomes, between minor adjustments and major change. Major disasters had 'symmetry-breaking' consequences.[547] It was the hypothesis of this research that potential focusing events lead to major reform and change in disaster management policy. Accordingly, less consequential disasters resulted only in error correction or a behavior pattern that reinforced the prevailing rule-guided behavior, although even that was not entirely inconsequential.[548] Routine or regular occurrence of disaster events, which were not significant enough to fall into the category of focusing events, resulted only in minor adjustments. In such cases, existing

[543] Birkland (1997), pp. 3-4, 22; Birkland (2006)
[544] Cohen, March and Olsen (1972) conceptualized an unpredictable process of organizational decision making as an alternative to the rational policy process. It was dependent on separate streams of problems, solutions, participants and choice opportunities coming together.
[545] Kingdon (1984), p. 93
[546] Sabatier (1988)
[547] Kiel (1994), p. 39; Carley and Harrald (1997) p. 312, termed them as "unfreezing events" leading to organizational change
[548] Senge (1990) termed it as the first level of learning

policy mechanisms were evaluated for undertaking error correction in achieving the same objectives.[549] In contrast, major calamitous incidents became focusing events due to greater impact. They served as examples of policy failure, and an opportunity to undertake thorough going reform.[550] Major catastrophic events were different and their experience had consequences for double-loop learning.[551] It was hypothesized that mega disasters created conditions in which fundamental questions were raised about the strategies to deal with disasters as well as the understanding of the objective itself. Consequently, they lead to questions about the very construction of the problem, the objectives of policy, as well as the strategies that needed to be adopted. In the process, there was greater likelihood of large-scale reform in the form of new policies and development of greater capacities.

In the experience of Indian states, focusing events proved to be highly significant predictors of a paradigm shift from a relief orientation to a risk reduction approach. States were more likely to adopt a comprehensive outlook towards disaster management, drawing from the comprehensive reform of the federal policy. Since the IDNDR in 1990s, there had been a paradigm shift and Indian disaster policy at the federal level had radically changed from its relief orientation. Not only was a new policy promulgated, a new statutory framework was brought into the picture, funding was increased, and greater scientific resources were deployed in support. Disaster risk reduction became the objective and the strategy included capacity building in an all-hazards model. Notwithstanding changes in the federal policy, many state governments continued without notable change.

[549] Corbacioglu and Kapucu (2006) noted that single-loop learning was not able to bring about effective change and create a robust management system for complex disaster environments in Turkey
[550] Birkland (1997)
[551] Corbacioglu and Kapucu (2006) identified the 1999 Marmara earthquake in Turkey as a major disaster that facilitated double-loop learning

It is thus significant that despite a common federal resource, state institutions differed in their ability and timing to undertake double-loop learning and build their capacities for disaster risk reduction. The few that had done it before, as Andhra Pradesh after 1977, or Maharashtra after 1993, had undergone calamitous tragedies. Evidence of double-loop learning in administrative organizations was found in the reform undertaken in these states and their massive capacity building reform. Consequently, it was hypothesized, that states undertook a paradigm shift only after they suffered the traumatic experience of a major disaster. Those states that underwent such disasters drastically reformed their policies and enhanced capabilities.

Empirical research was expected to find credible evidence of change after major disasters for confirming the hypothesis. In contrast, states that did not undertake a paradigm shift were likely to be ones where major disaster events had not occurred. Gaps in the causal linkages were likely to be filled from responses of stakeholders, who were expected to explain the when and why of double-loop learning. They were likely to identify major disaster events as turning points that became the most compelling factors for reform. In the event, empirical research provided conclusive evidence of a significant and systematic causal link between the experiences of mega disasters and an imperative for drastic reform.

III. Experiences of Focusing Events

Experience, in general, was found to be a very significant factor in explaining policy reform. To begin with, the role of historical experience was noted to explain the manner in which states adopted and implemented disaster management policies. They developed expertise in dealing with disasters with which they had experience. Practitioners, especially, were emphatic about its utility, and identified it as a significant driver for reform. A senior bureaucrat mentioned that the erstwhile Bombay presidency, that included the present states of Maharashtra

and Gujarat, was good at drought management, whereas the erstwhile Madras presidency, that included the present states of Tamil Nadu, Andhra Pradesh, was better at cyclone management. And the reason was greater vulnerability to and experience of those disaster types. Another policy maker explained how prior disaster experience had built into reform by leading to better policy and improved implementation. Their responses exemplified the operationalization of single-loop learning, in which experience accumulated over a long period of time, resulted in incremental improvements to policy and its implementation.

On the other hand, there were others who spoke about mega disasters and double-loop learning. A federal official, who was closely associated with capacity building, was of the firm belief that occurrence of mega disasters played a very significant role in redrawing the contours of policy. Interestingly, drought did not seem to figure as a major game changer. This may have been due to a couple of reasons. First, after 1960s there had been no major drought. Second, it was a slow onset disaster which was now addressed by governments through superior technology and scientific resources. Third, great strides in agriculture led to a safety net in food grain availability. Therefore, it was not difficult for government to prevent starvation and ensure minimum employment opportunities in the countryside through employment schemes and provision of food grains.[552]

Mega disasters achieved a focusing event status after being recognized as a major cause for change. Official documents duly noted them as the motivation for policy reform. Public perceptions also viewed particular disasters as focusing events that were sudden and harmful, and confirmed their significance. On the other hand, when interview responses did not mention particular events that were specific in time and space, it was reasonably accurate to infer that there had been no major disasters that served as defining moments. For example, respondents in

[552] Government of India (2008)

one state spoke about general vulnerability to floods without the experience of any particular focusing event. Lack of a defining catastrophic disaster was construed from such responses.

Therefore, on the basis of government publications as well as responses of relevant stakeholders, it was found that focusing events occurred in Orissa, Gujarat and Tamil Nadu. Literature of federal and state governments recognized the severity of the 1999 super cyclone in Orissa.[553] It was a turning point for the state's disaster management.[554] Although it affected the coastal districts only, the event acquired the status of a calamity for the entire state since they controlled the politics, and the voice of Orissa. All the respondents in this research accepted the centrality of the event with civil servants and elected leaders correlating it with changes in policy, notwithstanding Orissa's traditional susceptibility to cyclones.

Similarly, the 2001 earthquake,[555] preceded by a major cyclone that devastated Kandla in 1998, was viewed as a turning point in the state of Gujarat. The earthquake in 2001 was a colossal tragedy for Gujarat.[556] Occurring on the anniversary of India's Republic Day,[557] it devastated several districts. Coming as it did after a severe cyclone had devastated Kandla in 1998, Gujarat embarked on a massive revamp of its disaster management policy and machinery. Government documents as well as people's perceptions confirmed its role as a focusing event.

On Boxing Day in 2004, the South Asian tsunami, a hitherto unknown disaster type, devastated coastal Tamil Nadu. Tsunamis had been unknown in India, at least in recent times. The last recorded one was in 1945, even before the eradication of small pox. Consequently, when the Great Indian Ocean tsunami struck in 2004, entire villages on the sea coast were washed away. While other states were also affected, Tamil Nadu bore the brunt in mainland India.

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[553] Sinha, Anil K. (2001)
[554] Ibid
[555] Ibid
[556] Ibid; Haddow and Bullock (2006)
[557] 26th January is celebrated as the date on which India adopted a republican form of government in 1952

Thousands lost their lives. For government and the public, it proved to be a focusing event that attracted policy makers' attention.

On the other hand, Bihar had always been considered vulnerable to floods without reference to any specific event. Respondents in Bihar uniformly bemoaned their problems of floods. Notwithstanding the benefits to the top soil, annual floods caused severe hardship due to large-scale evacuation of people from flood hit areas. Arrangements for their shelter and food being unsatisfactory, their living conditions were often criticized as being sub minimal.[558] From state level politicians to local body leaders, and from policy making bureaucrats to field-level implementing personnel, everybody recognized a vulnerability to floods. There were mentions of severe floods in 1987, 2003, 2004 and 2007 and so on. Interestingly, no single event stood out as having been a game changer. In the year 1988, northern districts of Bihar were jolted by a major earthquake. However, it happened long before the paradigm shift at the center, and there was no fundamental change in the state's disaster management.

IV. Adaptive Behavior from Focusing Events

In the theoretical section it was noted that there were enormous difficulties in isolating the various processes in the relationship between focusing events, organizational learning and policy outcomes. However, responses of relevant stakeholders provided significant information about their causal linkages. Information obtained in the field proved conclusively that without major disasters, there was little likelihood of thoroughgoing, policy reform. There was evident correlation of policy change in states which had suffered such disasters. An overwhelming majority of the one hundred and seventy nine respondents provided the rationale for such changes and identified focusing events as the critical variable that led to change. Its converse was

[558] Those who defended the state's record said that fewer human casualties in floods were indicative of better coping mechanisms. However, a senior bureaucrat in the center dismissed such claims by pointing to the subhuman living conditions of the displaced masses.

also found to be true with no double-loop learning in Bihar where there was no defining disaster. As expected, respondents in Bihar were not able to pinpoint any particular major disaster, despite a seeming awareness of vulnerabilities. In other states, participants pointed to the turning points in their state's disaster management, and related it to important changes in the domain.

Bihar

The most striking thing about responses in Bihar was a preoccupation with floods.[559] While respondents did acknowledge vulnerability to earthquakes and fire accidents, in addition to drought-like conditions, their main concern was flooding by the tempestuous rivers rising in the mountains of Nepal. Floods were a regular occurrence in the northern part of Bihar that bordered Nepal. There was unanimity, among all respondents, that floods were the most important source of devastation in north Bihar.[560]

However, no singular disaster event had been recognized as a major or mega disaster in Bihar.[561] A high ranking public servant was specific that Bihar had escaped the experience of mega disasters. Unlike other states like Orissa, Gujarat and TN, he thought that Bihar did not suffer any calamitous disaster, and consequently there was no focusing event. People in the state also had no consensus about any focusing event, which only indicated that there was no single disaster event that remained etched in collective memory. A senior political functionary described their exposure to floods as, using the expression, "*niyyati*" which indicated that people had become habituated to the disaster agent. Consequently, he said that no extraordinary measures were undertaken by administrative machinery nor were any demanded by people. Most

[559] Government of Bihar (2007a). It spoke about a "historic" response in the 2007 floods, but did not identify any particular disaster event

[560] Field research in February 2008 covered this area

[561] The 2008 Kosi Floods that occurred in August-September 2008 were a focusing event. However, they were not covered in this study as field research was completed in February 2008. For more information about the Kosi floods, see Government of Bihar http;//disastermgmt.bih.nic.in/Downloads/Koshi-Floods-2008.pdf

local functionaries and public officials recounted that due to the routine nature of the occurrence, advance preparations were made every year and most people stored foodgrains, fire wood, fodder and boats. There was another aspect to it. Floods, in themselves, did not constitute a disaster for many. A local leader explained that it was considered a disaster only when standing crops were lost. If they weren't, annual flooding replenished the nutritive value of their soil by bringing mineral-rich, loamy silt. On the whole, it was evident that no particular disaster event stood out, and in its absence there was no urgency or imperative for massive policy change.

Past experience with floods was the guiding factor in disaster management among official and non-official respondents. None of the respondents felt that there was any paradigm shift in Bihar's disaster management and, at best, spoke of marginal improvements. Notwithstanding the federal government stress on a paradigm shift, none was evidenced in Bihar.[562] Relief considerations continued to be paramount, although there was occasional talk of undertaking mitigation and recovery efforts. Improvement in preparedness was not evident at all. Organizational learning was, in the absence of focusing events, incremental and adaptive behavior was marginal. The impact of this factor was also seen in outcomes, or the absence of fundamental change. It was seen in the issue of local demands for addressing disasters. Importantly, the people were concerned about long-term measures to address floods. Many respondents highlighted a demand for construction of dams and multipurpose flood control-irrigation projects-cum-hydroelectric power stations. Maintenance of river embankments was seen as a priority. However, as it was found during research, they remained unfulfilled. The projects remained on the wish list only due to a multiplicity of reasons. Lack of resources was an oft-quoted excuse, along with the priority of other projects. However, it seemed that there was no urgency in their demands as the respondents appeared to have adjusted to the status quo. The

[562] Government of Bihar (2007b). It identified that the entire program needed to be thoroughly revamped

only significant change that was evidenced was an increase in amount of food grains, and a greater sensitivity towards requirements of the flood victims.[563] The outlook remained oriented towards providing adequate relief in an efficient manner. There was no paradigm shift.

It was also seen in respondents' reactions towards the risks posed by other hazards like fire accidents. Despite being a regular occurrence in most districts of Bihar, there was no policy attention towards the risks of fire accidents that burnt down thousands of huts every year in Bihar. There was no single, momentous event that captured the attention of policy makers and public simultaneously. The situation was worse than in floods, with hardly any fire fighting equipment, beyond the few fire tenders. Similarly, there was no capacity building to address the hazard of earthquakes, despite parts of North Bihar being in a highly, vulnerable seismic zone. The last major earthquake having been in 1988, most people had fading memories of its damage and devastation.[564] Earthquakes, as one respondent thought, were not important because they had occurred long back and the long gap in time had dimmed memories. With respect to manmade hazards, respondents admitted to lack of preparation for industrial and transportation accidents, with scant development of capacities even in major industrial hubs and major rail transportation centers. They were not equipped with heavy machinery, cranes, lifts, dumpers, gas cutters or other essential equipment. The few capacities that were available to deal with industrial hazards were in place because of statutory industrial safety plans.[565]

It became evident that despite Bihar's vulnerabilities to floods and earthquakes, there was no capacity building. It was because there was no single and specific incident that provided a compelling context to undertake capacity building. Hence despite awareness of vulnerabilities,

[563] Government of Bihar (2007b). In 2007, the amount of food grains was increased to one quintal (=100 kilo grams) per family in addition to compensation for loss of life and property
[564] District Muzaffarpur http;//Muzaffarpur,nic.in/muz_drmp.htm retrieved 4 November 2008, noted an earthquake in the district in 1998
[565] Jasanoff (1994). The 1984 Bhopal Gas Tragedy was responsible for sweeping reform in industrial safety

and the federal encouragement there was no major policy reform in Bihar, proving the hypothetical importance of focusing events.

Orissa

As one of the states on India's eastern coast, Orissa had always been vulnerable to cyclonic storms that formed in the Bay of Bengal. Together with floods, cyclones formed the most common natural hazard that imperiled Orissa. There was consensus about the threats posed by cyclones and floods. As far as other hazards were concerned, there was a varied response with some respondents highlighting dangers posed by tsunamis, or drought. Despite some parts of the state being in a seismic vulnerable zone, there was a significant absence of sensitivity in that respect.

Notwithstanding a stress on floods, there was an overriding concern about cyclones. In particular, the super cyclone of 1999 was unanimously perceived as a focusing event, whose scale of devastation exposed the feeble capacities of the state. [566] It was a turning point in Orissa's history. The cyclone struck the entire Orissa coast, impacting 12 districts along with parts of neighboring West Bengal.[567] The 223 mph winds left a trail of devastation in a 250 km stretch of the coast. Thousands of people died and many more left in distress. More than two and a half lakh houses were damaged.[568] Everybody, politician, bureaucrat, non-profit member and volunteer activist, were emphatic about its importance in Orissa's massive reform in disaster management. Its policy towards handling disasters underwent a massive change, and evidence of organizational learning was clear in the tectonic shifts in adaptive behavior.

[566] Gandhigram Rural University (2008). Researchers found that Orissa's disaster management machinery before 1999 lacked contingency plans, operating guidelines for non-state participants, and reliable communications facilities
[567] Sinha, Anil K. (2002)
[568] Gandhigram Rural University (2008)

The foreword to the state's disaster management policy recognized that "the traumatic experience of the Super Cyclone 1999 has brought in a sea change in approach and strategy to deal with disasters."[569] A senior official spoke about Orissa's path-breaking initiative in institutionalization of disaster management. Significantly, for the first time in India, an exclusive agency was formed for improving capacities. The Orissa State Disaster Mitigation Authority (OSDMA) was set up in 1999, long before any such body was conceived at any level in India.[570] Even the federal government set up a National Disaster Management Authority only after federal legislation was enacted in December 2005.[571] Orissa was the first state, therefore, that gave an institutional form to disaster management.[572] Importantly, the official website of OSDMA makes a specific mention of the focusing event, declaring that "Orissa State Disaster Mitigation Authority (OSDMA) was set up by the Government of Orissa as an autonomous organization vide Finance Department Resolution No. IFC- 74/99-51779/F dated the 28th December 1999 *(in the immediate aftermath of the Super-cyclone in 1999).*"[573] Importantly, it also served as a model for others states like Gujarat,[574] in a clearly evident case of "lesson-learning".[575]

The double-loop learning was also admitted in official documentation. While speaking about the other major institutional reform that was undertaken in setting up an Orissa Disaster Rapid Action Force (ODRAF), the official website admitted that the 1999 super cyclone experience was responsible for its formation. It said that "the Super Cyclone of 1999 had left the

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[569] OSDMA. 2005. State Disaster Management Policy. Bhubaneswar: Orissa State Disaster Mitigation Authority
[570] OSDMA http://v3.osdma.org/ViewDetails.aspx?vchglinkid=GL000&vchplinkid=PL000&vchslinkid=SL000 retrieved 28 November 2008
[571] NDMA http://ndma.gov.in retrieved 28 November 2008
[572] Comfort (1988) noted the importance of having exclusive institutions for emergency management because they reduced complexity, increased consistency and interpreted the environment continuously
[573] OSDMA http://v3.osdma.org/ViewDetails.aspx?vchglinkid=GL000&vchplinkid=PL000vchslinkid=SL000 retrieved 28 November 2008. Italics added
[574] Gujarat had sent a team after the earthquake in 2001, to study Orissa's Disaster Management reform and institutional arrangements
[575] Rose (1991) termed 'lesson-drawing', in the form of borrowing ideas from successful examples, as an example of learning

roads and transportation networks of the coastal Orissa in shambles. A responsible and responsive system could not deliver the goods in time due to lack of necessary equipment and trained manpower despite strong empathy for the fellow brethren. It was a very harsh lesson that the state learnt from the apocalypse. The Govt. thus created Orissa Disaster Rapid Action Force (ODRAF) to assist the civil administration in search and rescue operations, relief line clearance and overall disaster management."[576] Five battalions of the ODRAF were raised and located in different parts of the state. An elaborate and dedicated VHF communication network was established only for this purpose, emergency operations centers were set up and massive awareness campaigns taken up.[577]

There was also a marked difference in their attitude towards construction of cyclone shelters. Before 1999, as one representative of an international agency mentioned, there was little demand for cyclone shelters. They were being constructed under the Orissa Disaster Mitigation Program that began in 1995 as a joint program of Government of India, Federal Republic of Germany and International Committee of Red Cross.[578] Under that program, 23 cyclone shelters were built in 6 districts in the first phase. They proved to be very useful when the super cyclone struck in 1999.[579] The important point that emerged was that prior to 1999, it was found to be difficult to establish a need for cyclone shelters.[580]

[576] OSDMA http://v3.osdma.org/ViewDetails.aspx?vchglinkid=GL011&vchplinkid=PL034 retrieved 28 November 2008.
[577] OSDMA http://v3.osdma.org/ViewDetails.aspx?vchglinkid=GL000&vchplinkid=PL042 retrieved 28 November 2008; Comfort and Kapucu (2006) underscored the importance of information infrastructure for improved inter-governmental coordination after disasters, as it increased the capacity to anticipate and respond
[578] IRCS http://www.indianredcross.org/newsstories1.html retrieved 28 November 2008
[579] Interview with a senior representative of German Red Cross. He spoke about 40,000 people finding safety during the 1999 super cyclone in cyclone shelters.
[580] Gandhigram Rural University (2008)

A systematic vulnerability assessment was undertaken to cover all hazards, and detailed plans were prepared for each district.[581] Further, satellite imaging technology was used to create a GIS database for the entire state.[582] Evidence of a new strategy was also found in the state's policy towards NGOs. The latter became an important part of disaster management, as all the respondents admitted, and the government identified the need to coordinate with them, only after 1999.[583] While the focus of this research was institutional learning, there were significant changes at individuals' levels too.[584]

As evidence of the paradigm shift, it also became evident from most respondents that policy reform was aimed at generic disaster management rather than a focus on addressing cyclones or floods only. As an example, they pointed to policy reform that addressed the hazards of heat waves. Generic disaster management capabilities were created to handle all sorts of disasters and hazards. An official respondent said that they had also factored manmade hazards such as industrial accidents, communal riots, transportation accidents and others. He spoke about annually scheduled mock drills in the state's industrial belt in Jharsuguda.

While the changes did reflect their intentions, it was nevertheless found that there was a glaring lack of sensitivity towards the risks posed by earthquakes, as one bureaucrat admitted. Placing the issue in perspective, he pointed out that the 1993 Latur earthquake, which killed over 9000 people, was also in a similar vulnerable seismic zone.[585] In developments that were consistent with literature there was an evident lack of threat perception about earthquakes. It served to support the contention that policy making was still overwhelmingly concerned with the

[581] OSDMA http://v3.osdma.org/ViewDetails.aspx?vchglinkid=GL000&vchplinkid=PL042 retrieved 28 November 2008
[582] Ibid
[583] OSDMA http://v3.osdma.org/ViewDetails.aspx?vchglinkid=GL000&vchplinkid=PL000vchslinkid=SL000 retrieved 28 November 2008; Mitchell (1999) saw involvement of NGOs as recognition of governments' limitations
[584] A government engineer, who had entered service 17 years ago, gave his own example of individual learning. He admitted that his perception of disaster management changed after 1999
[585] NIDM http://www.nidm.gov.in/Earthquakes3_ii.asp retrieved 6 May 2008

last disaster. Moreover, in direct reference to the window of opportunity, several respondents sounded apprehensive about the lessons of disaster management being transmitted to the next generation. One field level official was skeptical about the next generation being similarly sensitized towards disaster management, as they would have long forgotten the super cyclone of 1999. A volunteer activist noted a growing apathy towards disaster management, in the absence of a major calamity in recent times.

Discussion on double-loop learning, however, should not deter students from ignoring the role of incremental, single-loop learning. It continued to play an important part. One sarpanch spoke about the changes their panchayat had made in CBDMPs, on the basis of their experience. An official of the Red Cross informed that they changed the design of their cyclone shelter after 1999, having learnt about its drawbacks. While the paradigm shift was apparent, incremental changes to behavior continued due to normal, feedback processes.

Gujarat

There was unanimity among the respondents, regarding the focusing event in 2001. Without doubt, every one of the respondents agreed that the massive earthquake on 26 January 2001 was a turning point in their disaster management. A total of 13,805 lives were lost. While 21 of the state's 25 districts were affected, six of them suffered extensive damages, 15 million people in 7633 villages were affected, 222,035 houses destroyed and more than a million damaged.[586] Kutch district was the worst affected with about 70%-90% of all housing and service infrastructure destroyed and in one of its towns, Bhachau, more than 80% of all buildings warranted demolition.[587]

[586] Gujarat State Disaster Management Authority (2001); Gujarat State Disaster Management Authority (2005)
[587] Wahlstrom and Harland (2001)

Adaptive behavior included a massive capacity building program and greater sensitization towards generic disaster management, in all phases and for addressing different hazards. Second, to some extent there was limited awareness about the criticality of the cyclone that hit Kandla port area in 1998. As a senior official stated, the Kandla cyclone in 1998 was considered a major disaster, which started a process of policy reform. However, it did not fructify and had to be revived after the 2001 earthquake. A third important trend that became evident was that Gujarat's disaster management developed all-hazards capabilities after the second event. Finally, it was also seen that despite a generic, disaster policy reform, respondents in the field, especially at the panchayat, block and district levels, displayed a distinct concern for floods as their primary threat, which served to reinforce literature's focus on experience being a very significant influence.

All the respondents recognized 2001 Republic Day earthquake as the turning point in Gujarat's policy towards disaster management.[588] It led to a paradigm shift from a relief-oriented perspective to an emphasis on all-hazards approach. The focus shifted firmly towards Disaster Risk Reduction, from the earlier attention to relief and rehabilitation. A senior official pointed out that earlier policy was limited to pre-monsoon preparedness meetings, contingency plans for cyclones and monsoons, with no attempt at undertaking a systematic vulnerability and risk assessment. Before 2001, there were no city level plans, block plans were extremely rudimentary, and communication facilities were grossly inadequate. Even the state level control room, for monitoring disasters, functioned only between June and October, reflecting the lack of a comprehensive approach.

[588] Gandhigram Rural University (2008). It was found that Gujarat before 2001 had not accorded significance for improving disaster management systems

The Republic Day earthquake became an opportunity for development and reconstruction in a "Build Back Better" approach, using it as a window of opportunity.[589] This was confirmed by official documentation and field responses about the capacity building that ensued. It included both structural and non-structural measures. A total of 197091 houses were reconstructed and 908710 dwelling units repaired, by August 2005.[590] The structural measures also included formation of Emergency Operation Centers at state headquarters and districts, strengthening irrigation projects, bridges, roads, electricity lines, power sub stations, water supply lines with seismic resistant features.[591] By August 2005, 245 dams were strengthened and 222 were undergoing repairs in the second phase, 2456 public building were reconstructed and 8890 of them repaired, 178 bridges and communications infrastructure were repaired, 3600kms out of 4970 km of highways and roads were strengthened, and about 50,000 classrooms reconstructed or repaired.[592] Urban infrastructure such as sewer lines was strengthened, especially in Kutch. By the end of 2006, 200,218 houses were reconstructed and 908751 repaired, 8903 km of power lines strengthened, 4134 kms of highways repaired, 181 dams strengthened in the second phase, retrofitting of 3534 public buildings taken up, apart from creating new urban infrastructure by laying 333kms of sewerage lines, 700kms of water supply pipelines and constructing 171 municipal buildings.[593] And, equally important, as one official said, they placed seismic monitors in 22 locations in the state. Capacities in telecommunication infrastructure were upgraded in a big way and the state's own wide area network was extended up to intermediate levels of local bodies.[594] Satellite phones were provided to districts in addition to existing channels like VHF

[589] Kishore (2006)
[590] Gujarat State Disaster Management Authority (2005)
[591] Ibid
[592] Ibid
[593] Kishore (2006). The author was the CEO of GSDMA.
[594] Comfort and Kapucu (2006) underscored the importance of information infrastructure for improved inter-governmental coordination after disasters, as it increased the capacity to anticipate and respond

network, and hotlines on the telephone network. Even with regard to the response phase, a couple of elected representatives mentioned that Gujarat procured a lot of equipment after seeing their deployment in 2001 by international agencies. Fire services were strengthened all over the state.[595]

Non-structural measures comprised of institutional reform and town planning. Less than a fortnight after the earthquake, the Gujarat State Disaster Management Authority was set up in February 2001.[596] Thereafter a new Disaster Management Policy was framed in 2002 and Gujarat enacted its Disaster Management Act in 2003. It was the first legislation of its kind in India.[597] The Gujarat Development and Control Rules in Town Planning were reinforced to incorporate multi-hazard resistance features, including structural strengthening. Building codes were upgraded, although their implementation was lax, as in rest of the country. Human resource development was a major component of capacity building with an institutionalized role for NGOs. Awareness creation received emphasis, and civil engineers, teachers and students were trained, among others. Mock drills became a regular fixture in the disaster management calendar, and were held twice a year.

The second important finding concerned another major disaster and its significance. A couple of high ranking political functionaries and civil servant respondents at the state level mentioned that the Kandla cyclone in1998 was a major milestone in the state's disaster management. They spoke about the reform exercise that was begun, although serious gaps had remained. One official said that the 2001 earthquake led to revival of interest in the exercise that

[595] Official respondents informed that each of the 160 municipalities was provided a fire tender, water bowser and water tanker as a measure of strengthening fire services. Staff in these bodies was also given training
[596] GSDMA http;//www.gsdma.org/profile.htm; Waugh (1996); Comfort (1988) explained that institutions for emergency management reduced complexity, increased consistency and interpreted the environment continuously. Thus, setting up GSDMA represented a move towards greater professionalization
[597] Government of Gujarat (2003). The federal DM act was passed by the Indian Parliament only in December 2005

had begun three years back. Another said that it had prompted a reconsideration of its policy, which had not worked out earlier. In terms of public perception, there appeared to be insufficient recognition and acceptance of its significance as a focusing event outside the area of impact. It was possible to surmise, as one high ranking respondent did about the 1979 Morvi dam burst that killed 15,000 people, that it served as a wake up call only for the district in which it occurred.

In a generic way, capacities were developed to address hazards and their risks after 2001. A high ranking state level respondent explained the significance of the change, saying that public policy and machinery were geared to tackling cyclones in coastal areas, earthquakes and drought all over Gujarat, and chemical disasters in industrial belts like Vadodara. The last important conclusion was about people's perceptions about common hazards. While state disaster management policy displayed sensitivity towards generic all-hazards reform, field level respondents were preoccupied by hazards with which they had regular experience. In zones of high seismic vulnerability, as in the districts of Kutch, earthquakes were the biggest concern. Similarly, most respondents located near industrial centers, displayed sensitivity towards the risks posed by factories. However, floods were the most common risk perceived by local officials.

Thus the experience of Gujarat proved consistent with predictions that major disasters influenced policy reform in a fundamental way. As seen in this section, the 2001 earthquake proved to be a defining moment and the state reformulated its policy and re-strategized about the concept and objectives of disaster management. It moved from relief management to disaster risk reduction and undertook pioneering reform. The consequences of double-loop learning were evident in its comprehensive capacities to deal with disasters.

Tamil Nadu

The southern most state of India, Tamil Nadu was a major transportation hub with access to one of India's busiest seaports. It was also a relatively industrialized state, with all the accompanying hazards. Traditionally, it had been seen as a well governed state, with greater vulnerability to cyclones and floods.[598] Respondents in Tamil Nadu were united in their perception of the South Asian tsunami of 26 December 2004 as a major disaster that led to drastic changes in their disaster management capacities. The total loss of life was 7995, and more than a million people were impacted in 230 villages.[599] The total dwelling units that were affected were about 118,000. The fishing community was the worst hit. Interestingly, the 2004 tsunami had affected only areas abutting the sea coast in thirteen districts.[600] Yet, it was seen as a focusing event for two main reasons. While the devastation of property and loss of lives was one major cause, a total unfamiliarity with tsunamis seemed an equally valid reason for its impact on the public mind.

All elected and civil servant respondents regarded it as a turning point. One field official highlighted their utter lack of knowledge of the disaster agent, while refuting charges of complacency and neglect. However, even he accepted that awareness had increased in the post-2004 era. Notwithstanding implementation of the GOI-UNDP program from 2002, it was accepted by all that they were unprepared for the Indian Ocean tsunami, and that the state's Community Based Disaster Management Plan started in real earnest only after its occurrence. [601]

They agreed that until 2004, their disaster management was focused on relief and rehabilitation. A cataclysmic change took place thereafter, according to an activist belonging to

[598] UNDP (2005) recorded that Disaster Reduction Plans for Tamil Nadu included contingency plans for floods and cyclones
[599] Ibid
[600] Government of Tamil Nadu (2005)
[601] Gandhigram Rural University (2008). Researchers agreed that there was no permanent institutional structure before the 2004 tsunami

an international NGO. Thereafter, as officials in the state headquarters, districts as well as panchayats, and locally elected functionaries stated, there was overriding emphasis on recovery as well as long-term mitigation. Importantly, the federal government undertook preparedness steps in setting up an advanced tsunami warning system in the Bay of Bengal, apart from improving cyclone forecasting facilities. For its part, the state government undertook massive investments for recovery, by obtaining finances from the Government of India, World Bank, Asian Development Bank and other agencies.

The respondents pointed to a massive housing program as evidence of the state's changed policy to reduce risk and vulnerability on the coast. The government, instead of rebuilding on the coast, also encouraged vulnerable sections of people living on the coast to move inland. Safer housing with better sanitation amenities was provided, said one official. It was stated by respondents that the focus on recovery and restoration was also evident from the development works such as sand dunes and shelter belt Palmyra plantations that were taken up to mitigate future risks. Some others mentioned that CBDMPs were accorded importance as a measure of long-term mitigation. Further, after the 2004 tsunami, it was stated that preparedness activities got a boost in the form of regular mock drills. It was another area that underwent change, with the state providing radio communication facilities to vulnerable panchayats. A couple of field level respondents also spoke about increased training opportunities in disaster management to different stakeholders. It was also reported that there was large-scale involvement of NGOs in various disaster management activities, such as construction of houses, providing psycho-social help, and empowering the community to play a role in post-disaster and livelihood support activities.

The second important pattern that emerged was that the policy reform was still over-concentrated on measures that dealt with tsunamis, in particular. It was not generic capacity building for disaster management. A high ranking respondent supported this statement by pointing to the different units set up in different departments to deal with post-tsunami reconstruction. The projects were exclusively concerned with post-tsunami reconstruction, though they were being carried out by different departments. The main coordinating office of the recovery effort was tellingly called the office of the Officer on Special Duty (OSD), Relief and Rehabilitation and Project Director, Emergency Tsunami Reconstruction Program/Tsunami Emergency Assistance Project (ETRP/TEAP), both tsunami related projects.[602]

The third important trend was that respondents in the field, especially those who were outside the narrow tsunami vulnerable zones, expressed their concern for traditional hazards such as floods and cyclones. It provided an indication that people and lower level functionaries were influenced by regularly occurring hazards, whereas tsunamis were the prime objective of policy attention at the state headquarters. A number of such respondents identified the threats of floods and cyclones. Respondents in an inland district displayed none of the sensitivity towards disaster management, not having experienced any major event.

It was admitted by several important respondents that while the policy underwent radical change, it did not represent a complete paradigm shift. As one respondent said, the shift was incomplete. While it could be inferred as the subjective opinion of one person only, it could also be explained in terms of the impact of the disaster. The area affected was a sliver of coastal land, albeit in a number of districts. There was no damage in areas which were even a couple of miles away from the coast. Moreover, the social composition of the victims also revealed that the

[602] Government of Tamil Nadu (2008)

fishermen community was the worst affected.[603] So while unfamiliarity with a new devastating disaster type made it a focusing event, its limited spatial effect may have been reason for the incomplete change in orientation. Importantly, no new organization was set up in the state nor a new disaster policy formulated, although it did change from its relief orientation and undertook massive investments in capacity building. Overall, while the range of disaster management-related reforms and activities increased tremendously, it did not compare with Gujarat and Orissa as far as a coherent institutional design was concerned.

V. Conclusion

Empirical data had provided conclusive and unmistakable evidence of the impact of focusing events on capacity building. Not only was fundamental policy reform correlated to occurrence of major disasters in most states, but there was absence of change and double-loop learning, when none happened. While the extent of reform may have varied, it was seen that there was massive reform to enhance capabilities in all the three states that experienced focusing events.

Respondents clearly identified the 1999 super cyclone in Orissa, the January 2001 Republic Day earthquake in Gujarat and the South Asian tsunami of December 2004 in Tamil Nadu as turning points. These events drastically changed government perceptions about the policy domain. They proved to be examples of double-loop learning, as a result of which states moved away from a relief and rehabilitation orientation that had guided their orientation for a long time. Instead, they undertook capacity building, in varying proportions, to address disaster risk reduction.

[603] Members of an international NGO opined that the administration had neglected other communities, by focusing exclusively on recovery and restoration needs of the fishermen

The case of Bihar lent further support to the hypothesis. Without any particular sudden, harmful event that became simultaneously known to the policy makers and public, there was only incremental reform. Error correction was undertaken to rectify perceived shortcomings and the most visible result was increased distribution of food grains as emergency rations for the affected. Respondents referred to floods of many years, but there was no agreement about identifying any particular event among them as a calamity. Further the perception of floods being beneficial may have also worked against any of them being seen as a focusing event. However, this logic did not preclude an occurrence in future.

An important aspect of the impact was the indeterminacy about the impact and extent of reform. As seen in the cases of Tamil Nadu's tsunami experience as well as the 1998 Kandla cyclone of Gujarat, there was no certainty about the extent of paradigm shift. A couple of issues deserved mention. First, despite admissions of insufficient reform, it was seen that there had been enormous policy change in all these cases. The states took up capacity building massively in a way that clearly improved their abilities to deal with disasters. Thus compared to their capacities before the focusing events, the change was remarkable and clearly exemplified double-loop learning. Second, it was possible to derive inferences on the extent of change from the extent of devastation as well as perceptions about the disaster. Therefore, it was possible that the 1998 Kandla cyclone and the 2004 tsunami, which affected limited areas and populations, did not have the same impact as the 1999 super cyclone or the 2001 earthquake. However, at this point, this research did not venture to pass judgment on those issues. It restricted itself to recognizing the double-loop learning impact of focusing events and how they resulted in massive capacity building programs in selected states.

In the field, the role of experience was underscored when many non-official respondents expressed concerns for the most common type of hazards, despite multiple vulnerabilities. It continued to influence perceptions. At another level, single-loop learning and incremental reform continued to be adopted.[604] Feedback from normal experience led to minor changes in organizational behavior in an incremental manner, and continued to be relevant from a learning perspective.

[604] It resonated with similar experiences elsewhere. Rosenthal (1988) in his description of the situation in Netherlands, also noted incremental change.

Chapter 7: Conclusion

Over the preceding chapters, this research had examined the role of different variables to establish their individual impact on capacity building and effectiveness of disaster management. Several of them emerged significant, in varying degrees. It can be said with a fair degree of confidence that interviewee responses had been of immense benefit in explaining reasons for or the lack of correlation. Theory guided the interaction with field level respondents, and provided invaluable insights into the domain of disaster management. Unlike the previous chapters, where explanatory variables were examined for their independent and systematic impact on the variable of interest, the objective here was to assess their relative significance.

It is accepted that statistical analysis had the tools for a neat and mathematically precise correlation. Yet, nagging doubts always remained about being able to derive causal linkages, with confidence. Qualitative research, while lacking in precision and an ability to manipulate data, nevertheless, provided valuable details about perceived correlations. Thereby, they enabled causal explanations, and strengthened theory building with empirically observed and explained linkages.

Development Levels

It was perfectly logical to consider economic resources as a reason for variation among different states for a commonsensical understanding of disaster management. They offered prima facie explanations for a state's policies and capacities.[605] A state that was more developed had more resources, and had the ability to invest in developing its capabilities. Notwithstanding the fact that development of individual states was also a result of unequal and disproportionate

[605] Ware (1996)

investments among states,[606] it was logical to correlate levels of economic development with superior capacities. Superior abilities and infrastructure enabled states to tackle disasters in the immediate short term of preparedness and response as well as the long-term requirements of mitigation and recovery. Its corollary was that states that were economically less developed had difficulties in investing in the disaster management domain, and would perform less ably than their affluent counterparts. However, literature had cautioned against mechanically assuming such consequences. Financial well being did not necessarily lead to better outcomes and the lack of resources did not condemn a state to ineffective administration. Empirical data provided crucial answers.

Economic resources were important for disaster management. Yet, it was recognized that economic resources did not necessarily translate into greater investment in this domain, as there was no dearth of issues that demanded governments' attention and resources. At the same time, it was seen that disaster management did not have a constituency for support, unlike other policy domains. Moreover, there were difficulties in receiving budgetary allotments in the absence of recent disasters. As noted in the agenda-setting and policy change literature, there was greater likelihood of receiving government attention and support immediately after the occurrence of disaster. It was also seen that there were a number of disaster management reforms and programs that did not require large investments, and still had positive results.[607]

The factor of economic resources was seen to be valuable in building disaster infrastructure, both structural and non-structural. States with better resources performed better and those without, lagged behind for the most part. Gujarat was the most capable of the states and was also, comparatively, the most developed. It was able to make budgetary investments

[606] Guruswamy, Baitha and Mohanty (2006)
[607] Sakamura (2001)

without any difficulty and also undertake ambitious programs.[608] Conversely, Bihar lagged far behind in building its systems, and its evident underdevelopment seemed to provide reasons. A developed Tamil Nadu had also invested large amounts of resources in a massive recovery program. The reconstruction program was essentially structural as the state undertook long-term mitigation programs of safer houses, cyclone shelters, shelter belt vegetation and other measures.

Yet, in the case of Orissa, the logic did not hold. Its economic indicators had placed it not far from Bihar, at the bottom of the scale. It would have been consistent if its capabilities were on par or proximate to the latter's. However, it was seen that Orissa had developed impressive capacities. Both structural and non-structural improvements were evident as it built cyclone shelters, laid roads, improved dissemination systems, involved the community in preparing plans, carried out large-scale training programs, and conducted mock drills on a regular basis. The efficacy of its capacities was evident during the Kandhamal riots in December 2007. Its machinery swung into action and took up remedial measures in a prompt and effective manner. The expectation from its level of economic development did not explain its disaster capabilities.

As field research revealed, there was another important feature that affected the relationship between levels of economic development and policy outcomes in disaster management. Even in the case of Gujarat and Tamil Nadu, it was found that capacity building never relied on the state's financial capabilities. States could access funds from the federal center and international sources. As mentioned federal fiscal transfers consisted of the formula based CRF and a more subjective NCCF. States were able to rely on the center for financial resources. Equally important was their recourse to international sources of funding from the World Bank, Asian Development Bank (ADB), Department for International Development (DFID) and others.

[608] Interviews with senior officials in Gujarat, provided the information that disaster management domain got budgetary allocations as per requirement. They spoke about taking up micro-zoning as a part of policy reform.

Irrespective of states' own resources, national and international resources offset a handicap that they may have had. Consequently, it also explained Orissa's ability to invest heavily, despite intrinsically weak, development levels. Moreover, the human tragedy aspect of disasters brought in a lot of assistance, cash and in-kind contributions. International agencies, multilateral and not-for-profit organizations, lent a helping hand in the immediate aftermath of the disaster and recovery.[609]

The role of international financial organizations had been crucial as all the three states that undertook capacity building, sought funds from them. The large overseas borrowings appeared to be evidence of insufficient central transfers. Tamil Nadu, despite having received large amounts for its post-tsunami reconstruction from the Government of India, also turned to the World Bank and ADB for its ambitious, capacity building plans. An important consideration that proved significant was the timing of these overseas transactions. Invariably, they happened after mega disasters in those states, strengthening the likelihood of focusing events as the critical factor that provided impetus.

Hence, levels of economic development did not adequately explain the difference in state behavior, especially with regard to the timing of the decision to invest in capacity building. For example, it did not explain why a more developed state like Gujarat had no comprehensive disaster management strategy for responding to different disasters in 2001.[610] Moreover, it was not able to explain why and how reform was undertaken by less developed states. There was an imperative to go beyond this factor, from a normative point of view too. Failure to do so would condemn less-developed states, and even countries by extension, to a state of ill preparedness and weak capacity building. Moreover, many non-structural measures required strong

[609] Smillie and Linear (2004)
[610] UNDP (2001)

governance rather than economic resources. Unless economic resources were correlated with strong governance, such arguments were likely to create more complications than provide answers. It was concluded that it was an enabling factor that was important whenever the decision to undertake change is taken.

Role of Democratic Decentralized Institutions

Among alternate explanations, the role of institutions appeared to have important pointers to explaining outcomes. Democratic decentralized institutions appealed to this study because disasters were seen as local events and because local employees or volunteers were always first on the scene. Therefore, it was necessary to study an explanation drawn from the institutional structure of local institutions. Yet, it was necessary to recognize important features in the framework. As Indian states were the unit of analysis already, it was necessary to identify other institutional arrangements that were related to disaster management. This study undertook, therefore, to study the Panchayati Raj Institutions (PRIs), which were a three-tiered organizational framework.

As the empirical data showed, local self-governing bodies showed tremendous potential to impact positive outcomes in disaster management. It was noticed that the lowest tier, at the gram panchayat level,[611] was associated with the domain, for the most part. In the limited sphere of their activities, such as distribution of relief, assessment of damages, and other functions, they played a vital role. Most respondents were effusive in their appreciation for the role of these functionaries. Though they functioned as agencies of government, they played an invaluable role in assisting the state.

[611] In Gujarat, it was the village panchayat, as there was no institution at the gram panchayat level, which was a group of villages.

Across all states, their contribution was recognized as being vital. In Bihar, their role was primarily limited to ensuring distribution of food grains and estimation of damages. While there were individual contributions in search and rescue as well as evacuation, the extent of their involvement was limited to a few activities in the response phase. With respect to those activities too, local bodies and their elected functionaries were found to have played a positive and enabling role. In contrast, PRIs had a much larger responsibility to discharge in Orissa that included community based plans, training, cyclone shelter management, dissemination of warnings, evacuation, search and rescue and the tasks of relief distribution and damage assessments. Notwithstanding the strong presence of NGOs in the preparation of plans and organizing community response, PRIs played an important role and contributed to the inherent strength of the system in Orissa. In Tamil Nadu too, they figured prominently in the policy domain with an active role in dissemination and reconstruction in addition to the traditional responsibilities for relief. Gujarat, as the state which was the most decentralized of the four, also involved its PRIs in disaster management. Its respondents clearly articulated the importance of their role in planning, and dissemination and relief activities. Thus, despite, variation among the states regarding the extent of their participation, it was recognized that they contributed immensely to the outcomes in the domain.

Also important was the confidence that local institutions had in their own strengths. Having seen the effectiveness of their involvement in a limited sphere, its leaders were emphatic about being able to do equally well even if more responsibilities were entrusted to them. As many of them said, they were closer to the scene, had better knowledge of local resources as well as weaknesses and were perceived to derive political advantages from good performances. Moreover, they had a direct stake as the effect of the disaster was direct and immediate, in

relation to those affected in their panchayat. Considering these factors, local leaders were confident about being able to improve outcomes if they were given additional responsibilities.

The weakness of this explanatory factor also became evident in their statement. PRIs in India were functioning as executing agencies of government programs and priorities. They did not act as autonomous bodies and, thereby, did not realize the full potential. Such conclusions found support in PRIs reluctance to raise their own resources through taxes and other mechanisms.[612] In the absence of decision making at that level, PRIs were more of locally elected agencies that carried out government directions.[613] They were not the "little republics" that they were conceived to be. The full extent of their potential did not come into play. They did not have any independent capacities of their own, beyond the advantages of information and proximity to the scene of disaster. Therefore, it was not possible to view them as being responsible for the improvements in capacity building for dealing with disasters.

Consequently, PRIs did not prove to be a conclusively significant variable that were responsible for explaining differential outcomes in disaster administration for the following reasons. First, democratic decentralization in India had not become a third and autonomous level of governance. Instead, it was an avenue for limited local representation in a rigidly circumscribed sphere of activities. As noted in literature, state level political leaders and civil servants were reluctant to cede powers and responsibilities.[614] Local self-government, even where it had a larger role, had other responsibilities that did not cover the domain of disaster management. Second, these institutions were functioning more like agencies of state government rather than as autonomous self-governing institutions. Their approach seemed to be that they can

[612] PRIs showed no inclination to tax and raise revenues, bearing out some of the pathologies mentioned in literature. Mathew (2000)
[613] World Bank (2000)
[614] Shah and Thompson (2004)

carry out disaster management, if asked to or allowed by the state government, and when provided adequate resources. It never amounted to taking on responsibility out of constituency concerns even when they were uniquely positioned to discharge it. Third, an obvious shortcoming of these institutions was inadequacy of resources. They had to rely on fiscal transfers, from the federal and state governments. Despite having the authority to raise resources, few of them exercised it to become self-reliant.

On the whole, the limited role of PRIs in India did not provide any conclusive evidence of having been the explanatory factor for capacity building in the different states. Their limited role and capacities did not allow such conclusions. Nevertheless, it was not a judgment on their capacities and their potential for being critical variables in effective disaster management. Instead of holding democratic decentralized institutions as an inadequate explanatory factor, it can be justifiably argued that the Indian case was not an appropriate one to adjudge their efficacy.

On the basis of evidence obtained in the field, democratic decentralization did not emerge as a significant predictor of disaster management outcomes in India. Local bodies functioned as executing agencies of government rather than autonomous tiers of governance. Their role as first responders was truncated as policemen and medical personnel were state employees. Uniformly, across all the four selected cases, there was no evidence of local bodies making policy or taking up disaster management concerns because they were deemed important by its inhabitants. In the long run, PRIs were unlikely to succeed as autonomous organizations, if there were no advantages in being accountable to its residents.[615] While the strength of these institutions was visible, they did not play a meaningful role that impacted capacities for dealing with disasters in India. At best, they eased the situation for the state, by handling some important functions during

[615] Shah and Thompson (2004)

the immediate aftermath. Whether they can contribute more effectively in an all-phases approach of disaster management and be a critical factor, or whether they will become victims of the numerous pathologies that had been outlined in theory, remains unresolved. However, all indications appeared to point that they would prove significant, if they had greater responsibilities. In the Indian context, the situation did not warrant positive conclusions. At the same time, it can be argued that it did not disconfirm either. Yet, since it failed to conclusively indicate a positive relationship, it was not considered as a significant variable in this research.

Party System and Electoral Salience

Another variable was the prism of electoral politics. Greater party cohesion and higher electoral salience were considered to drive policy reform. Abiding self-interest of rational, calculating, political actors was deemed to provide a rationale to explain policy developments. Hence, factors that played a role in electoral dynamics such as party cohesion and issue salience were examined for their impact on the dependent variable. Literature had noted that party cohesion was a good predictor of policy reform and superior delivery of public goods. It was also seen that disaster management, while not being the lone agenda in any elections, was one of the important ones.[616]

It was forcefully argued that the presence of political parties in the political system, allowed for superior outcomes for a couple of reasons. First, fewer parties reflected a system in which political actors had to appeal to the electorate at large, and not select groups that formed the base in a fragmented system. Also relevant to the context was a competitive electoral system of First-Past-The-Post, long regarded as a causal factor for a two-party system. Therefore, greater party cohesion created electoral salience for the policy domain resulting in provision of public goods. Voter salience was a function of party cohesion, as political actors became interested in services and goods that appealed across societal divides. Conversely, fragmented party systems

[616] Morena and Ilcheva (2007)

only needed to cater to limited constituencies and their demands for private goods. Second, it was easier to introduce reform when there were fewer players because of the reduced number of 'veto players',[617] who could each impact the agenda of change.[618] Therefore, it was hypothesized that states that had lower scores on party fragmentation would also have disaster management high on their electoral agendas. Consequently, it was expected to lead to progress in the provision of public goods in the disaster domain in the form of capacity enhancement and other reforms.

To place the issues in their context, it was noted that the Indian electoral system was a First-Past-The-Post single-ballot, plural majority system that engendered more competition. The situation in the field provided significant evidence about the utility of this variable in explaining outcomes in disaster management. Empirical research revealed that Gujarat had the most cohesive party system with its ENP score being closer to two. However, on closer examination it revealed characteristics of a dominant party framework than a two party system. It explained a correlation with superior outcomes in terms of fewer veto players. However, there was no unequivocal recognition of issue salience during elections. The evidence was mixed with a significant number of respondents talking about factors that militated against making it an issue in electoral contests. The conclusion was unclear with explanations for policy outcomes due to party cohesion only, without a clear picture on the intervening variable of electoral salience.

On the other hand, Bihar represented a perfect example of the hypothesis. Party fragmentation was highest and there was no issue salience during elections. Consequently, the ruling party faced no threat on account of the state's performance in disaster management. Respondents cutting across party lines, political-administrative divide, and at all levels of

[617] Tsebelis (2002)
[618] Chhibber and Kollman (2004)

governance said that there was no issue salience during elections. Despite recognizing its relevance for the state and evidence of poor governance, no political party paid a penalty for such neglect. The same political party continued to win elections, and remained in power for three terms until 2005. In a pattern that agreed with the hypothesis, absence of electoral salience was indicative of concerns for private goods for specific constituent groups. The electoral issues were also related to identity issues, arising out of social cleavages. It explained the absence of public goods in electoral discourse.

Tamil Nadu, known for having the closest to a two party system, also exhibited a high degree of party cohesion. While there was significant party cohesion score in the state, the more important thing was the regular alternation of power between the two parties.[619] A logical expectation would have been high electoral salience, especially after the 2004 tsunami disaster. Field responses did not reveal it. The overriding factor appeared to be traditional two party rivalries that crowded out policy concerns. A significant level of party cohesion translated into competitive electoral contests, which resulted in alternation of power due to anti-incumbency sentiments more than performance in disaster management.

Orissa conformed to expectations. There was evidence of party cohesion and electoral salience in Orissa that lent credence to the hypothesis. Respondents did believe that disaster management was an important item on the agenda that played a role in swaying people's votes in Orissa. The incumbent government lost elections, and it appeared that its performance in this policy domain was a contributory factor. Voter salience indicated that governance issues were important, and that parties were punished on that count.

[619] In Gujarat, the same party, BJP, dominated in successive elections, whereas in Tamil Nadu, the ADMK (also known as ADK and AIADMK) in 1991 and the DMK in 1996, registered landslide victories.

On the whole, empirical evidence only lent partial support to a causal relationship with policy outcomes in disaster management. Electoral salience did prove important in two of four cases, in Orissa, Bihar, and Gujarat, to some extent. In Tamil Nadu its impact was subsumed in traditional two-party rivalries. In Gujarat's case, its dominant party system appeared to have the expected impact without the intervention of electoral salience. Party cohesion and electoral salience appeared to be significant indicators of administrative behavior and policy outcomes, only in part. The factor of uncertainty associated with disasters and a short public memory, appeared to have limited the influence of this political variable.

Focusing Events and Organizational Learning

Lastly, the role of Focusing Events and Organizational Learning was found to be significant in explaining outcomes. It was the most tenuous of variables and it was found to be difficult to precisely isolate the impact of focusing events through a process of organizational learning. Literature spoke about the learning consequences and the policy results of the major disasters. It was seen that experience of major disasters as focusing events was a double-loop learning experience, resulting in major policy reform and capacity building. The disaster and devastation suffered in these events was the trigger that led states to take up policy overhaul in disaster management.

The evidence proved to be consistent with expectations in all the cases. For example, Bihar with its weak capacities did not have the traumatic experience of a focusing event to lead to capacity building. Floods were annual tragedies without any particular disaster event standing out as a particularly devastating one. All the states in this study that took up reform, Gujarat, Orissa and Tamil Nadu, had experienced mega disaster events. Public perceptions clearly

confirmed the occurrence of these events. And evidence of change thereafter clearly suggested the causal relationship.

From the above, it became clear that perception of potential focusing events as well as its impact on thoroughgoing reform was abundantly evident in Gujarat and Orissa. All the respondents were able to identify the events as well as their impact on policy change, with a paradigm shift that was indicative of double-loop learning. Every one of the respondents across different districts, at various levels of governance organizations, was unanimous about it. Even in Tamil Nadu, which had suffered an unprecedented tsunami, there was a massive capacity building effort. The focus on CBDMPs and the evidence of learning in the coastal areas did provide a significant indication of double-loop learning that was a consequence of the 2004 tsunami

In addition, focusing events were also instrumental in intervening in the impact of other factors. Resource-rich states also undertook reform after the experience of a focusing event. States fortunate enough to escape calamities felt less compelled to take up reform, irrespective of the presence of other compelling factors. They also served to highlight the deficiencies of disaster management abilities of the state, encouraging normally reluctant state level leaders to involve PRIs in the domain. Finally, known vulnerabilities of states never reached the agenda plate of electoral contests in the normal course. Focusing events had the potential to highlight their importance and direct attention to their strengths and weaknesses in providing public goods.

There was immense potential for disaster research to seek more specific answers than the broad causal relationship identified in this study. While the potential of focusing events for organizational learning was good at providing significantly consistent explanations, there was scope for further refinement. At this point, it was not established clearly how disasters become

focusing events, because all of them did not. Reliance had to be placed on subjective perceptions of the event, which were difficult to define or describe or predict. Second, the extent of policy change was also not predictable with great accuracy. It was seen that of all the selected states, Gujarat undertook the most comprehensive reform and capacity building in all phases. On the other hand, Orissa laid greater stress on preparedness and response in building its capacities, whereas Tamil Nadu mostly focused on reconstruction and mitigation activities. It remained to be seen whether Bihar will also embark on capacity building, having suffered a major calamity in 2008, with the Kosi River breaching its embankments. At last count, there were reports about massive policy changes and enormous spending programs. It was not clear how and to what extent focusing events had consequences, and this research was only drawing inferences about the strong possibility of its consequences in policy reform. It nevertheless recognized that focusing events had been the most consistently significant predictors of capacity building in states.

Generalizability and Implications

Literature had noted the increasing importance of the interaction between disasters and urban settings.[620] The cases of Kolkata and Ahmedabad also supported the hypothesis about focusing events. Officials of both cities were interviewed during field research. Kolkata is a mega city located in the eastern part of India, and Ahmedabad in its west. Both are capitals of their respective states, West Bengal and Gujarat, and had similar structures of bureaucracy and elected leadership. Kolkata had not suffered a major disaster event, whereas Ahmedabad had suffered the earthquake in 2001, major communal riots in 2002, and terrorist attacks in 2008. Importantly, there was no complaint about paucity of resources in both cities. On the contrary, in one city there were concerns about a lack of capacities to expend resources. Further, both cities

[620] Mitchell (1999)

had locally elected municipal bodies, which were similarly handicapped in terms of functions and control over functionaries.

It was found that Kolkata was relatively less prepared for facing a natural or manmade emergency. Respondents were candid in admitting the city's numerous weaknesses. First and foremost, while infrastructure investments had increased, it had not developed a comprehensive and generic disaster management plan. The city's machinery was geared towards dealing with fire accidents, collapse of high-rise buildings, terrorist attacks and, to an extent, epidemics only. Respondents accepted that their state of preparedness was weak. Second and the most worrisome aspect was confusion in inter-agency coordination. The lines of authority and decision-making were unclear and there was no attempt to integrate the roles of different agencies. Bureaucratic politics and lack of a clear incident command system were recognized. An unfortunate consequence was that the few agencies that had mock drills, held them alone. Third, there was a significant gap in human resource development with limited avenues of training in disaster management. Overall, a low level of sensitization towards disasters was evident.

On the other hand, Ahmedabad with its experience of natural and manmade disasters clearly showed evidence of learning. First, there was a clear perspective plan on tackling disasters that was not limited to one or two types of disaster agents. Second, there was no confusion about inter-agency coordination, which was worked out in great detail. There was absolute clarity about the decision-making apparatus. Third, after the 2001 earthquake, the city had acquired a large amount of equipment to deal with different types of crises. Importantly, respondents identified the 2001 earthquake as the main reason for a heightened level of sensitization. On the whole, in comparison with Kolkata, it appeared that Ahmedabad was better prepared for handling emergencies because of its experience of focusing events.

The findings of this research are significant beyond the examples. They are useful for theoretical development of policy reform in the disaster domain. Mid-level theorization becomes easier for fleshing out the relationship that had only been broadly established in this research. It contributes to the literature for enabling research about the distinctive characteristics of 'focusing events' in a manner that reduces the subjective appreciation of the phenomena. This research also directs attention on the need to examine linkages between the type and impact of disasters and the extent of policy change. In addition to the concerns of public administration that had been primarily addressed in this research, other disciplines could use the cross-provincial framework of this research. A research design based on a comparison of states is a major contribution to disaster research that can yield valuable results. While a focus on episodic inquiries or particular types of disaster agents provides rich insights, it is necessary to go beyond case studies.

As mentioned earlier, this work has significant implications for policy makers. It reinforces the need to undertake a vulnerability analysis and undertake all-hazards planning to develop generic capacities. Second, for Indian policy makers, all the signs seem to indicate that local self-governments need to be entrusted a larger role in governance, especially in disaster management. Finally, developing countries need to undertake planning without waiting for a major disaster, and without feeling constrained by a lack of resources. It is never too late to make fruitful investments in developing capacities to deal with disasters.

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Appendix A. Physical Progress of States in GOI-UNDP Program

	Output	Gujarat			Orissa		
		Total up to Apr-2008	Expected Achievement	% of completion	Total up to Apr-2008	Expected Achievement	% of completion
State	Senior Officers and policy makers (including legislators) oriented	1003	1300	77	139	200	70
	State Disaster Management Policy approved	1	1	100	1	1	100
	State Disaster Management Act Enacted	1	1	100	1	1	100
	State Disaster Management Authority set up	1	1	100	1	1	100
	Redesignation of Nodal department as department for DM	0	1	0	1	1	100
	State Disaster Management plan finalized	1	1	100	0	1	0
	State Search & Rescue teams formed and members trained	1	1	100	1	1	100
	Emergency Operation Centre strengthened and equipped	1	1	100	1	1	100
	State Relief Code amended	0	1	0	0	1	0
	Building bylaws amended to include provisions as per BIS Codes	0	1	0	0	1	0
	Funds available under ongoing schemes for mitigation	1	1	100	0	1	0
	DM included in curriculum of Civil Servants training (ATI, Police,)	1	1	100	1	1	100
	DM included in School and University curricula	1	1	100	1	1	100
	DM included in Engineers' curriculum	1	1	100	0	1	0
	DM included in Architects' curriculum	0	1	0	0	1	0
	Strengthening of a State Training Institute in DM	1	1	100	1	1	100
	Master trainers trained at State level	2645	900	294	370	300	123
	Professional bodies and corporate executives sensitized	502	100	502	845	750	113
	Manuals and SOPs finalized and approved	54	70	77	23	23	100
	Massive awareness campaigns conducted (TV, Radio, newspaper)	14	0	-	1	1	100
	* * *	* * *	* * *	* * *	* * *	* * *	* * *
District	Disaster Management Committees formed	14	14	100	16	16	100
	DMC Members trained	2509	850	295	446	400	112
	Other officials trained (Govt Officials, local functionaries…)	5358	1460	367	423	350	121
	Disaster Management Plans finalized	14	14	100	16	16	100
	DMT Members trained in First Aid	659	240	275	1711	765	224
	DMT Members trained in Search and rescue	1029	250	412	726	673	108
	Emergency Operation Centres equipped	14	14	100	16	16	100
	Emergency kits/search and rescue kits distributed	0	14	0	16	16	100
	PRIs trained in Disaster Management	1505	450	334	662	200	331
	Of whom Women trained	512	148	346	185	58	320
	Teachers trained in Disaster Management	18048	1500	1203	8339	850	981
	NSS & NYKS (or other institution) Volunteers trained in DM	5695	1500	380	10960	3000	365
	Architects trained in disaster resistant technologies	134	80	168	7	32	22
	Engineers trained (DM & disaster resistance technologies)	409	300	136	1356	900	151
	Disaster resistant demonstration units constructed	18	14	129	16	16	100
	Mock drills conducted	107	56	191	28	16	175
	District having entered data to the IDRN	14	14	100	16	16	100
	District DM Plans updated by DMC	56	56	100	16	16	100

	Output	Gujarat			Orissa		
		Total up to Apr-2008	Expected Achievement	% of completion	Total up to Apr-2008	Expected Achievement	% of completion
Block	DMCs formed	142	142	100	155	155	100
	DMC Members trained	8867	2130	416	4466	1550	288
	Other officials trained (Govt. Officials, local functionaries…)	12362	1860	665	1581	1550	102
	Disaster Management Plans finalized	142	142	100	155	155	100
	DMT Members trained in First Aid	5187	1500	346	4971	765	650
	DMT Members trained in Search and rescue	3121	280	1115	708	673	105
	PRIs trained in Disaster Management	9144	5000	183	9459	6000	158
	Of whom Women trained	2286	1600	143	2459	1680	146
	Village Volunteers trained at Block level	8440	1800	469	7016	6000	117
	Of whom Women volunteers trained	2532	558	454	1964	1680	117
	Data base (of volunteers trained discipline wise) created	286	200	143	16	16	100
	Masons trained	1284	1000	128	2042	1500	136
	Mock drills conducted	296	142	208	62	155	40
	Block DM plans updated by DMC	380	284	134	126	155	81
	* * *	* * *	* * *	* * *	* * *	* * *	* * *
GP	DMCs formed	0	0	-	3127	3210	97
	DMC Members trained	0	0	-	52257	32100	163
	Of whom women DMC members trained	0	0	-	13064	6420	203
	Disaster Management Plans finalized	0	0	-	2816	3210	88
	DMT Members trained in First Aid	0	0	-	9870	9630	102
	Of whom Women trained in First Aid	0	0	-	2369	3177	75
	DMT Members trained in Search and rescue	0	0	-	9406	9630	98
	Of whom Women trained in Search and rescue	0	0	-	1599	3177	50
	Mock drills conducted	0	0	-	502	2000	25
	* * *	* * *	* * *	* * *	* * *	* * *	* * *
Village	Villages DMC formed	11513	11342	102	21542	23263	93
	DMC Members trained	117155	113420	103	257690	232630	111
	Of whom Women DMC Members trained	38661	22684	170	72153	23263	310
	Disaster Management Plans finalized	10375	11342	91	21107	23263	91
	Village DMT trained in First Aid	38404	22000	175	54844	46526	118
	Of whom Women trained in First Aid	15362	7260	212	19744	23263	85
	Village DMT trained in Search and Rescue	28167	20000	141	45325	46526	97
	Of whom Women trained in Search and Rescue	5070	6400	79	10425	23263	45
	Villages with contingency fund for emergency response	32	4000	1	2305	23263	10
	Awareness sensitization meetings	14034	12000	17	22574	23263	97
	Number of wall paintings	8234	8000	103	3165	0	-
	IEC distributed (posters, leaflets, etc…)	11917	11342	105	52426	23263	225
	Mock drills conducted	1681	4174	40	4023	23263	17
	Village DM plan updated by DMC	8846	4174	212	6356	20000	32
	* * *	* * *	* * *	* * *	* * *	* * *	* * *
ULB	DMC formed	96	87	110	58	58	100
	DMC Members trained	3066	1000	307	993	580	171
	Disaster Management Plans finalized	92	87	106	0	58	0
	Mock drills conducted	164	87	189	0	58	0

	Output	Bihar			Tamil Nadu		
		Total up to Sep-2007	Expected Achievement	% of completion	Total up to Sep-2007	Expected Achievement	% of completion
State	Senior Officers and policy makers (including legislators) oriented	128	350	37	679	290	234
	State Disaster Management Policy approved	0	1	0	1	1	100
	State Disaster Management Act Enacted	1	1	100	1	1	100
	State Disaster Management Authority set up	1	1	100	1	1	100
	Redesignation of Nodal department as department for DM	0	1	0	1	1	100
	State Disaster Management plan finalized	0	1	0	0	1	0
	State Search & Rescue teams formed and members trained	0	1	0	1	1	100
	Emergency Operation Centre strengthened and equipped	1	1	100	1	1	100
	State Relief Code amended	0	1		0	1	0
	Building bylaws amended to include provisions as per BIS Codes	1	1	100	0	1	0
	Funds available under ongoing schemes for mitigation	0	1	0	1	1	100
	DM included in curriculum of Civil Servants training (ATI, Police,)	1	1	100	1	1	100
	DM included in School and University curricula	1	1	100	1	1	100
	DM included in Engineers' curriculum	0	1	0	1	1	100
	DM included in Architects' curriculum	1	1	100	1	1	100
	Strengthening of a State Training Institute in DM	1	1	100	1	1	100
	Master trainers trained at State level	352	200	176	236	50	472
	Professional bodies and corporate executives sensitized	1	30	3	6	10	60
	Manuals and SOPs finalized and approved	10	15	67	8	10	80
	Massive awareness campaigns conducted (TV, Radio, newspaper)	1	25	4	8	10	80
	* * *	* * *	* * *	* * *	* * *	* * *	* * *
District	Disaster Management Committees formed	14	14	100	6	6	100
	DMC Members trained	1110	543	204	478	240	199
	Other officials trained (Govt Officials, local functionaries…)	1048	700	150	444	60	740
	Disaster Management Plans finalized	14	14	100	6	6	100
	DMT Members trained in First Aid	710	280	254	144	60	240
	DMT Members trained in Search and rescue	447	280	160	126	60	210
	Emergency Operation Centres equipped	14	14	100	6	6	100
	Emergency kits/search and rescue kits distributed	0	14	0	6	6	100
	PRIs trained in Disaster Management	4279	700	611	165	120	138
	Of whom Women trained	1551	210	739	38	60	105
	Teachers trained in Disaster Management	2329	1200	194	4152	60	6920
	NSS & NYKS (or other institution) Volunteers trained in DM	2857	1400	204	8416	60	14027
	Architects trained in disaster resistant technologies	261	260	100	0	30	0
	Engineers trained (DM & disaster resistance technologies)	780	400	195	53	30	177
	Disaster resistant demonstration units constructed	119	14	850	6	12	50
	Mock drills conducted	8	94	9	28	24	117
	District having entered data to the IDRN	14	14	100	6	6	100
	District DM Plans updated by DMC	9	43	21	0	6	0

	Output	Bihar			Tamil Nadu		
		Total up to Sep-2007	Expected Achievement	% of completion	Total up to Sep-2007	Expected Achievement	% of completion
Block	DMCs formed	199	201	99	64	64	100
	DMC Members trained	8035	4000	201	2643	1280	206
	Other officials trained (Govt. Officials, local functionaries…)	3008	2000	150	3045	640	476
	Disaster Management Plans finalized	156	201	78	56	64	88
	DMT Members trained in First Aid	3156	2000	158	1736	640	271
	DMT Members trained in Search and rescue	2104	2000	105	1736	640	271
	PRIs trained in Disaster Management	28694	5380	533	5272	1920	275
	Of whom Women trained	3113	1614	193	1634	595	275
	Village Volunteers trained at Block level	16363	20000	82	11919	6400	186
	Of whom Women volunteers trained	2813	6000	47	3337	1920	174
	Data base (of volunteers trained discipline wise) created	61	14	436	774	64	1209
	Masons trained	5118	10500	49	26	1280	2
	Mock drills conducted	69	1360	5	111	192	58
	Block DM plans updated by DMC	38	652	6	30	64	47
	* * *	* * *	* * *	* * *	* * *	* * *	* * *
GP	DMCs formed	3061	3438	89	8565	5616	327
	DMC Members trained	51664	68100	76	14943	26160	57
	Of whom women DMC members trained	14912	21430	73	4035	7848	51
	Disaster Management Plans finalized	2185	3438	64	2173	2616	83
	DMT Members trained in First Aid	3542	13752	26	627	26160	2
	Of whom Women trained in First Aid	1092	4126	26	288	7848	4
	DMT Members trained in Search and rescue	3974	13752	29	634	26160	2
	Of whom Women trained in Search and rescue	1135	4126	28	247	7848	3
	Mock drills conducted	545	21218	3	771	5232	15
	* * *	* * *	* * *	* * *	* * *	* * *	* * *
Village	Villages DMC formed	9867	12856	77	5204	3397	153
	DMC Members trained	149872	128560	117	4842	33970	14
	Of whom Women DMC Members trained	35926	19284	186	1695	10191	17
	Disaster Management Plans finalized	6896	12856	54	4649	3397	137
	Village DMT trained in First Aid	8090	25712	31	21653	33970	64
	Of whom Women trained in First Aid	1802	12856	14	7362	10191	72
	Village DMT trained in Search and Rescue	7619	25712	30	18053	33970	53
	Of whom Women trained in Search and Rescue	1609	12856	13	2888	10191	28
	Villages with contingency fund for emergency response	1240	12856	10	0	3397	0
	Awareness sensitization meetings	9661	25712	39	2521	3397	74
	Number of wall paintings	1374	0	-	366	3397	11
	IEC distributed (posters, leaflets, etc…)	9854	12856	77	42100	3397	1239
	Mock drills conducted	1586	78311	2	1867	3397	55
	Village DM plan updated by DMC	1193	40055	3	2042	3397	60
	* * *	* * *	* * *	* * *	* * *	* * *	* * *
ULB	DMC formed	30	42	71	167	17	982
	DMC Members trained	656	1050	62	3019	340	888
	Disaster Management Plans finalized	6	42	14	45	17	265
	Mock drills conducted	0	126	0	31	51	61

Appendix B: List of Political Parties in Bihar

I. 1990 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS
JD JANATA DAL
JNP (JP) JANATA PARTY (JP)

STATE PARTY
JMM JHARKHAND MUKTI MORCHA

REGISTERED (Unrecognized) PARTIES
IPF INDIAN PEOPLES FRONT
JKD JHARKHAND DAL
MCOR MARXIST CO-ORDINATION
SOP (L) SOCIALIST PARTY (LOHIA)

INDEPENDENTS
IND INDEPENDENTS

II. 1995 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS
JD JANATA DAL
SAP SAMATA PARTY

STATE PARTIES
BSP BAHUJAN SAMAJ PARTY
JMM JHARKHAND MUKTI MORCHA
JPP JHARKHAND PEOPLE'S PARTY
SP SAMAJWADI PARTY

REGISTERED(Unrecognized) PARTIES
BPP BHARTIYA PRAGATISHEEL PARTY
CPI (ML) (L) COMMUNIST PARTY OF INDIA (MARXIST-LENNINIST)(LIBERATION)
CVP CHAMPARAN VIKAS PARTY
IPF INDIAN PEOPLES FRONT

JKP JHARKHAND PARTY
JMM (M) JHARKHAND MUKTI MORCHA (MARDI)
JMM(S) JHARKHAND MUKTI MORCHA (SOREN)
MCOR MARXIST CO-ORDINATION

INDEPENDENTS
IND INDEPENDENTS

III. 2000 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
BSP BAHUJAN SAMAJ PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS
JD (U) JANATA DAL (United)
SAP SAMATA PARTY

STATE PARTIES
CPI (ML) (L) COMMUNIST PARTY OF INDIA (MARXIST-LENNINIST)(LIBERATION)
JMM JHARKHAND MUKTI MORCHA
RJD RASHTRIYA JANATA DAL
SAP SAMATA PARTY
UGDP UNITED GOANS DEMOCRATIC PARTY

REGISTERED (Unrecognized) PARTIES
KSP KOSAL PARTY
MCO MARXIST CO-ORDINATION

INDEPENDENTS
IND INDEPENDENTS

IV. February 2005 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
BSP BAHUJAN SAMAJ PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS
NCP NATIONALIST CONGRESS PARTY

STATE PARTIES
JD (U) JANATA DAL (United)
JMM JHARKHAND MUKTI MORCHA
RJD RASHTRIYA JANATA DAL

STATE PARTIES – (Recognized in) OTHER STATES
CPI (ML) (L) COMMUNIST PARTY OF INDIA (MARXIST-LENNINIST)
SP SAMAJWADI PARTY

REGISTERED (Unrecognized) PARTY
LJP LOK JAN SHAKTI PARTY

INDEPENDENTS
IND INDEPENDENTS

V. October 2005 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
BSP BAHUJAN SAMAJ PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS
NCP NATIONALIST CONGRESS PARTY

STATE PARTIES
CPI(ML)(L) COMMUNIST PARTY OF INDIA (Marxist-Leninist) (Liberation)
JD(U) JANATA DAL (United)
LJP LOK JAN SHAKTI PARTY
RJD RASHTRIYA JANATA DAL

STATE PARTY – (Recognized in)OTHER STATES
SP SAMAJWADI PARTY

REGISTERED (Unrecognized) PARTY
AJVD AKHIL JAN VIKAS DAL

INDEPENDENTS
IND INDEPENDENTS

Appendix C: List of Political Parties in Gujarat

I. 1990 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
INC INDIAN NATIONAL CONGRESS
JD JANATA DAL

REGISTERED (Unrecognized) PARTY
YVP YUVA VIKAS PARTY

INDEPENDENTS
IND INDEPENDENTS

II. 1995 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
INC INDIAN NATIONAL CONGRESS

INDEPENDENTS
IND INDEPENDENTS

III.1998 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
INC INDIAN NATIONAL CONGRESS
JD JANATA DAL

STATE PARTIES
AIRJP ALL INDIA RASHTRIYA JANATA PARTY
SP SAMAJWADI PARTY

INDEPENDENTS
IND INDEPENDENTS

IV. 2002 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
INC INDIAN NATIONAL CONGRESS

STATE PARTY – (Recognized in) OTHER STATES
JD (U) JANATA DAL (United)

INDEPENDENTS
IND INDEPENDENTS

V. 2007 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
INC INDIAN NATIONAL CONGRESS

STATE PARTY
JD (U) JANATA DAL (United)

INDEPENDENTS
IND INDEPENDENTS

Appendix D: List of Political Parties in Orissa

I. 1990 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS
JD JANATA DAL

INDEPENDENTS
IND INDEPENDENTS

II. 1995 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
CPI COMMUNIST PARTY OF INDIA
INC INDIAN NATIONAL CONGRESS
JD JANATA DAL

STATE PARTIES
JMM JHARKHAND MUKTI MORCHA
JPP JHARKHAND PEOPLE'S PARTY

INDEPENDENTS
IND INDEPENDENTS

III. 2000 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS
JD(S) JANATA DAL (Secular)

STATE PARTIES
AITC ALL INDIA TRINAMOOL CONGRESS
BJD BIJU JANATA DAL
JMM JHARKHAND MUKTI MORCHA

INDEPENDENTS
IND INDEPENDENTS

IV. 2004 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS

STATE PARTY
BJD BIJU JANATA DAL

STATE PARTY – (Recognized in) OTHER STATES
JMM JHARKHAND MUKTI MORCHA

REGISTERED (Unrecognized) PARTY
OGP ORISSA GANA PARISHAD

INDEPENDENTS
IND INDEPENDENTS

Appendix E: List of Political Parties in Tamil Nadu

I. 1989 Elections

NATIONAL PARTIES
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS

STATE PARTIES
ADK ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM
DMK DRAVIDA MUNNETRA KAZHAGAM

REGISTERED Unrecognized) PARTIES
ADK (JL) ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM (JAYALALITA GROUP)
ADK (JR) ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM (JANAKI RAMACHANDRAN)
JNP JANTA PARTY

INDEPENDENTS
IND INDEPENDENTS

II. 1991 Elections

NATIONAL PARTIES
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
ICS (SCS) INDIAN CONGRESS (SOCIALIST - SARAT CHANDRA SINHA
INC INDIAN NATIONAL CONGRESS
JD JANATA DAL

STATE PARTIES
ADK ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM
DMK DRAVIDA MUNNETRA KAZHAGAM
PMK PATTALI MAKKAL KATCHI

REGISTERED (Unrecognized) PARTY
TMK THAYAKA MARUMALARCHI KAZHAGAM

INDEPENDENTS
IND INDEPENDENTS

III. 1996 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
JD JANATA DAL
JP JANATA PARTY

STATE PARTIES
ADMK ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM
DMK DRAVIDA MUNNETRA KAZHAGAM
FBL ALL INDIA FORWARD BLOC
PMK PATTALI MAKKAL KATCHI
TMC (M) TAMIL MAANILA CONGRESS (MOOPANAR)

INDEPENDENTS
IND INDEPENDENTS

IV. 2001 Elections

NATIONAL PARTIES
BJP BHARTIYA JANATA PARTY
CPI COMMUNIST PARTY OF INDIA
CPM COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS

STATE PARTIES
ADMK ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM
DMK DRAVIDA MUNNETRA KAZHAGAM
FBL ALL INDIA FORWARD BLOC
PMK PATTALI MAKKAL KATCHI
TMC (M) TAMIL MAANILA CONGRESS (MOOPANAR)

REGISTERED (Unrecognized) PARTY
MADMK M.G.R.ANNA D.M. KAZHAGAM

INDEPENDENTS
IND INDEPENDENTS

V. 2006 Elections

NATIONAL PARTIES
CPI COMMUNIST PARTY OF INDIA
CPI (M) COMMUNIST PARTY OF INDIA (MARXIST)
INC INDIAN NATIONAL CONGRESS

STATE PARTIES
AIADMK ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM
DMK DRAVIDA MUNNETRA KAZHAGAM
MDMK MARUMALARCHI DRAVIDA MUNNETRA KAZHAGAM
PMK PATTALI MAKKAL KATCHI

REGISTERED (Unrecognized) PARTIES
DMDK DESIYA MURPOKKU DRAVIDA KAZHAGAM
VCK VIDUTHALAI CHIRUTHAIGAL KATCH

INDEPENDENTS
IND INDEPENDENTS