Managing the Water Crisis in Bundelkhand, India: A Governance Approach

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19 May 2020

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Abstract

The Bundelkhand region in India has been dealing with a severe water crisis for the last two decades. This water crisis has received a significant amount of attention from the central government, media and academics. However, although multiple policies and acts have been passed, and extensive resources distributed, there has not been much improvement on the ground. This thesis analyzes the reasons behind ineffective water governance and implementation at all levels of government, and concludes that over-centralization of planning, crisis-response rather than long-term planning, and a lack of pragmatic planning are key to understanding the current situation. More generally, the disjointed nature of water governance in India has made it difficult for the public sector to carry out cohesive planning approaches. We suggest reforms that can be adopted, and consider the possible consequences to water management and planning if Bundelkhand were to become a separate state.

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ACKNOWLEDGEMENTS

We would like to thank Siddharth Agarwal, founder of Veditum, and Paul Salopek, of the Out of Eden Walk, who granted us the Moving Upstream Fellowship, which became the starting point of this research.

We would like to thank our thesis advisor, James Wescoat, for all the support and guidance he provided us. We would also like to thank our thesis reader, Bish Sanyal, who provided excellent insights into how our analysis could be improved.

LIST OF ACRONYMS

ABSSS - Akhil Bhartiya Samaj Sewa Sansthan

BDO- Block Development Officer

BJP - Bhartiya Janta Party

BMM - Bundelkhand Mukti Morcha

CDC - Center for Disease Control

CGB - Central Groundwater Board

CGWA - Central Ground Water Authority

CPCB - Central Pollution Control Board

CPR - Common Pool Resource

CRDT - Centre for Rural Development and Technology

CWC - Central Water Commission

DAC&FW - Department of Agriculture, Cooperation and Farmers Welfare

DC - District Collector

DDMA - District Disaster Management Authority

DM Act - Disaster Management Act

DRF - Disaster Response Fund

DRR - Disaster Risk Reduction

DUSP - Department of Urban Studies and Planning

EPW - Economic and Political Weekly

GOI - Government of India

GIS - Geographic Information System

HFA - Hyogo Framework for Action

IDNDR - International Decade of Natural Disaster Reduction

IMD - Indian Meteorological Department

INC - Indian National Congress

IWDP - Integrated Wastelands Development Programme

ISRO - Indian Space Research Organization

IWRM - Integrated Water Resource Management

MAFW - Ministry of Agriculture and Farmers' Welfare

MHA - Ministry of Home Affairs

MOJS - Ministry of Jal Shakti

MoWR, RD & GR - Ministry of Water Resources, River Development and Ganga Rejuvenation

MP - Madhya Pradesh

NDMA - National Disaster Management Authority

NDMP - National Disaster Management Plan

NDRF - National Disaster Response Force

NIDM - National Institute of Disaster Management

NRCA - National Research Centre for Agroforestry

NWDA - National Water Development Agency

NWFB - National Water Framework Bill

NWP - National Water Policy

NWRC - National Water Resource Council

NGO - Non-Governmental Organization

NITI - National Institution for Transforming India

SC - Scheduled Caste

SDMA - State Disaster Management Authority

SEC – States Executive Committee

SEZ - Special Economic Zone

SPCB - State Pollution Control Board

SPV - Special Purpose Vehicle

SPW - Special Water Zone

SDRF - State Disaster Response Force

ST - Scheduled Tribe

RBO - River Basin Organization

TERI - The Energy and Resources Institute

UNDP - United Nations Development Program

UP - Uttar Pradesh

WB - World Bank

WMO - World Meteorological Organization

WRI- World Resource Institute

WRIS - Web Enabled Water Resource System

WUA - Water Users' Association

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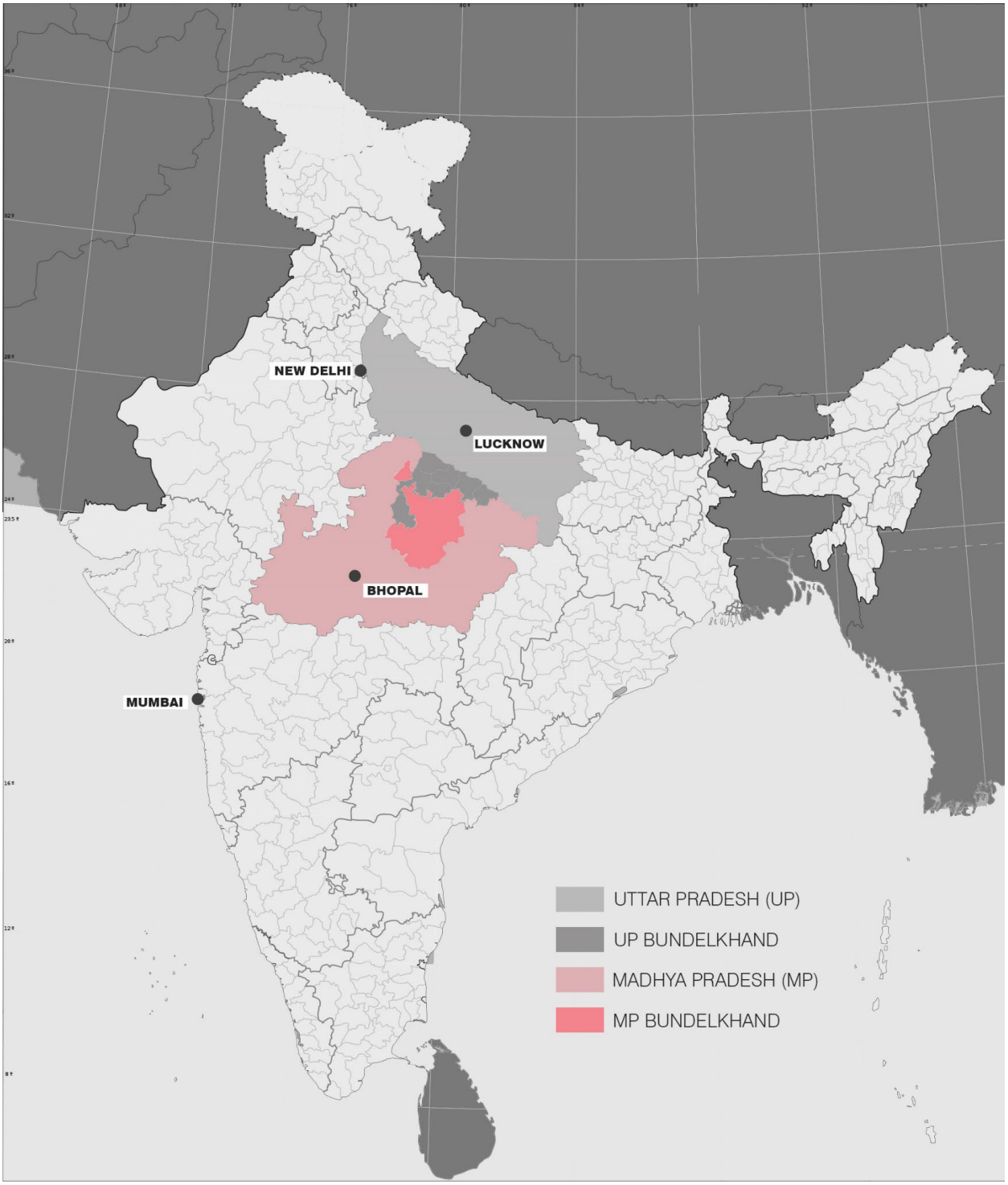


Figure 1: Location Map

Chapter 1: Introduction, Context and Research Question

In this chapter, we will lay out the situation in Bundelkhand, looking at how water scarcity and drought have affected the area for the past few decades, the history of water management in the region, and the current government response. We will then detail the primary and secondary sources we will be analyzing for this thesis.

1.1 Bundelkhand

Bundelkhand, a historic region in the central India, comprises of 13 districts and is spread across the states of Uttar Pradesh and Madhya Pradesh. Seven districts out of the 13 lie in the state of Uttar Pradesh - Jhansi, Jalaun, Lalitpur, Hamirpur, Mahoba, Banda and Chitrakut and 6 in the state of Madhya Pradesh - Datia, Tikamgarh, Chattarpur, Damoh, Sagar and Panna. Together, these 13 districts constitute some of the poorest in India and belong to India's list of 200 most backward districts (UNDP, 2012). Most of the region is rural due to the low level of urbanization. Agriculture and animal husbandry are the primary occupations. Barring a few districts, more than half the population of Bundelkhand is engaged in agriculture.

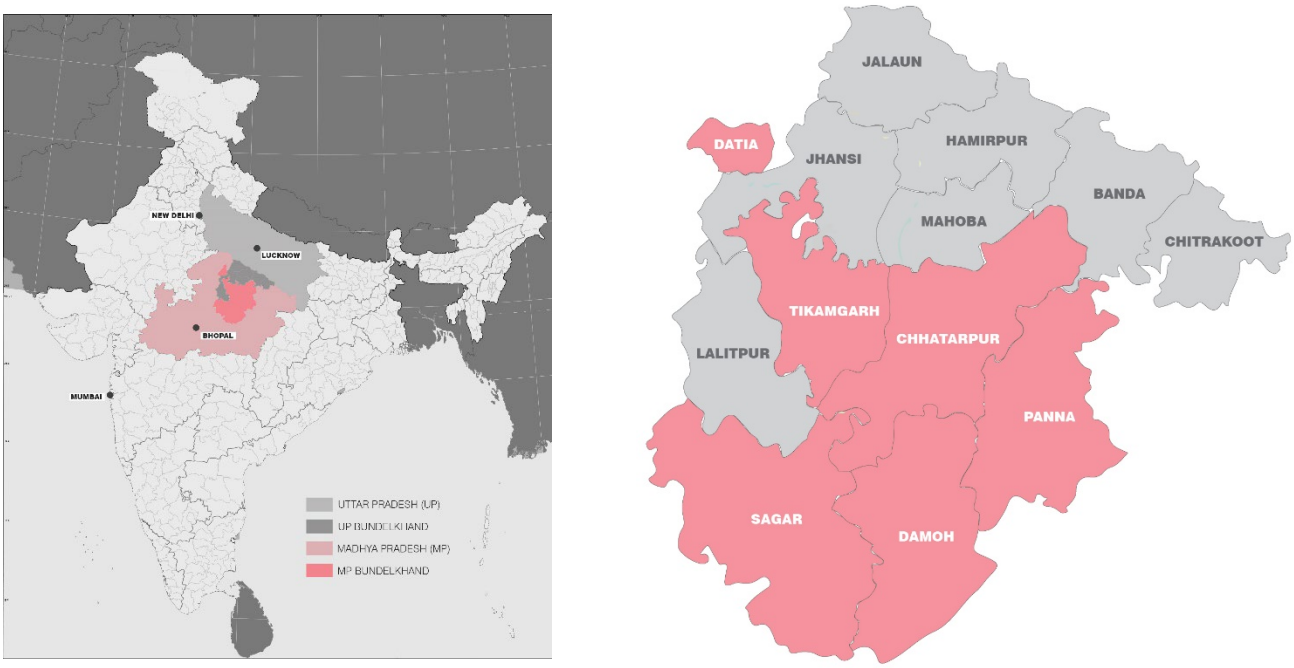


Figure 2: Map of Bundelkhand with its districts

Although Bundelkhand is separated between these two states, its shared history, cultural practices, folklore, religion and language are what cohesively binds it into a region with similar social-religious-cultural identity. However, the difference in laws, codes and norms between the two states, as well as the neglect by the region's individual state governments, has negatively affected Bundelkhand's ability to form a cohesive, sustainable, and implementable plan for better water management.

1.2 Water Crisis in Bundelkhand

Bundelkhand has been dealing with issues of water scarcity since independence, although the situation has taken a turn for the worse in recent decades. Droughts are becoming much more frequent, and the growing population and deforestation have increased water insecurity. During the 19th and 20th century, Bundelkhand only faced 12 droughts- once in every 16 years (Inter-Ministerial Central Team, 2008). Now, however, studies conclude that drought frequencies have increased to once every 8 years in Bundelkhand (Alam et al., 2012). Around 10 districts fell under the moderate to severe category of drought in 2013. Many districts of Bundelkhand are perpetually faced with one of the three kinds of droughts - hydrological, meteorological and agricultural (Nair and Singh, 2013)

The problem of water scarcity in the area can be traced to a number of causes. The primary one is the change in monsoon rainfall patterns. In addition to a decrease in the average amount of precipitation, the occasional heavy deluges wash away the area's topsoil, leaving the ground bare and rocky. The neglect of traditional water harvesting systems, which had developed over the last few centuries, combined with the absence of more modern water and soil management techniques, have left the region more vulnerable than ever before.

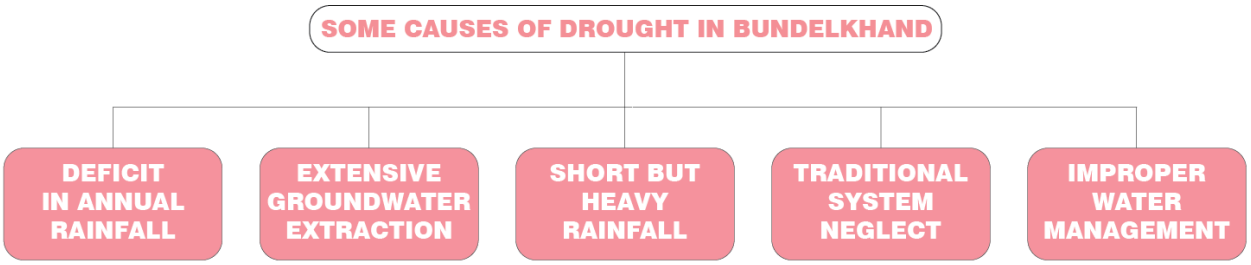


Diagram 1: Causes of Droughts in Bundelkhand

Due to these conditions, farmers end up using groundwater for daily domestic and agricultural needs. However, borewells used to draw out groundwater are usually only accessible to privileged populations. A 2016 survey conducted by Swaraj Abhiyan in 109 villages across MP and UP Bundelkhand showed that only 18% of villages had an adequate number of functional handpumps; this decreased to around 5% in UP-Bundelkhand (Drought in Bundelkhand Bordering on Famine, 2016). Many people's lives are centered around procuring enough water to meet their daily needs. This task often falls upon women, whose traditional role is to collect water for domestic use (Srivastava, 2019).

The average irrigation coverage of the net sown area in the region is below 60%, which means that the rest of the net sown areas relies on the monsoon rains. Most of the water for irrigation purposes also comes from groundwater. In some districts, up to 98% of the water used for irrigation comes from groundwater. Water from the two rivers that run through Bundelkhand- the Ken and the Betwa- is used in some areas for irrigation, but the availability of water in these rivers varies significantly around the year. Ken river's water capacity varies from 8000 cusecs in winter months to 300 cusecs in the summer (UNDP, 2012). Climate change, illegal sand mining and mismanagement of watershed management has led to the drying up of the rivers.

1.3 History of Water Management in Bundelkhand

According to historical records, this over-dependence on both groundwater and seasonal rainfall is a fairly new phenomenon. In a region like Bundelkhand where the land is unable to retain the water from rainfall, it becomes very important to build infrastructure that can do it. The Chandela (9^{th} to 13^{th} century) rulers mastered the art of water management through the construction of tanks, ponds, wells, and other water-harvesting and conservation infrastructure. The Bundela (16^{th} century) rulers also constructed canals for irrigation purposes (Gupta and Singh, 2011). However, this infrastructure has fallen into disrepair.

During the colonial period, more emphasis was placed on large-scale engineering solutions for irrigation, such as dams. This has the effect of transferring the responsibility of ownership, management, and maintenance of these water systems from the local-level communities to the colonial administration. This top-down, engineer-focused approach continued post-independence. Emerging technology, electricity subsidies and no regulation relating to groundwater extraction allowed for the industrial extraction of groundwater. During the Green Revolution in 1960s and 70s, these factors played a significant part in moving people away from collective watershed management and towards unsustainable watershed management characterized by high levels of inequality of access.

1.4 Water and Drought Governance in Bundelkhand

This mismanagement of water associated with droughts in Bundelkhand have been serious enough to warrant the repeated engagement of the central government. Over the last two decades, multiple financial packages were distributed to the UP and MP governments to improve the situation in Bundelkhand. However, a series of problems, including the lack of monitoring and evaluation, a misplaced focus on top-down solutions and the absence of any kind of community involvement has meant that most of the interventions failed (Thakkar, 2019).

In addition, the institutional fragmentation of water administration at the state and central level has made it difficult to achieve a truly coordinated response. At the district, block, and gram panchayat level, weak governance has resulted in poor implementation. Overall, the approach of the public sector is characterized by crisis response- that is, aid during times of extreme distress- rather than long-term sustainable water resource development.

In this thesis, we will be analyzing governance from the national level to the gram panchayat. Our aim is to understand why efforts to solve the water crisis have failed in Bundelkhand, despite decades of high-level analysis, attention by the central government, and the adequate deployment of resources, and explore ways in which planning for the sustainable and equitable water management can be improved.

1.5 Research Design and Methods

This research aims to explore gaps in the water and drought governance in India, that have led to persistent water crisis in the region of Bundelkhand. Top-down approaches, decentralization at state level, fragmented governance structures, lack of inter-agency coordination, exclusion of local actors and centralization of power and funds have created an inefficient governance system which have exacerbated the drought. To study these aspects, the thesis takes an approach based on scales of governance. National, state, district and block are the scales at which water and drought governance is analyzed.

A. Field Research:

This research has branched out of an ethnographic independent study we conducted over January 2019, where we walked along the Betwa River in Bundelkhand for around 11 days covering 130 kilometers and staying at villages that we came across. Through this walk we gathered information from the villagers on the current situation surrounding water and agrarian crisis. Most of the data collected during this walk as qualitative and focused on the perceptions and opinions of the affected communities. This is the starting point for our thesis and we used the report from our walk as a supporting document.

B. Primary Sources:

1. **National Level**
   At the national level we studied the Disaster Management (DM) Act of 2005, National Disaster Management Plan (NDMP) and the National Water Policy (NWP) of 2012. These policies prescribed government institutions responsible for mitigating drought and managing water respectively. Charts locating every institution with their roles and responsibilities were made for further analysis. Each institution was studied in terms of it expertise, capacity and validity to the pertaining task. Separate charts were made for drought, and water governance, as separate agencies handle these issues. We also studied reports made by other institutions such as NIDM, TERI, and UNDP which helped us understand the intricacies of governance structures.

2. **State Level**
   At the state level, we studied governance in two ways. First, we looked at all the institutions prescribed by the national level drought and water policies and acts. Second, we analyzed the actual institutions existing in the states of Uttar Pradesh and Madhya Pradesh. This two-step process gave a clarity on the institutional overlaps and gaps which affects management of water and droughts.

3. **District and Block Level**
   At the district level, we mainly studied the role of district collector/ magistrate, and District Disaster Management Authority (DDMA). Because of centralization of resources at the state level, there is a paucity of agencies dealing with water and drought at this level. We also studied the works by various community based organizations at the district level, who have successfully managed water through participation of local villagers. Further, we study

the structure and role of Block Development Officer (BDO), Gram Panchayats and Gram Sabhas. No policies or acts were published at this level; hence none were studied. However, there are many local level practices that are undocumented in the government data. At the district level, all literature and research was focused on the projects mandated by the center or state at the district level and work undertaken by grassroots organizations.

C. Secondary Sources:

1. **Academic papers and reports**:
   We studied the works of scholars and academic experts who have extensively written about the water crisis in Bundelkhand. Our overall literature is classified into four categories:
   a. Water Scarcity in Bundelkhand
   b. Existing Water and Drought Management at National and State level
   c. Efforts to Improve Water and Drought Disaster Management in Bundelkhand at National and State level
   d. Efforts to Improve Water and Drought Management in Bundelkhand at the Local Level

   More information on these topics is detailed in the literature review in the next chapter. Just like the chapters of this thesis, the literature review has been hierarchically sectioned, moving from the national level to the local level.

2. **Maps, Charts and Diagrams:**
   Most of the drawings in this research are either sourced from the secondary literature or reproduced. The diagrams, maps and charts produced by the authors have been appropriately labelled. Writing is the primary format of this thesis and the drawings have been used as supportive and illustrative elements. For drought maps, we used the 'India Water Tool' of World Resource Institute (WRI) and maps in the NDMP. CWC and ISRO developed the Web Enabled Water Resource System (WRIS) which also helped in getting a preliminary visual understanding of the situation in Bundelkhand.

D. Joint Thesis:

The research for this thesis has been jointly conducted by Radhika Singh and Shail Joshi, second year masters' students at DUSP. Radhika Singh researched on the district and local level governance, whereas Shail Joshi studied the water and drought governance at the national and state level.

In Chapter 2, we will be detailing existing literature on drought response and water scarcity in Bundelkhand. Chapter 3 will focus on the response of the national and state levels, while Chapter 4 will look at the response of districts, blocks, gram panchayats, NGOs, and local-level community organizations. Then, in Chapter 5, we explore the possibility that a separate state of Bundelkhand would be able to deal with the water crisis in a more successful manner. Finally, in Chapter 6, we propose practical recommendations that might help improve water management planning in Bundelkhand.

Chapter 2: Literature Review

In this chapter, we will look at the studies that have been conducted on the situation in Bundelkhand. Most studies discuss the situation of water scarcity in the region, outline policies and packages that attempt to address it, and suggest improvements. However, few papers look at why governance in the region is difficult, leading to spotty implementation of water management efforts. The situation in Bundelkhand has worsened over the years despite the amount of attention the region has received. In this chapter, we will cover some success stories and proposed solutions to determine how people have been approaching the situation.

This thesis review is divided into four sections: the current situation in Bundelkhand regarding the water scarcity crisis and its impact on human development; national drought management practices; drought packages for Bundelkhand and their effect; and regional planning solutions to improve water management. Each section will take a chronological approach, so that the development of ideas can be seen over time.

2.1: Water Scarcity in Bundelkhand

The Centre for Rural Development and Technology (CRDT) published a paper entitled [SJ1] "Problems and Potentials of Bundelkhand with Special Reference to Water Resource Base" in 1998. It goes over the problems of Bundelkhand, including changes in rainfall patterns (extreme precipitation or no precipitation) and the effect of forest cover on soil erosion. It does not delve very deeply into issues of groundwater, and in fact suggests that a possible solution to water scarcity in the future is tapping into groundwater though this will be costly. The paper acknowledges that when the government has provided electrical subsidies for pumping water, only richer farmers profit. Meanwhile, rivers and streams, which poorer farmers depend on, dry up. It recommends that the way forward is the conservation and more efficient use of water, and warns against dams, canals and flow irrigation as these techniques would destroy soil and waste water.

A group of students and academics published an article in 2010 in the Economic and Political Weekly (EPW). The authors' individual names are not published. The article attempts to analyze the man-made factors that contributed to the water scarcity situation in Bundelkhand. The problems include: growing water intensive crops, unequal distribution of water based on class/caste/gender, lack of government functions, and neglect of traditional water systems. It harshly criticizes the government for its lack of concern, but does not provide any solutions.

Similarly, in the EPW, Himanshu Thakkar, addresses the democratic deficit in water governance in an article titled 'Challenges in Water governance: A Story of Missed Opportunities'. The author claims that the first step in improving water governance in India is the recognition of the problem by the state. Also, it discusses the paucity in data collection systems, exploitation of groundwater and environmental costs of hydro projects. He emphasizes on the need of environmental assessment of hyrdoprojects by officially appointed experts. The article is very critical of the current central government's efforts addressing water management and prescribes generic solutions like accountability, transparency and participation without a practical framework.

In 2016, NITI Aayog, the planning arm of the government, released a Human Development Report for Bundelkhand. It examines issues of drought, fragmented landholdings, feudal mind-sets, decline in water available for irrigation, low investment and low technological inputs in agriculture, and seeks to understand how these problems are impacting vulnerable groups. Regarding water, the report says that effective water management will be critical to ensure socio-economic development in the region. The report points to the importance of traditional water bodies and water councils in managing water resources, and recommends that water should be better managed at the farm level, both through watersheds and farm level water conservation and using water saving technology.

This report echoes the recommendations made in CRDT's 1998 report by suggesting that water conservation and the more efficient use of water is the way forward. While it acknowledges that governance of water resources needs to improve, it does not explicitly discuss how, at a state, district, or block level, planning has to grapple with the complex social dynamics of the ground. As is discussed in the report, caste, class, and gender often determine one's access to water. The more privileged a group is, the more it is able to control water sources. Such groups may not need to conserve water and use it more efficiently through community-level watershed planning. In fact, they might actively work against such efforts, fearing that their unlimited access to water may become more limited. Without the involvement of such privileged groups, or with them actively stopping planning efforts, how can community-level water management be carried out? Unfortunately, the NITI Aayog report does not answer this question.

Similarly, Gopal (2016) details problems that have exacerbated water scarcity in Bundelkhand, such as large dams, an extensive canal system, and drills and pumps that exploit groundwater, and recommends traditional solutions such as tanks and farm ponds. He goes into greater detail about the reasons behind the breakdown of traditional methods of water management- weak property rights relations, flawed institutional arrangements, and breakdown of local authority systems (local resource users' groups or village panchayats)- which began during colonial rule. The paper gives examples of the successful revitalization of community water management in other parts of India, but does not go into why, despite countless recommendations, this has not been done in Bundelkhand. Like all the articles in this section, this one details problems and abstract solutions, but does not delve into their actual implementation on the ground given the specific context of the region.

2.2: Existing Water and Drought Management at National and State level

The problems in Bundelkhand have been often been viewed by the government through the context of recurring drought rather than constant and worsening water scarcity. Therefore, it is important to look at how the government perceives that problem of drought and the guidelines and policies of drought management it has created.

Mathur and Jayal (1992) looked at drought management post-Independence until the 1990s. Until the 1970s, the authors say, drought was perceived as being a natural phenomenon. Drought relief was largely in the form of short-term employment schemes that did not provide lasting benefits or improve the region's ability to manage water. After the droughts of the 1970s, however, the government began acknowledging that people had some role in worsening water scarcity because of environmental degradation. It began rolling out drought mitigation programs in water-scarce

areas. However, the authors point out that the government was more concerned with "registering expenditure" and distributing funds to show that it was doing something, rather than do the harder work of developing a resource management system appropriate to areas where droughts are more frequent. State governments use "crises" to ask for more funds, which are often wasted because relief schemes are not monitored or evaluated.

This report calls to mind the book "Everyone Loves a Good Drought" by the renowned journalist P Sainath, published in 1996. In his research of poverty in rural areas of India, Sainath finds that state governments use droughts to ask for money, which can then be pocketed by government officials and society elites, rather than integrate water management into long-term development plans.

A decade later, however, there has been another paradigm shift, according to the National Disaster Management Authority's Drought Management Guidelines (2010). Rather than reactive emergency response measures, the government is beginning to focus on risk management (prevention, mitigation, and preparedness). However, these measures focus largely on top-down technological and infrastructural interventions aimed at understanding, monitoring, and declaring drought. In a 150-page document, community participation just takes up a page and a half. There is little attempt to outline how bottom-up sustainable water management aided by government funds and expertise should form the core of risk management, which numerous reports have recommended. The NIDM released new guidelines in 2016, which have the same emphasis as the 2010 document. The section on community participation is, troublingly, copied word-for-word from the earlier report. Similarly, the Disaster Management Act of 2019 report does not mention any local bodies or political units below the district level that need to be involved in the planning process.

Wilhite et al (2014) disagrees that a paradigm shift has taken place at all. The authors look at drought management worldwide, and assert that it is still largely based on crisis management and post-impact interventions based on relief measures. Rather than blame misplaced priorities of the government, the authors say that the issues lie in different definitions of drought, making it difficult to ascertain when drought is actually taking place, and the "creeping nature" of drought, which makes it harder to determine the start and end dates of a crisis. It is also complicated for the government to differentiate between exposure to drought (climatic changes) and vulnerability to drought (social factors) and determine their actions accordingly. The authors believe that national drought policies should focus more on risk reduction, drought mitigation, and preparedness plans. However, they do not discuss the different ways of approaching such policies: should they be top-down, bottom-up, or a combination of the two?

In contrast to the NIDM's guidelines that focus on top-down planning, the government bills that address management of surface and groundwater do state that participatory planning should be encouraged. Cullet and Gupta (2009) analyze the central government's "model bill" to regulate state water policies. This bill recommends that the control of water be given to the users. Uttar Pradesh's Groundwater Bill (2017), seemingly using the model bill, outlines a bottom-up strategy for block panchayats to determine their own water security plan, which would then feed into the district and state groundwater security plans. There seems to be a discrepancy between what the government says its approach is and its actual planning and implementation of drought risk reduction.

In terms of water governance overall, Neelkanth and Kapil (2017) analyze the National Water Policy – 2012 and the National Water Framework bill – 2016 to understand the existing institutional framework of water governance. They conclude that India has a good administrative framework dealing with water but the issue lies in the constitutional status of water. They prescribe inclusion of 'right to water' in the constitution and to move 'water' from the state to the union or concurrent list. However, they don't address the mechanism through which this could be operationalized. Moving water to the union or the concurrent list will further centralize the subject and make it harder to achieve devolution of power necessary for effective water management.

On the other hand, Pandit and Biswas (2019) argue that water's constitutional status is not a sufficient reason for inefficient water management. They state that neither the National Water Policy nor the state level water policies have improved the situation on ground. The issue lies in the approach of the governments in policy formulation; non-transparent process, exclusion of experts in the drafting of policies, dominance of generalist approach and no practical solutions. They term the National Water Policy as a 'feel good' document that addresses all the generic prevailing ideas internationally without contextualizing them with appropriate operational and implementable methods. The article is very critical of all three versions of NWP and concludes by proposing practical and implementable solutions to improve water governance in India such as clearly stipulating what is necessary, how it will be achieved, who exactly will do what, within what time frame, and what preceding actions are a prerequisite to do it.

2.3 Efforts to Improve Water and Drought Disaster Management in Bundelkhand at National and State level

In 2008, a multi-disciplinary inter-ministerial team published a report that recommended medium and long-term measures for mitigating droughts in Bundelkhand. It is reflective of the paradigm shift from emergency relief to risk management that the NIDM guidelines from 2010 discuss. The team recommended that Uttar Pradesh and Madhya Pradesh each receive a financial package to carry out watershed management. It goes into detail the government-led activities, such as the renovation of traditional water management structures and land shaping, that can be carried out to improve conservation and water efficiency. It does not suggest drilling borewells, building more dams and canals, or river linking. It acknowledges that organizing communities into various institutions and participatory planning is essential for long-lasting solutions. The report details various government development programs that should be converted into a coordinated process, and suggests a special purpose vehicle for implementation. More than other studies, this one acknowledges gaps in governance and suggests means for improvement.

A study by Gupta et al (2011), however, shows that these recommendations have not been taken into account. The author, who is from the National Institute of Disaster Management, goes over drought classification and management (assessment, early warning system, mitigation, relief measures as well as government agencies roles) and demonstrates that mitigation or drought proofing has only been a small part of drought response. Instead, declaring Bundelkhand under a drought is geared towards immediate assistance rather than long-term mitigation. The authors suggest that there needs to be more convergence between drought-proofing measures and ongoing government programs in the region.

In 2014, the National Institute of Disaster Management (NIDM) published a report called "Bundelkhand Drought: Retrospective Analysis and Way Forward". The report seeks to provide a holistic overview of the situation in Bundelkhand, looking at the region's history, culture, and economy, personal stories, and drought analysis. It criticizes the overuse of borewells and submersibles that began during the Green Revolution, and recommends bringing back traditional methods of community water management, such as tanks and ponds that harvest rainwater, manage water flows, and recharge groundwater. The report analyzes government schemes to improve the drought situation, and shows that they focus on building more pumps, canals, and lift irrigation systems rather than encourage community-managed water management infrastructure. However, the report does not analyze the reasons behind the government's misplaced priorities, and does not discuss how they can be changed.

The reports on Bundelkhand until now posit that the region should move from top-down planning that focuses on reactive measures to drought that are largely based on infrastructure and technology to bottom-up planning that focuses on risk reduction to drought that incorporates water management into long-term development programs and is based on community participation. However, two reports by NITI Aayog and The Energy and Resources Institute (TERI), both published in 2018, do not follow this approach. They categorize the Bundelkhand drought relief measures as being a success. They analyze "water positive" interventions such as building dams, canals, and tubewells, and say that upstream farmers are better able to irrigate their fields, have been able to shift to more water-intensive (and lucrative) crops, and have seen an increase in their incomes. This is troubling in multiple ways: why did the report only interview upstream farmers? Is it a good thing that farmers have shifted to more water intensive crops in a water scarce area? They do not talk about the long-term effect of these interventions on levels of surface and groundwater.

The recommendations of these reports include setting up a coordinating committee from different departments dealing with water resources, creating community water help groups, and conducting training for middle and lower-level officials for better water resource management. Funds should be based on monitoring and evaluation, they say, and there needs to be more sync between drought management measures and regular development programs. While these recommendations are fine, these reports do not address how existing governance and implementation can be improved. In contrast to the inter-ministerial report from 2008, these reports do not emphasize conservation and more efficient utilization of water and how it can be carried out through the involvement of communities.

Some authors have explored the possibility of the creation of a separate state of Bundelkhand, and whether this would improve regional water planning. Kumar (2010) analyzes the measures that should be considered should any region want to become a state. He recommends that the creation of states should be based on needs for improved development, decentralization and governance rather than religion, caste or language, although the latter have been the main criteria post-independence. This seems to support the idea that Bundelkhand should become a separate state, as it would potentially have better democratic governance, accountability, and responsiveness to local needs. He points out that newly created states in India often have higher growth rates than their parent states.

Verma (2011), on the other hand, states that a separate state is not the solution for Bundelkhand. While the Uttar Pradesh and Madhya Pradesh governments have largely neglected Bundelkhand, the people who have voiced support for a separate state are doing so for political purposes to further their own elite interests rather than concern for the region. A small Bundelkhand state, he says, may face boundary and river-water sharing problems with UP and MP, as well as being "politically unmanageable, economically fragile, and socially divided between the people of UP and MP". However, Verma does not discuss how the situation, if it stays as it is, could be improved and how the two states can be pushed to pay greater attention to the needs of Bundelkhand.

2.4 Efforts to Improve Water and Drought Management in Bundelkhand at the Local Level

An article by Palsaniya et al (2011) analyzes the effect of watershed management of the Garhkundar-Dabar watershed in Bundelkhand by the National Research Centre for Agroforestry (NRCA). It compares the treated area to an adjacent, untreated area of similar characteristics. Using unobtrusive, and largely sustainable methods such as check dams, gabion structures, water spreaders, and bunds, the NRCA was able to reduce run-off and increase water availability. There was a dramatic increase in surface and groundwater availability. However, this report does not go into the mechanisms of funding, management and maintenance of these interventions, which is essential to take into account if this approach were to be scaled up and applied in other areas of Bundelkhand. It also seems to have taken a top-down approach where the community had no involvement.

A success story carried out by the NGO Akhil Bhartiya Samaj Sewa Sansthan (ABSSS) was detailed in the report "Integrated Watershed Development: A Success Story from Bundelkhand" (2012). It was the culmination of eight years of involvement in a few villages in the region. Farmers (especially marginalized farmers from lower castes and women) participated in a variety of training sessions and programs that taught them how to manage water according to the specific topography, climatic conditions, and needs of the villagers. Most of the infrastructure built was non-obtrusive and sustainable, such as bunds, farm ponds, land leveling, renovation, etc., although there was a lift irrigation scheme carried out with the government. Unlike government efforts, where increased irrigation in some areas led farmers to grow more water-intensive crops, the NGO encouraged farmers to grow crops that were more beneficial for sustained water availability in the region, with an eye towards long-term access.

These two examples show that watershed management can be carried out through smaller, sustainable, and less expensive practices and infrastructure that bring together both traditional and modern planning methods. However, for such infrastructure to be maintained and managed, and be able to adapt to seasonal and climatic needs, the community needs to be involved. The government's role could be to facilitate this planning through expertise, funding, monitoring and evaluation, and linking drought mitigation to ongoing development programs. Some reports, as described above, suggest that a special purpose vehicle or coordinating cell be formed to carry out these activities.

Part of the reason for such minimal community participation in government programs until now has been the lack of decentralization in planning and management. In 'Decentralizing Water Services in India' Satyajit Singh distinguishes between decentralization and deconcentration. He

states that understanding the difference between these terms is vital in improving water governance. The article proposes decentralization through devolution of financial and management resources to the local government, thus making the participation of citizens' substantive and not merely representative. To address the issue of gender, he suggests that any decision can be vetoed by 50% of the women in the project area. He uses the example of water governance in Kerala, where water services have been decentralized successfully. The success in Kerala, the author says, is directly an outcome of building technological, financial and staff capacity of local governments.

This literature review shows that, while there have been dozens of reports written on the situation in Bundelkhand, they rarely go beyond detailing the problems. If solutions are recommended, they are usually vague, impractical, and difficult to implement given the current dynamics of the region. This thesis will go beyond this to analyze the reasons behind the gaps in government policy and action, the hurdles of implementation in such a divided, ignored, and poverty-stricken region, and whether improvements in regional planning, including whether Bundelkhand should become a state, could facilitate better water management in the region. The next chapter will discuss water governance at a national and state level.

Chapter 3: Drought and Water Governance at National and State Level

In this chapter we will be analyzing how the drought, water and groundwater administrative structures of the national and state governments attempt to address water scarcity in Bundelkhand. The aim is to dissect the role and responsibilities of various ministries, agencies and departments involved in drought mitigation and water management, understand the organizational and structural complexities of water governance and finally explore the gaps in the current bureaucratic system.

We view the recurring water scarcity issues in Bundelkhand as a direct result of ineffective governance. Exclusion of key stakeholders, top-down planning, the lack of decentralization at state level and superficial policies are some of the key issues discussed in the chapter. We will look at the policies relating to drought and water and then analyze the existing organizational framework dealing with drought and water in India.

3.1 Overview of Water and Drought Governance

Governance of drought and water comprises three main categories: law, policy and administration. 'Practice' is also a form of governance which will be covered in the subsequent chapters. Out of

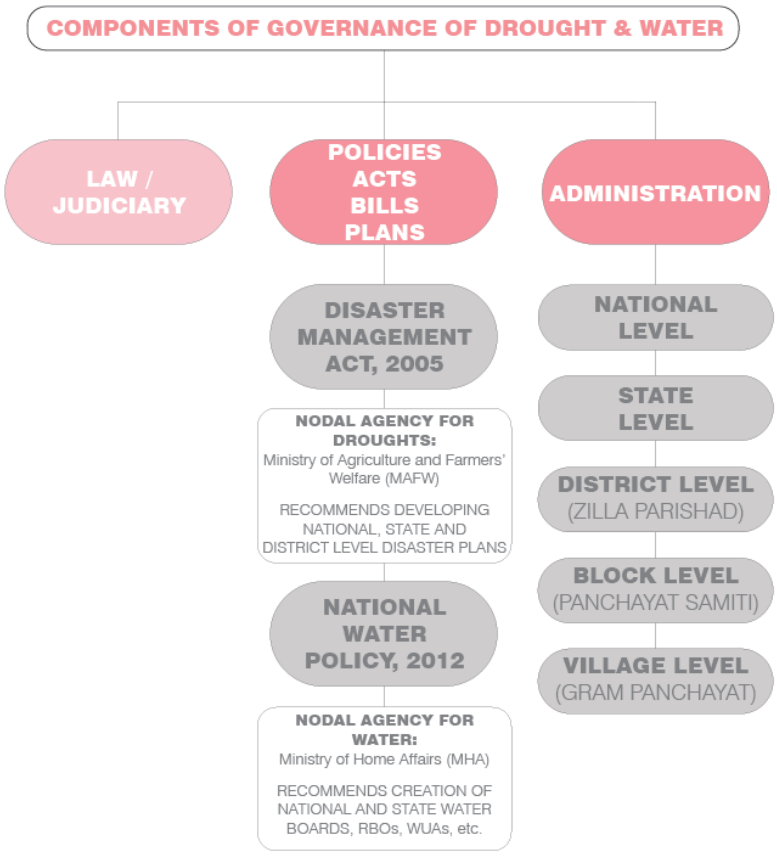


Diagram 2: Categories of Governance at the National and State Level

these three aspects of governance, this research looks at the latter two; policy and administration. In policy, the Disaster Management Act of 2005 and the National Water Policy (NWP) of 2012 will be studied. In 2005, the central government passed the Disaster Management Act that addressed disasters through a holistic approach consisting of setting up disaster related institutions right from the local to the central level. Based on the act, the national policy on Disaster Management (DM Act, 2005) was formulated in 2005 and later the National Disaster Management Plan (NDMP), which is revised every year.

The plan specifies that for every disaster a nodal ministry and agency should be notified to develop detailed disaster specific master plans. The Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW) under the Ministry of Agriculture and Farmers' Welfare (MAFW) has been appointed as the nodal agency to formulate policies, plans and mechanisms to mitigate drought across the country. It is important to note that the administrative structures dealing with water and drought have some overlaps but are largely managed by different agencies.

Similarly, NWP 2012 prescribes the National Water Board (NWB) to prepare an action plan and the states should adopt their own plans based on the NWP. It is interesting to note that in the complete policy barring a few times, no particular organization has been designated roles and responsibilities. Only NWB, RBOs and WUAs have been recommended. This is unlike the NDMP which, even though excludes many stakeholders, does mention roles and responsibilities of various government agencies. However, the NWP, does take an important step towards decentralizing services to the state, district and river-basin level.

It proposed creation of River Basin organizations (RBOs) and Water User Associations (WUAs), to increase the participation of district and local level communities in the water management process. The RBOs are basin level entities that are supposed to manage water and the WUAs are meant to improve the quality and coverage of irrigation through a participatory process involving local communities. WUAs have met with mixed success but the RBOs have been a complete failure. Apart from the many reasons discussed in the following chapters, one common reason for both these decentralized units to fail is the top-down approach in which they have been planned. Even though they are meant to improve local water conditions through local governance, due to inter-state play and conflict with the interests of the state, RBOs have been inefficient organizations.

Consequently, if we look at projected scenarios of availability of water resources by 2050, 30% of the geographical area and 16% of the population will be facing water scarcity (Bhatt and Bhatt, 2018). Such projections demand development of coherent coordination between government agencies managing drought and water at the national and the state level, if water is to be made available to everyone for domestic and irrigation needs. But the current water governance system is very complex, which leads to delays in response time and dissipation of information and relief measures. (Wilhite et al., 2014). It would also delay information gathering, live monitoring and declaration of drought.

There are more than 70 agencies responsible to manage drought, more than 30 different agencies dealing with water and several agencies dealing with groundwater management and protection at the national and state level. There are many overlaps in the roles, responsibilities and mandates of

various agencies but that makes it more cumbersome to coordinate and manage all the agencies. It is important to study the policies relating to drought and water to get a complete understanding of these governance structures. The chapter is divided into two main sections; one looking at drought disaster governance and the other looking at water governance.

3.2 Drought and Disaster Governance

The Disaster Management Act of 2005 was an important milestone in improving the legal and institutional framework for managing disasters in India. This was the first law of its kind in India. It was a paradigm shift in the government's attitude towards managing disasters by initiating a nationwide policy. Such paradigm shifts in the attitude of large governmental structures seldom occur in isolation. Most of the time they are a reaction to the current events internationally or nationally. It's a measure to remain relevant, be a global participant and in turn address the pressing issues at home. This act is no exception to that norm. It is possible to trace the ideas in this act to certain specific events internationally and within India.

3.2.1 History of Disaster Management Act, 2005

The 1990s was declared as the International Decade of Natural Disaster Reduction (IDNDR) by the United Nations (International Decade for Natural Disaster Reduction – Addendum, 1999). This decade pushed for a holistic approach towards mitigating, managing and reducing disasters. This was a first push internationally for all nations to adopt a new framework that understands as well as acknowledged the interdependence of the water, energy, food, infrastructure and climate sectors. The Yokohama Strategy and Plan for Action for a Safer World, 1994 and the Hyogo Framework for Action, 2005-2015: Building resilience of Nations and Communities to Disasters (Jones et al., 2014), 2005, provided more impetus to this cause.

Nationally, India had been dealing with some major disaster events and struggling to cope with the response and recovery. The 1999 Odisha cyclone, 2001 Gujarat Earthquake and 2004 Tsunami on the eastern coast, one could say were the triggering points in succession International Decade for Natural Disaster Reduction – Addendum, 1999). Disaster management isn't mentioned in the Constitution as an issue under the jurisdiction of the central government. However, in the aftermath of the 2004 Tsunami, the Government of India decided to enact a central law on disaster management. This was due to the fact that till 2005, there existed no act addressing disasters nationally and applicable to all states. By 2005, there was a realization amongst the leadership at the central level of the need for a policy cross cutting various sectoral issues.

3.2.2 Components of Disaster Management Act, 2005

The DM Act holds every agency and ministry responsible for drought management thus acknowledging that drought isn't just a climatic aberration. This statutory responsibility mandates every agency/ department/ ministry to make financial and human resource arrangements, as well as produce necessary reports pertaining to their sector to the National Disaster Management Authority (NDMA). However, this makes the task of managing drought very complicated. It would

mean involvement of a plethora of agencies at the national and the state level each with their own ideas, strategies pertaining to their sector. It leads to overlapping roles and responsibilities of many agencies which is bound to create confusion and make the process extremely slow and cumbersome.

The act provides for disaster management plans at the national, state and district levels. At each level the act designates a particular ministry in charge of the plan development. However, the National Disaster Management Plan (NDMP) will be the foundation plan on whose principles the state and district plans (SDMP and DDMP respectively) must be molded. While developing these plans it is important to realize that this could be a massive management nightmare if coordination mechanisms aren't put in place. The act provides for decentralization at the state level, where the central government is responsible for monetary assistance and goal setting (Government of India, 2005). The governance mechanism also needs to make sure that the plans are regularly updated and operational.

The NDMP explains the existing situation with drought, parameters for assessing, monitoring and declaring drought, delineates various stakeholders and their roles and responsibilities. The plan extensively talks about all the agencies involved at the national and state level in drought governance, with agencies at each level responsible for one or more categories. However, the problem lies with the governance framework itself prescribed in these policies, which needs to be investigated and reformed. The framework prescribed is very complex which involves more than 70 different ministries, departments and agencies making the task of intra-governmental coordination inefficient. To further complicate matters, drought doesn't have a single definition nationally or internationally which makes it difficult for policy makers to determine a drought prone area easily. Also, unlike other disasters, drought is a slow disaster that changes its area coverage over time and is always in flux. Hence many researchers and policy makers disagree on the start or end to a drought (Wilhite et al., 2014).

Every disaster has a specific onset time and can be either a sudden event or a progressive one that creeps in slowly. Drought is a classic example of a creeping or progressive disaster. It is very difficult to notify the occurrence of a creeping disaster, unless the monitoring and reporting systems have the necessary capacity(National Disaster Management Authority, 2019). The DM act does not provide for regions like Bundelkhand to be officially declared disaster prone which further complicates the matters. This inevitably makes the recommendations generic and not specific to severe drought prone regions such as Bundelkhand.

The act solely holds the governments responsible for managing droughts and their actions can only be challenged in the supreme or high courts, which is another example of exclusion of community knowledge and expertise. It disproportionately distributes power in the hands of the center which in a country like India, leads to many forms of discrimination based on religion, caste and gender.

Drought also affects the public health significantly. The Center for Disease Control and Prevention (CDC), states that 'The health implications of drought are numerous and far reaching. Some drought-related health effects are experienced in the short-term and can be directly observed and measured. However, the slow rise or chronic nature of drought can result in longer term, indirect

health implications that are not always easy to anticipate or monitor' (Center for Disease Control and Prevention- CDC, 2019). Unfortunately, the sector of public health doesn't find a place in this act (Sarkar and Sarma, 2006).

NATIONAL LEVEL AGENCIES, MINISTRIES AND DEPARTMENTS

THEMES OF DISASTER RISK REDUCTION	UNDERSTANDING RISK							INTER-AGENCY COORDINATION					INVESTING IN DRR-STRUCTURAL MEASURES				INVESTING IN DRR-NON-STRUCTURAL MEASURES					CAPACITY DEVELOPMENT							CLIMATE CHANGE RISK MANAGEMENT			
AGENCIES/ ORGANIZAIONS/ MINISTRIES	Vulnerability Maps	Assessment, monitoring, forecasting, early warning	Drought Declaration	Hazard Risk Vulnerability and Capacity Assessment	Research	Disaster Data Collection and Management	Total number of agiences involved: 36	Overall Disaster Governance	Response	Warnings, Information, Data Management	Non-Structural Measures	Total number of agiences involved: 8	Storage Facilities	Water Conservation Structures	Social Housing Schemes	Total number of agiences involved: 4	Mitigation Measures	Promote Water Conservation, Harvesting, Efficient Irrigation and Afforestation	Agricultural credit, agricultural inputs finance, marketing, crop insurance	Risk Transfer	Total number of agiences involved: 11	Training and capacity building	Curriculum development	Awareness generation	Empowering Women, marginalized communities and disabled persons.	Drought management in development plans	Mainstreaming drought management in development plans	Total number of agiences involved: 13	Research, forecasting, data management, zoning, mapping.	Hazard Risk Vulnerability and capacity Assessment	Climate Change adaptation	Total number of agiences involved: 9
MNCFC: Mahalanobis National Crop Forecast Centre	1																															
MAFW: Ministry of Agriculture and Farmers Welfare	1	1	1	1	1	1		1	1	1	1		1	1			1	1	1	1		1	1			1			1	1	1	
DOS: Department of Space	1	1	1	1	1	1				1								1											1		1	
MOES: Ministry of Earth Sciences	1	1	1	1	1	1				1	1		1				1												1		1	
MOJS: Ministry of Jal Shakti	1	1		1	1	1				1	1		1	1			1												1	1		
MOST: Ministry of Science and Technology	1	1		1	1	1				1																				1	1	
MSJE: Ministry of Social Justice and Empowerment				1																												
NRAA: National Rainfed Area Authority					1	1																										
CRIDA: Central Research Institute for Dryland Agriculture					1	1																										
CSIR: Council of Scientific and Industrial Research					1	1																										
MOSPI: Ministry of Statistics and Programme Implementation						1																										
MEITY: Ministry of Electronics and Information Technology						1																										
NDMA: National disaster Management Authority						1				1																				1		
NIDM: National Institute for Disaster Management					1	1				1	1									1										1		
NITI Aayog: National Institution for Transforming India			1			1												1				1		1	1							
MORD: Ministry of Rural Development						1							1	1	1																	
MHUA: Ministry of Housing and Urban Affairs						1									1																	
ICAR: Indian Council of Agricultural Research						1												1	1													
NABARD: National Bank for Agriculture and Rural Development						1													1													
MFIN: Ministry of Finance						1														1												
MANAGE: National Institute of Agricultural Extension Management						1																1										
NDRF: National Disaster Response Force						1																1		1								
NIRD: National Institute of Rural Development						1																1										
DMC: Drought Monitoring Cell						1																1										
MYAS: Ministry of Youth Affairs and Sports						1																1										
CBSE: Central Board of Secondary Education						1																	1									
MWCD: Ministry of Women and Child Development						1																			1							
MSJE: Ministry of Social Justice and Empowerment						1																			1							
MOEFCC: Ministry of Environment, Forest and Climate Change						1																								1		1
NLRTI: National-Level Research and Technical Institutions						1																								1	1	
IMD: Indian Meteriological Department					1	1																										
MHA: Ministry of Home Affairs						1					1									1												
BIS: Bureau of Indian Standards						1					1																					
IRDA: Insurance Regulatory and Development Authority						1													1													
MHRD: Ministry of Human Resource Development						1																	1									
NCERT:National Council of Educational Research and Training						1																	1									
TOTAL	6	5	4	6	10	35		1	1	7	6		3	3	2		3	4	4	4		7	4	3	4	1			6	6	6	

STATE LEVEL AGENCIES, MINISTRIES AND DEPARTMENTS

DMD: Disaster Management Department	1	1	1	1	1	1		1	1	1	1		1	1	1		1	1		1			1	1	1	1		1	1	1		
SDMA: State Disaster Management Authority	1	1	1	1	1	1		1	1	1	1		1	1	1		1	1		1		1	1	1	1	1		1	1	1		
RD: Revenue Department	1	1	1	1		1		1	1	1	1		1	1	1		1	1					1	1	1	1		1	1	1		
SDMC: State Drought Monitoring Cell	1	1	1	1		1				1												1		1	1	1		1				
DDMA: District Disaster Management Authority	1	1	1	1	1	1		1	1	1	1		1		1		1	1	1			1		1	1	1		1	1		1	
SAUs: State Agricultural University	1	1	1	1	1	1											1	1	1				1	1	1	1		1				
AGD: Agriculture Department			1	1		1		1		1				1	1		1	1	1						1	1		1	1	1		
IRD: Irrigation Department			1			1				1				1	1		1	1							1	1		1	1			
WSD: Water and Sanitation Department						1																										
DSJE: Social Justice and Empowerment Department				1		1																			1					1		
PRD: Panchayati Raj Department (Block and Village levels)				1		1		1	1	1	1			1	1		1	1				1		1	1	1		1			1	
ULBs: Urban Local Bodies (municipal corporations, munsipalities, nagarpalikas)				1		1		1	1	1	1			1	1		1	1				1		1	1	1		1			1	
NRAA: National Rainfed Area Authority					1	1																										
CRIDA: Central Research Institute for Dryland Agriculture					1	1																										
DRD: Department of Rural Development						1		1						1	1		1	1							1	1		1				
PRD: Panchayati Raj Department						1		1						1	1		1	1							1	1		1				
WRD:						1				1				1	1		1	1											1			
Forest Deptt:						1							1																			
AHD: Animal Husbandry Department						1								1	1		1	1							1	1		1				
EFD: Forest and Environment Department						1											1	1							1	1			1			
Rural Banks						1													1													
State Rural Coop. Banks						1													1													
NABARD: National Bank for Agriculture and Rural Development						1													1													
SLBC: State Level Bankers' Committee						1													1													
ATI: Administrative Training Institute						1																1										
SDMI: State Institute of Disaster Management						1																1										
SLRTI: State Level Research and Technical Institutions						1																1							1	1		
SDRF: State Disaster Response Force						1																1										
EDD: Education Department						1																	1									
IPRD: Information and Public Relations Department						1																			1							
DMC: Disaster Management cell						1																										
DFIN: Finance Department						1														1												
DAG:						1														1												
SRD: State Institute of Rural Development						1																1										
SBSE: State Board of Secondary Education						1																	1							1		
TOTAL	6	6	8	8	5	35		9	6	10	6		5	9	11		13	13	7	4		10	4	8	15	14	12		10	7	7	
NET TOTAL	12 out of 71	11 out of 71	12 out of 71	14 out of 71	15 out of 71	70 out of 71	71 out of 71	10 out of 71	7 out of 71	17 out of 71	12 out of 71	18 out of 71	8 out of 71	12 out of 71	13 out of 71	16 out of 71	16 out of 71	17 out of 71	11 out of 71	8 out of 71	32 out of 71	17 out of 71	8 out of 71	11 out of 71	19 out of 71	15 out of 71	12 out of 71	37 out of 71	16 out of 71	13 out of 71	13 out of 73	22 out of 71	

3.2.3 National Level Drought Disaster Planning

According to the DM Act, every sector/theme is supposed to be assigned a nodal agency at the central and state level. At the state level the Disaster Management Department (DMD) is the nodal agency for almost every subtheme, but that's not the case at the national level. Only a few sub themes have been assigned nodal agencies, as it is assumed the work will be coordinated by the MHA and MAFW (National Disaster Management Authority, 2019). There are many overlaps within and across themes which surely makes the coordination task cumbersome, leading to delayed implementation of various programs.

It is interesting to understand on what basis were the specific agencies chosen or not for a particular role. For example, NIDM is involved in data collection (Understanding Risk sub theme) and data management (Climate Change sub theme) but is not involved in making vulnerability maps, monitoring, forecasting (Understanding Risk sub theme) sub theme or curriculum development, Climate Change Adaptation (Climate Change sub theme). Is this to say that India's foremost disaster management agency has no role to play in influencing disaster curriculum or setting up standards for climate change adaptation? On an average there are 5 agencies per sub theme at the national level and about 9 on the state level.

Given that there are so many agencies, that would require some serious coordination work, which is why there is a theme dedicated to inter agency coordination. Here the NIDM has clearly faltered by assigning more than one agency for the inter agency coordination per sub theme. It just increases the task as, who will coordinate between the multiple agencies responsible for the intern agency coordination? Also, no particular agency has been notified as the nodal agency for any theme at the national level. At the state level the situation is more complicated as 10 out of 36 agencies are involved in inter agency coordination.

There is no specific section or description on coordination between the center and state. Unfortunately, neither the NDMP nor the NIDM mention the exact procedure to be followed for center-state coordination. Also many projects/ schemes are funded by the center but water is a state subject, so who takes the charge while such a coordination project is underway.

3.2.4 State Level Drought Disaster Planning

NDMP mandates each state to develop their own state level disaster management plans individually, based on the framework and vision provided by the center. Madhya Pradesh and Uttar Pradesh have set up their own state disaster management authorities (SDMA), who have prepared state level plans. Both plans have many similarities with their prescribed governance structures. Both provide for a top-down bureaucratic structure at the planning level and talk about district level authorities only with respect to implementation. This is bound to disconnect the planners from the realities on ground.

Given that both the SDMPs prepared by MP and UP state governments have similarities, this section will describe the common governance structures and issues. Both SDMPs put the chief

minister (CM) as the head of SDMA, followed in succession by the chief secretary, a nodal officer and the structure further bifurcates into 7 other departments. The executive branch is the State Executive Committee (SEC) headed by the chief secretary. Just like the NDMP, the SDMA suffer with the same set of issues. Appointing the CM and chief secretary as the head of SDMA and SEC respectively is bound to make the them ineffective, even though they have the authority to demand action, due to their time constraints and commitment to other important tasks. Also, the other members of the SEC are chief secretaries from other departments which adds to the problem.

The state will appoint a nodal officer to 7 departments and will report to the chief secretary. The 7 departments are: Administrative, Operation & Coordination, IEC & Media, Training & Capacity building, Research & Policy Development, Finance planning & Coordination, and International Coordination Divisions. It is not pragmatic to assign one person as the incharge of practically all implementing agendas. This gives him/her a lot of power over drought management and politics is bound to creep in, given that the chief minister is his boss.

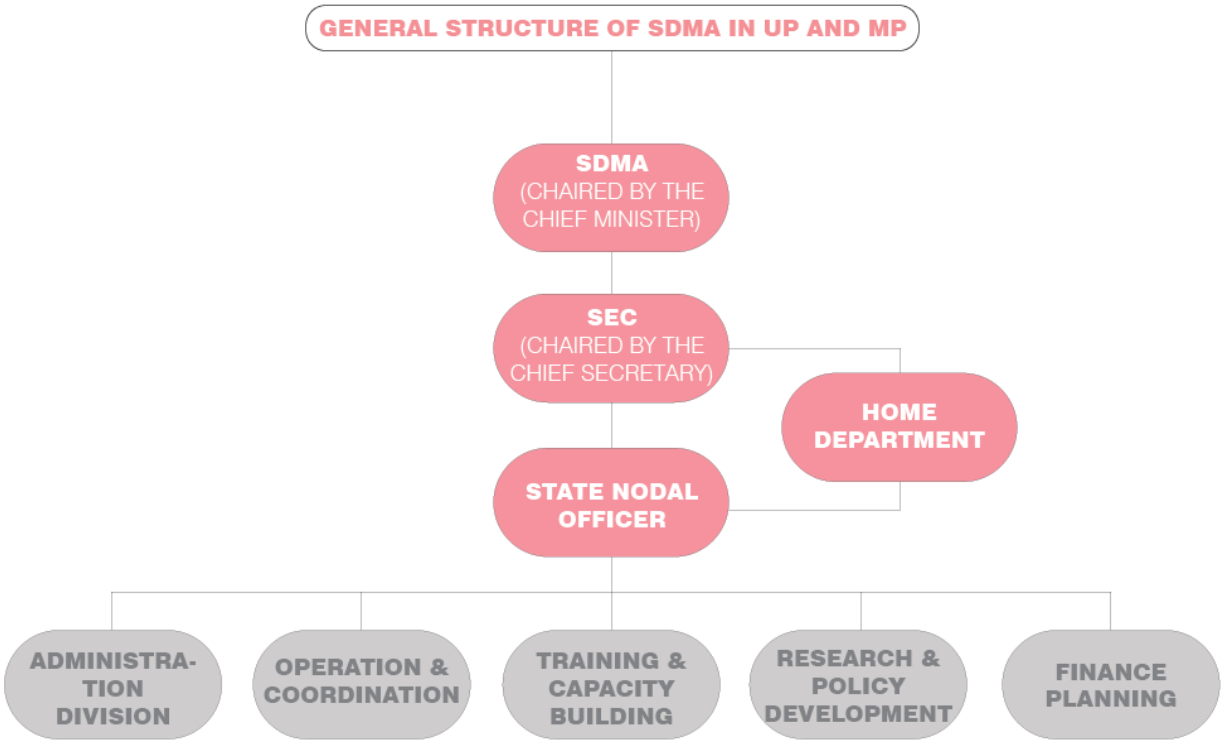


Diagram 3: General Organizational Structure of State level Disaster Authority

The state authorities consist of member not more than 9 from other ministries. What is puzzling here is that the SDMA and SEC both contain representatives of all ministries except the water or irrigation departments. Why have the authorities excluded the one ministry/department that is directly connected to drought? This is another example, of the governments approach towards drought and water. They treat both entities independently, without realizing the direct connections between the two.

Also, it excludes involvement of any district authorities in any of the planning committees. The mention of district authorities comes at the end of governance chapter, with only a paragraph dedicated to the role of districts. The District Disaster Management Officer is the nodal officer responsible to implement all plans prescribed in the SDMP. (S)he will report to the district collector. It is good that a special officer is assigned for district level disaster management, thus reducing the burden on the district collector. But the given that (s)he is answerable to the collector reduces his/her decision making power and further isolates the state level authorities from the local issues. It's possible that the higher level authorities realize it but do not want to set these powerful organizations in a potential opposition.

3.2.5 Financial Planning for Drought Disaster

NDMP and SDMP extensively discusses the role of mainstreaming disaster response and relief (DRR) through decentralization and capacity building. Hence, instead of implementing this approach through only one agency with a single budget, it expects all central and state level ministries and agencies to allocate a portion of their annual budgets for decentralization and capacity building. For immediate relief, funds are limited to the Disaster Response Fund (DRF) at national and state level. States are mandated to respond to disasters, and financial assistance from the center is available on receiving formal requests from the states. The plan states that these funds must be used to build capacity at the state and district levels (National Disaster Management Authority, 2019). There is no discussion on funds dedicated for the district or gram panchayat.

There are several issues here that need to be addressed. First, even though the plan talks about decentralization and capacity building, it still prescribes that all the finances be controlled by the center and states. In fact, this is deconcentration of power and another form of centralization, where the districts have to only implement the measures indicated by the state government and are answerable to them. Second, the plan describes the use of disaster funds for capacity building. There are 4 categories in capacity building such as setting up emergency operating centers, training various stakeholders, preparing disaster management plans and strengthening disaster management authorities. The district level disaster management authority finds mention only in the last category. This is a clear indication the central government views disaster management as a state prerogative and hence decentralization of funds stops at the state level. Without devolution of financial power to the districts, true decentralization cannot be achieved.

3.3 Water Governance

The primary agencies dealing with drought and water management are different and this is a management and coordination problem. The Ministry of Jal Shakti (MOJS) is the nodal agency for water management whereas the ministry of Home Affairs (MHA) and Ministry of Agriculture and Farmers Welfare (MAFW) are responsible for drought management in India. This points at the institutional fragmentation prevailing at the national and state level. This act was a much needed reform in the context of disaster management in India but it needs many amendments to allow efficient management of drought. It has proved to be more disastrous seeing the situation in Bundelkhand, which is far from improving even 15 years after the act was implemented. Drought

management cannot work in isolation. Water management becomes of utmost importance in dealing with severe droughts. Hence in order to understand the reasons behind the recurring drought in Bundelkhand, it becomes important to study water as well as drought governance in India.

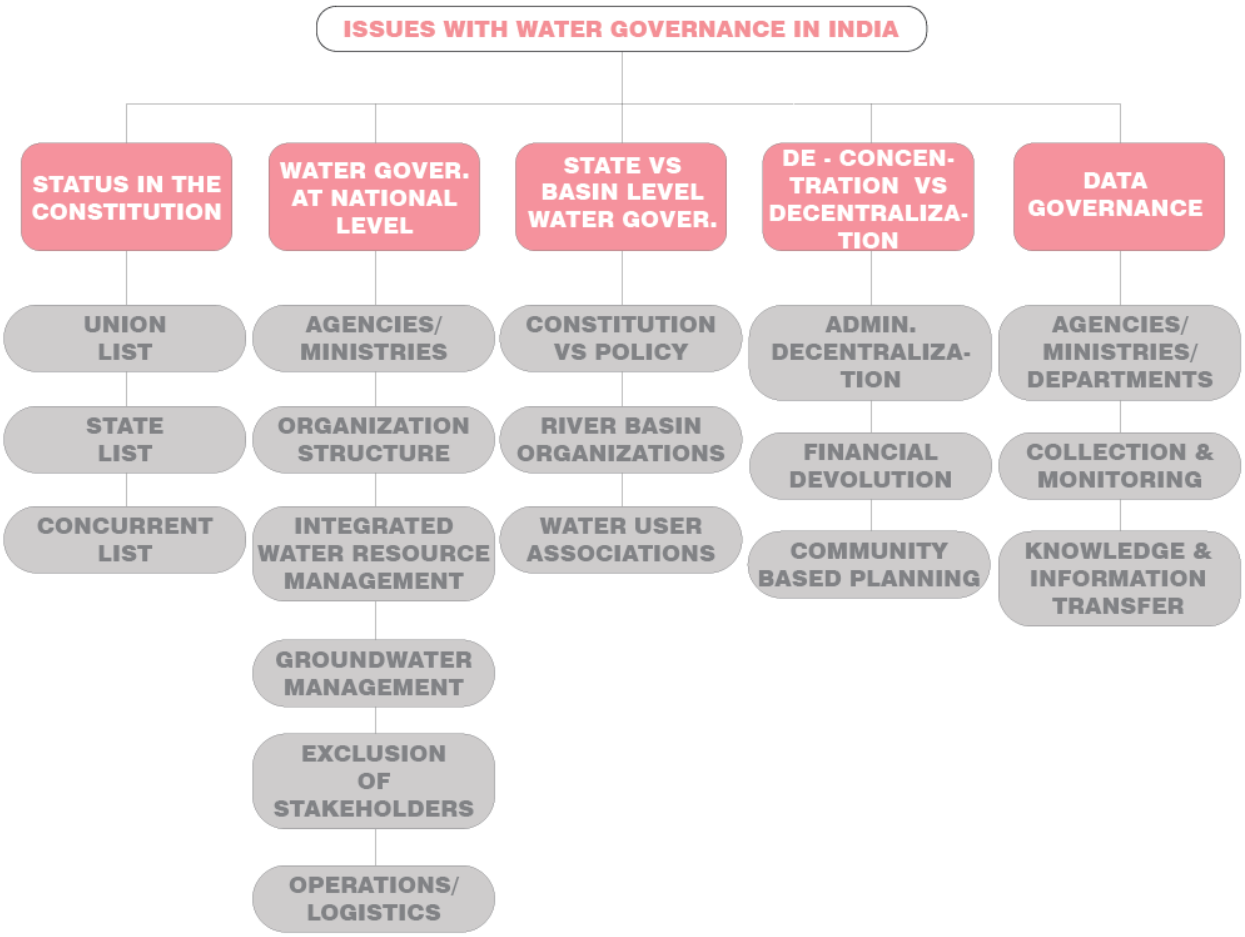


Diagram 4: Primary Issues with Water Governance in India at the National and State Level

3.3.1 Constitutional Status of Water

Water is not a fundamental right according to the constitution but the supreme and high courts have interpreted the article 21 of the constitution- The right to life, as encompassing the right to safe and secured water. According to the constitution of India, water is a state subject and hence needs to be managed by the state. Water is the 17th entry of List II of the 7th schedule. This entry in the State list defines what encompasses 'water' as follows, 'Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power.' India passed the National Water Policy (NWP1) in 1998 with amendment in 2002. Currently, India has the National Water Policy (NWP2) of 2012 and the National Water Framework Bill (NWFB) of 2016 as the main legislations relating to water. These new policies aim at achieving Integrated Water Resource Management (IWRM) across the country, through decentralization of responsibilities at the state level.

There have been many debates surrounding the appropriate place for water in the constitution. Four major commissions set up over the years to debate the right place for water in the constitutional lists, namely, The Sarkaria Commission in 1983, National Commission on Integrated Water Resources Development in 1996, Punchhi Commission in 2007 and finally the Chawla Committee in 2011. Every single one of these committees have upheld that water is a state subject, and the center plays a vital role in forming national level frameworks and providing guidance to the states (Haque et al., 2019).

This debate will keep continuing and hence it is necessary for the water experts in the government, NGOs, private sector to move beyond this argument but rather find practical and innovative solutions within the existing frameworks. Even if we consider that water is moved to the union list, it doesn't simplify the issues but rather could make it more complex as it would further reduce the role of local communities and district level authorities in drought and water planning procedures and exacerbate existing top down decision making structures.

3.3.2 Water Management at the National Level

The National Water Policy provides for the institutional framework required to manage water. At the National level there are 16 different agencies/ departments/ ministries that deal with water, assisted by 18 other independent boards. In general, at the state level there are about 10 agencies/ departments/ ministries in charge of dealing with water within the state boundaries. Drought governance is dictated by the Disaster Management act of 2005, the water resource management is under the jurisdiction of NWP 2012, whereas groundwater management is governed by the Groundwater bill of 2017. This is, one could say, the fundamental flaw in the governance structure of water resources. To address this issue, the current administration did make a significant change by including all the water and groundwater related departments/ agencies under the ministry of Jal Shakti. This consolidation is a clear move to centralize and streamline water management but it did not include any agency dealing with drought. Again, the government views drought and water management as separate issues and consequences even for chronic drought prone regions like Bundelkhand can be disastrous.

The Jal Shakti ministry is the nodal ministry managing water at the National Level which is supported by the Central Water Commission (CWC), Central Groundwater Board (CGB) and the National Water Development Agency (NWDA) for technical and research purposes. The National Water Resource Council (NWRC) is the primary policy body headed by the Prime Minister and supported by its executive branch – the National Water Board (NWB). The fact that the government chose to place the PM as the head of one the main decision making bodies, points at their preference for a highly centralized process. Apparently, the NWRC meets only to adopt the NWP, which is approximately for one day once every decade (Pandit and Biswas, 2019; Government of India, "National Water Policy 2012"). NITI Aayog is the planning department responsible for the approval and allocation of finances for all water projects. Further there are around 18 different individual boards tasked with managing of certain rivers, irrigation projects. There are some state, district and gram panchayat level entities also listed with roles of managing water. But they are placed under the independent boards category, without much involvement in the national planning process.

The structure described above is very complex and raises many unanswered questions. First, which is the primary agency mandated with developing a national level water action plan? Is it the ministry of Jal Shakti? If yes, then its mandate conflicts with the mandate of the National Water Council (NWC). Also they are headed by two different people. Second, if NITI Aayog is erstwhile planning commission of India, why isn't it the apex body determining the water planning of the nation? Why has its role been concentrated only to the financial approvals and allocation? It could

Name of Agency	Role(s) of Agency
Ministry of Water Resources, River Development, and Ganga Rejuvenation	Is a nodal central level ministry. It is in charge of overall planning and administration of water assets in the nation.
Central Water Commission	Provides overall technical support to the ministry
Central Groundwater Board	
National Water Development Agency	
Central Water and Power Research Station	Provides research and training support to the ministry
Central Soil and Materials Research Station	
National Institute of Hydrology	
NERIWALM North Eastern Regional Institute for Water and Land Management	Capacity building institution for water and land management for irrigation and agriculture development
WAPCOS	Provides consultancy services in all facets of water resources, power and infrastructure sectors
Niti Aayog erstwhile Planning Commission of India	Grants project clearance and allows and authorizes the financial allocation to various water projects within the country
Irrigation Department under the Ministry of Agriculture	Influences the water sector through Ministry of Water Resources, River Development and Ganga Rejuvenation
Pollution Control Boards under the Ministry of Environment and Forest	
Ministry of Housing and Urban Development	
Ministry of Drinking Water and Sanitation (established in 2010-formerly under Ministry of Rural Development)	Is the nodal department for the overall policy, planning, funding and coordination of programmes of drinking water and sanitation in the country
National Water Resources Council	Is the apex policy organ which is chaired by Prime Minister and includes Union Minister of Water Resources, Chief Ministers, and Governors of all states and Union Territories
National Water Board	Is the executive arm of National Water Resources Council which is chaired by union Secretary of Water Resources and the chief secretaries and top bureaucrats of the states and Union Territories
Independent Board(s)	
Bansagar Control Board	For the smooth execution, operation and management of respective project and work as conflict resolving agency for interstate water conflicts among the states
Betwa River Board	
Brahmaputra Board	
Farakka Barrage Project	
Narmada Control Authority	
Sardar Sarovar Construction Advisory Committee	
Tungabhadra Board	
Upper Yamuna River Board	
Water Resources Department	Overall policy, planning, funding and coordination of water resources at state level
Water and Land Management Institutes	Capacity building, Research and Development and Training at state level for water and land management
Agricultural Universities	
Water Authorities and State Water Boards	For the effective regulation and monitoring of water resources at state levels
Water Supply and Sewerage Board	Caters to public the water, waste water, solid waste management and storm water management services within the state
Municipality/ Nagar Palika	
Gram Panchayat	
State Pollution Control Board	Have the responsibility of water quality aspects
Irrigation Department	Regulates operates and manages the provisions of irrigation within the state and Construction, maintenance, and management of water resources projects and schemes
Public Works Department	Construction, maintenance, and management of allied projects and schemes

Table 1: Administration of water at the National level

Source: An Analysis of Water Governance in India: Problems and Remedies

possibly be because water resources are an important tool for political play, and the minister would hesitate from reducing its control over them. Third, given that the NWP 2012, has explicitly

mentioned adoption of Integrated Water Resource Management (IWRM), why is there no mention of a coordination and information sharing mechanism between all the 34 ministries and independent boards? Is the assumption that the nodal ministry will be the coordination agency? This is not mentioned explicitly anywhere, which makes the coordination and information sharing process arbitrary and at the behest of the water ministers. How can IWRM be successful when the mechanism to achieve integration are set in a complex web of power structures, with the political heads making decisions?

Lastly, the policy mentions many times about capacity building and involvement of district and local level authorities. However, when the roles are assigned they find their names mentioned at the end of the list with the role of implementing plans and catering to the public's water needs. How can an agency cater the public needs without being involved in the planning process? Their role seems to be similar to contractors, who only implement the agendas prepared by the designer and the client without any questions asked. Also, the role of private players and non-governmental organizations remains to be discovered as the current systems aim at maintaining the political status quo and control over water resource management. Exclusion of such key players from the planning and implementation process has also added to the miseries of drought prone regions such as Bundelkhand. Without the participation of the communities, how can India achieve the goal of integrated water resource management (IWRM).

Since the 90s the overall development world has embraced integrated water resource management as a way to make our cities and rural landscapes sustainable (Benson et al.). Even though many scholars have questioned the authenticity and practicality of this approach, the NWP adopted the IWRM approach. However, the current government's focus seems to have shifted away from Integrated Watershed Management to expanding irrigation based on groundwater extraction and river basin linking. We can see that from the decrease in funding by the central government for watershed management schemes in the last decade. Inevitably, the responsibility to fill the gap in funding has fallen on the individual states, who are starved for cash. As a result, the overall expenditure of the governments on IWRM has declined significantly (Johari and Subramanian, 2019).

To address the issues with water governance in India, the GOI set up the Shah committee in 2016 mandated with recommending necessary changes with water administration for effective and timely implementation of various policies. One of the primary responsibilities of this committee was to suggest restructuring of the Central Water Commission (CWC), Central Groundwater Board (CGB), Central Ground Water Authority (CGWA) and Central Pollution Control Board (CPCB) among others. Most of these institutions have different evolutionary histories but one aspect common to all is typical top-down bureaucratic approach, accountable upwards, non-transparency and not inclined towards participatory planning (Thakkar, 2019). Many of these institutions have overlapping roles and conflict of interests with its various functions. There is a democratic deficit in water governance in India. Reforms have been carried out since the 1990s, to improve the water governance in India. But most of these reforms have been carried out in bits and pieces with low to moderate effect on ground. Also, many of the reforms have been very slow in nature. Similar is the case with the state governments.

3.3.3 Groundwater Governance

The water crisis is further bolstered as India is a large consumer and extractor of groundwater. Some estimates suggest India uses 230 km^3 of groundwater annually, fulfilling more than 60% agricultural, irrigation and 85% drinking water needs in the whole country. New pump technologies, subsidies in electricity, flexibility in operational use and less responsive and available provisions of public water systems, are the primary causes of heavy reliance on groundwater as the main source of water for domestic and agricultural use. According to an article published on Global Water Forum, more than 60% of the groundwater resources will be under critical category in the next decade (Wyrwoll, 2012). Just like drought, mismanagement of groundwater due to weak governance has led to this dire situation. A 2006 UN report on water management in India, recommends enhancing involvement of local communities in data collection and monitoring of water systems as a measure to fill gaps in water management.

Groundwater in the Indian legal system is entangled in a multilayered complex legislation at the central and state level. One of the questions with groundwater is with respect to its ownership. The

Institutions	Role in Groundwater Management
National Level Institutions	
Central Ground Water Authority	Established in 1997, following Supreme Court orders, mainly to regulate, control, manage, and develop groundwater resources in the whole country and support States
Central Ground Water Board	Established in 1950 for dedicated groundwater research and monitoring, to support overall planning for development of groundwater resources in the country, and to provide support to States
Central Pollution Control Board	Norm setting on industries' water use and wastewater discharge
Ministry of Water Resources, RD&GR (MoWR, RD&GR)	Responsible for laying down policy guidelines and Programs for the development and regulation of country's water resources.
Ministry of Drinking Water and Sanitation (MDWS)	Nodal department for the overall policy, planning, funding and coordination of Programmes of drinking water and sanitation in the country.
Ministry of Rural Development (MoRD)	Operates the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) which provides employment, notably through the construction of local water-related structures. The GP Development Plan (GPDP) are to have a clear component addressing vulnerabilities of poor and marginalised people and their livelihood opportunities through an integrated poverty reduction plan that converges with the labour budgeting and exercises under MGNREGS.
Ministry of Urban Development (MoUD)	The apex authority of Government of India at the national level to formulate policies, sponsor and support Programme, coordinate the activities of various Central Ministries, State Governments and other nodal authorities and monitor the Programmes concerning all the issues of urban development in the country.
Ministry of Agriculture & Farmers Welfare	Responsible for laying down policy guidelines and Programmes related to agriculture and irrigation.
Ministry of Environment, Forest and Climate Change (MoEFCC)	Nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry policies and Programmes.
National Water Board	Established in 1990 under Ministry of Water Resources, apex organization with responsibility for progress achieved in implementation of National Water Policy and other issues, reports to National Water Resources Council
National Water	Established in 1983 with prime minister as chair, minister of

Table 2: National and State Level Institutions and their role on Groundwater Management

Source: An Analysis of Water Governance in India: Problems and Remedies

right to groundwater was linked to right to land under the 1882 easement act. However, the GOI, on the directive from the supreme court, formed the Central Groundwater Authority (CGWA) to regulate and control the use of groundwater. The Authority hasn't had much effect on the exploitation of groundwater as ground water is seen as a private property and not as a common pool resource. It has become customary that the owner of a land is also the owner of the groundwater below it, without realizing that the groundwater below belongs to a larger aquifer, which is tied to the macro level water ecosystem. As Himanshu Kulkarni of the Advanced Center for Water Resources Development and Management said, "The approach so far has been: this is my land, so the water below it is mine, and I can use as much of it as I want" (Chandran, 2019). The Central Groundwater Authority (CGWA) and Central Groundwater Board (CGB) are the apex bodies responsible for governing and managing groundwater. The CGWA is responsible for regulation and development of groundwater as a prime natural resource whereas CGB looks at resource assessment and monitoring groundwater situation at the national level. The CGB provides assistance to state level groundwater boards for monitoring purposes. In addition to these agencies there are many other agencies and departments at various levels dealing with groundwater management. CGWA and CGWB come under the ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD & GR), which is the nodal ministry for groundwater management.

At National level there are many challenges with the primary boards itself. Even though CGWA and CGB were formed with the intentions of reforming the groundwater sector in India, there is always a doubt over their status and mandate. Also they face chronic understaffing making it tough to fulfill their functions (Garduno et al., 2011). The technical capacity both at the national as well as the state level is generally weak- there are just not enough employees to take up all the tasks for groundwater management. The roles and responsibilities are not sufficiently defined leading to institutional mismanagement. Further on, both MP and UP have failed to develop a regulatory framework to govern groundwater extraction, according to a study published by the GOI in 2016 (World Bank Group, 2016). In an article titled '*Governing Groundwater: Fostering Participatory and Aquifer-Based Regulation*', Philippe Cullet states that '*In a context where groundwater is understood as the most local source of water, the legislative scheme is at odds with reality on the ground'* (Cullet, 2019:4).

In 2016, in collaboration with the World Bank the GOI initiated the National Groundwater Management Improvement Program. States and regions selected to participate in this program were Gujarat, Maharashtra, Haryana, Karnataka, Rajasthan, Uttar Pradesh and Madhya Pradesh. Bundelkhand was the region specifically chosen within UP and MP. The aim of this program was to strengthen institutional competencies and trans-sectional linkages between key GW agencies at the state and district level (World Bank Group, 2016). In its report, the World Bank suggests some good recommendations with respect to participatory planning and defining the role of the panchayats in groundwater management. The report takes the approach of integrated groundwater management without much consideration of water resource management and tends to treat groundwater in isolation. This approach isn't a new one and it reinforces the fragmented approach of the state towards water, drought and groundwater governance.

3.3.4 State and Basin Level Water Management

According to the constitution and the NWP, states are responsible for the water management. Based on the recommendations of the NWP, they are supposed to formulate agencies and boards to govern water resources. The Water Resource Department, Water Supply and Sewage Board and Irrigations department are some of the recommended agencies. However, the NWP isn't mandatory for the states to adopt, hence both Uttar Pradesh and Madhya Pradesh have their own set of agencies without much similarity. As a result, Bundelkhand being spread across two states, receives fragmented water management. If the NWP is supposed to be national level framework, why not make the framework mandatory and leave the details to the state? Further, similar problems exist as the state level like the National. Representation of the local level authorities remains minimal and at the execution level.

Table 2 Administration of Water at State Level

Name of Agency	Role(s) of Agency
Water Resources Department	Policy formulation, holistic planning, funding and coordination of water resources at state level
Water and Land Management Institutes	Capacity building, Research and Development and Training at state level for water and land management
Agricultural Universities	
Water Authorities and State Water Boards	For the effective regulation and monitoring of water resources at state levels
Water Supply and Sewerage Board	Caters to public the water, waste water, solid waste management and storm water management services within the state
Municipality/ Nagar Palika	
Gram Panchayats	
State Pollution Control Board	Have the responsibility of water quality aspects
Irrigation Department	Regulates operates and manages the provisions of irrigation within the state
Public Works Department	Construction, maintenance, and management of water projects and schemes

Table 3: Administration of Water at State Level

Source: An Analysis of Water Governance in India: Problems and Remedies

The NWP emphasizes on basin level planning through decentralized water organizations. All the versions of NPW (1998, 2002, 2012) recommended the creation of River Basin Organizations (RBO) to officially emphasize basin level water management. This is stated in the clause 2.3 oh NWP 2012 as follows, 'to deal with and enable establishment of basin authorities, comprising party states, with appropriate powers to plan, manage and regulate utilization of water resources in the basins'

This recommendation contradicts the policy itself and also the constitution. The political boundaries of state do not match with the hydrological boundaries. Most of the river basins are inter-state and would require coordination of multiple actors across sectors. In all there are 20 river basins in India with the Ganga river basin being the largest one. Bundelkhand region falls in this river basin. The 1998 and 2002 versions essentially state that basin/sub-basin level planning is important but it should be carried out by the individual states. It seems rather illogical to emphasize on basin level planning when each state has to manage its own water resources independently. As Chetan Pandit and Asit K. Biswas state

> *"'Take for example the Ganga-Brahmaputra River. The scale and complexities are simply far too big for any basin-wide planning. Individually, even the Ganga and Brahmaputra river basins, at 861,452 km2 and 194,413 km2 respectively, are very big to plan. Even if a*

major tributary of the Ganga, such as the Yamuna, is considered, it is still too big and complex to plan" (Pandit and Biswas, 2019:5)

It's been almost 3 decades since the first NWP was implemented. So what is the status of these RBOs? How many are currently existing? The answer is none. Neither a RBO was created nor one is in the pipeline (Pandit and Biswas, 2019). One of the reasons for this could be that RBOs will lead to reduction of state control over water resources and also will reduce their negotiating powers with other states given that RBOs are meant to be basin level, which indirectly means inter-state.

3.3.4.1 Decentralized Water Management

Along with RBOs, another set of organizations the NWP 2012 established were the WUAs- Water Users' Associations. The policy recognized the need for participatory planning and the involvement of farmers in the planning process. It was also known as PIM- Participatory Irrigation

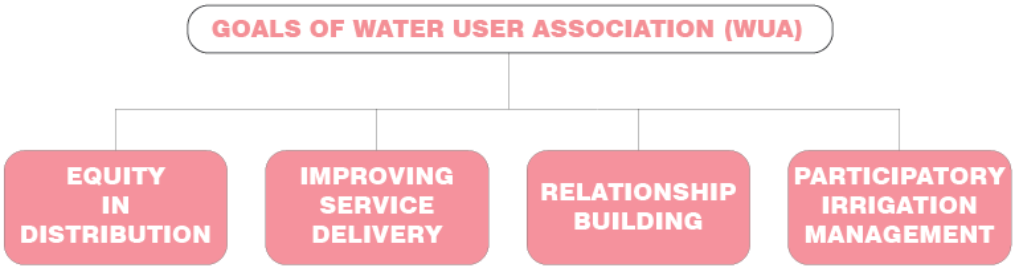


Diagram 5: Goals of Water User Associations as described in NWP 2012

Management. 24 states in India have adopted the recommendations by the NWP 2012 and have enacted laws on PIMs. These WUAs have some primary goals such as achieving equity in water distribution, improving service delivery through better operation and maintenance and creating a healthy relationship between the irrigation agency personnel and the users. One of the important goals is to encourage collective and community responsibility with the farmers to operate, maintain water systems and collect water charges for the irrigation agency (Babu et al., 2011). NWP 2012 advocates to give statutory power to Water Users' Associations (WUAs) to collect charges of water as well as to retain a component of the revenue. The intention of this clause is to make WUAs not restricted by the bureaucratic functioning and will be more receptive to the needs of the farmers.

The WUAs themselves are a part of a much larger network that has been setup based on hydraulic boundaries that are administratively viable within a particular state. So what happens to those hydraulic boundaries that lie across multiple states? Given that every state has its own PIM act, is there a mechanism for interstate coordination? Also, the government hasn't found a method to scale up WUAs and the issue is not with the idea but with the implementation structures. One of the issues noted in a footnote in this paper is that WUAs are sporadically constituted without little or no allocation of funds.

More than nine thousand WUAs have been formed in UP and around 1700 in MP. This number seems larger at first but when we look at the total sown land covered by these WUAs as against to

the total sown land, the coverage is very low. In UP the net sown land according to the agriculture ministry is 165 million hectares. Out of this the WUAs have managed to cover less than 1 % of the irrigated area. Similarly, MP has a total of around 151 million sown land. Out of this, the 1700 WUAs have covered only about 1.1% of the irrigated area.

WUAs have seen little success but due to poor planning can be considered a failure of governments efforts in decentralizing water administration. The above examples are indication of complete mismanagement between the center and the state governments. The WUAs are planned centrally and aren't answerable to the states which is unconstitutional. Also, if the states have set their own agendas related to water, what role do the WUAs play? As of now, not a significant one. WUAs in effect reduce states control over water resources and that will not be acceptable to the state governments.

3.3.5 Decentralization vs Deconcentration

RBOs and WUAs were the government's attempts at decentralization. Both haven't seen much success in last 8 years. Apart from the governance issues, there seems to be an issue with the idea of decentralization itself that the governments have adopted. Until now, decentralization is carried out by devolution of only administrative power to the local level bodies. Planning and finances are still kept under the purview of the state or the national governments. So is the decision of roles and responsibilities of these decentralized units. Most WUAs collect charges on behalf of the state and in return get a percentage of the total amount. Such a framework of decentralization makes itself weak, as these local units are still answerable to the authorities of the state. This isn't decentralization but rather deconcentration of administrative powers which have little or no effect on ground. Satyajit Singh in EPW States,

"*Democratic engagements with social and economic relations here might not necessarily provide desirable decentralization out-comes, but rather outcomes dependent on the interplay of existing political relations that could very well lead to a different form of centralization*" (Singh, 2014:677).

The way these current decentralized or deconcentrated units are planned, it is meant reinforce the plans the of the state rather than work for the local people and also be answerable to them. The time till decentralization does not involve financial devolution of power and accountability to the citizens, it can never succeed. It therefore remains a centralized system with little institutional development at the state level to facilitate empowerment of local authorities. WUA and RBO like institutions become agents of the state. However, this isn't to imply that the national and state level governments shouldn't manage water. But rather, it's to suggest that for decentralization to succeed, there need to be strong vertical and horizontal linkages, which allow smooth flow of information and data. By devolving power to manage finances and planning process to the local authorities, the state can concentrate on being a monitoring and evaluation system.

3.3.6 Issues with Data Collection and Monitoring

The NWP (2012) and NWFB (2016), both legislations push for decentralized water management by the state and local citizens. They also talk about conservation of water resources, maintaining water quality, rainwater harvesting techniques, participatory irrigation management and watershed development (Bhatt and Bhatt, 2018). These concepts need to be managed by the agencies listed above but both the legislations fail to talk about the governance and administration mechanisms through which various agencies will collect information, coordinate and share resources for effective implementation of the plan. Just assigning roles and responsibilities without setting up feedback mechanisms, robust monitoring systems and involvement of local communities renders these ideas only symbolic in nature without much impact on ground (Thakkar, 2019).

In a paper titled '*Emerging Issues in Water Resources Management: Challenges and Prospects'* the authors argue that there is a lack of operational and interactive mechanism based on scientific data, given that weather and climate information play a very important role in determining drought as well as future water related projects (Singh et al., 2019). The article further goes on to state that many of the water related projects are governed based on perceptions, myths and emotions rather than hydrological data. More so, the data itself is poorly collected, managed and is many times incomplete. Such unreliable nature of data, makes the coordination and interaction between agencies even tougher. A NITI Aayog report in 2018 stated:

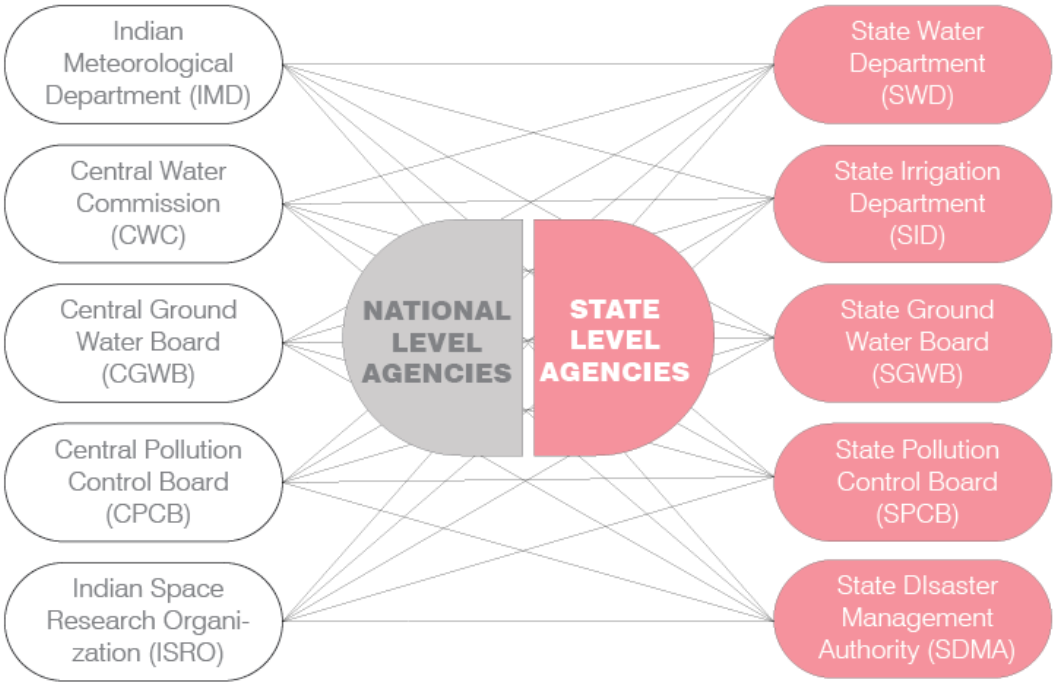


Diagram 6: Schematic Diagram showing the complexity of Data Management

Data systems related to water in the country are limited in their coverage, robustness, and efficiency. First, data is often not available at the adequate level of detail. For example, water use data for domestic and industrial sectors is available at only the aggregate level, and thus provides very little information to relevant policy makers and suppliers. Second, where data is available, it is often unreliable due to the use of outdated collection techniques and methodologies(CWMI (NITI Aayog), 2019:29).

The data collection framework needs to be reformed urgently, to get a clearer picture of the actual condition of drought hit regions lie Bundelkhand. Indian Meteorological Department (IMD), Central Water Commission (CWC), Central Ground Water Board (CGWB), Central Pollution Control Board (CPCB), State Pollution Control Board (SPCB) are the primary data collection agencies at the national and state level. However, there are many other agencies that collect large amounts of data on water. This obviously creates many discrepancies and inaccuracies in the output. Improvements in remote sensing technologies have surely helped the governments to receive more accurate data but the baseline parameters used by agencies aren't always the same. Even though the bureau of Indian standards and World Meteorological Organization (WMO) have laid out coherent standards, there is lack of uniformity in the data collected (Gupta et al., 2011). Further on, most data collected is quantitative and the country lacks significantly in collecting, monitoring and managing, qualitative data (Singh et al., 2019)

In 2009, the CWC and ISRO developed the Web Enabled Water Resource System (WRIS) that provides standardized GIS data open to use for all departments and agencies. This is imagined to be a parent data management tool and it has been improved immensely over the years. Unfortunately, availability and know-how of advanced technologies like remote sensing data are largely confined to the data monitoring agencies ISRO. Knowledge, education and awareness about such technologies must percolate to the lowest political unit, with the eventual aim of empowering every single district and block level agency to conduct its own data gathering, monitoring and analysis tasks.

Further, the NWP (2012) envisions the use of only modern operational methods in managing water while completely ignoring the traditional knowledge on drought and water management. The Bundela and Chandela dynasties may have been able to manage drought situations through investment in storage tanks, reservoirs and canals. This disregard for the history of water use in India is of serious concern. Cultures of communities in places like Bundelkhand have been built on traditional forms of knowledge and ignoring this fact inevitably excludes them from the planning processes.

However, there is uncertainty over the capacity of these historic tanks in Bundelkhand. It is safe to assume that the current domestic and agricultural needs are significantly higher than the holding capacity of these tanks. If revived, will they be able to suffice the needs of the villages around them? Asit Biswas and Chetan Pandit have their doubts. They write 'if traditional water harvesting does not make a significant difference, then it is not worth doing. Equally, if it is worth doing, then it should make a perceptible and measurable difference'(Pandit and Biswas, 2019). The act completely ignores this debate around historic water infrastructure. This however, does not imply that the traditional systems are not useful. But on the contrary, it emphasizes the necessity of carrying out quantitative studies that can help evaluate the water holding capacity against the demand, structural stability of these tanks and cost benefit analysis which would also account for the environmental benefits if any. This would surely help the authorities to make an informed decision about the upkeep of these systems. In the next chapter we will look at the drought and water management at the local level, to further understand the existing state of district and local level authorities.

Chapter 4: Drought and Water Management at the Local and Regional Level

The agencies and programs that govern drought and water scarcity have been covered in the previous chapter. On the national to the state level, problems such as overlapping and unclear mandates, misguided policies, and top-down dynamics that exclude important stakeholders have meant that government efforts to improve the situation in Bundelkhand have not seen much success. The underlying problem of mismanaged watersheds remains, and the human development index of all districts in Bundelkhand remains low.

This chapter will look at the problems in drought and water management at the local level, from the district government to the village panchayat. Districts (zila parishad), blocks (panchayati samiti), and village governments (gram panchayats) are called the Panchayati Raj institutions, and were created through the 73rd constitutional amendment. Promulgated in 1993, the amendment aimed to formalize structures of local self-government. Even though districts may encompass millions of people, they play a central role in influencing the actions of block and village level governance. First, we will look at problems with governance in Bundelkhand and social dynamics that affect the quality of governance. Then, we will analyze the implementation of the Bundelkhand Package in UP and MP in order to understand the failures of the drought response. Finally, we will look at village-level attempts to better manage water provision and supply to identify successful practices that can be incorporated into governance.

4.1 Problems with Local Governance

When it comes to drought management, it is the district level that is in charge of drought preparedness and mitigation activities, as well as drought relief. The District Collector- also referred to as the Deputy Commissioner or District Magistrate- is responsible for all activities related to disaster management, including recommending drought disaster declaration to the state government. The collector is also responsible for coordinating projects to ensure effective response measures (Bandyapadhyay, 2019).

Overall, the role of the District Collector has also changed significantly over time. Under the British Raj, Alok Ranjan (1994) described the job of a District Collector as having to collect revenue, represent the interests of the people and "lead, coordinate, push and harmonize various departments and diverse aspects of government functioning". However, in the decades after independence when the central government undertook massive projects to develop rural parts of India, the Collector's role has become simultaneously more complex and more vague. Although he still has the role of revenue collection, he is increasingly responsible for the implementation of programs and the distribution of resources directed from higher levels of government. His role has not been properly defined. Therefore, both politicians and superior officers in the bureaucracy are likely to intervene in the Collector's office to further their own interests.

This has resulted in a strange dynamic within governance structures. The central or state government holds the power to formulate policies or programs and allocate resources. However, gram panchayats are, on paper, given the authority to administer their villages. This puts the Collector in a position where he needs to carry out the programs that the state decides on by seeking

the active cooperation of leaders within the Panchayati Raj at the village and block levels, while also dealing with attempted intervention by politicians and other bureaucrats. As Sole (2014) describes it, the Collector is "called upon more often than not to explain, convince, cajole and persuade people that matter" to support the execution of programs that are driven by state and central governments. These problems of overlapping mandates and vaguely defined roles continue to be present at the block level.

The Block Development Office is a sub-division of the district. It is composed of elected members, including co-opted members (reservations for women, SC/ST), MPs and MLAs, and the sarpanches of the gram panchayats in the area. Together, these make up the Panchayat Samiti. The Block Development Officer (BDO), who is in charge of administrative functions through Block Development Office, receives inputs for the Panchayat Samiti. The BDO, similar to the DC, is placed in a difficult position. While he has to report to the district level officers and carry out programs outlined by the state and district, he also has to work with the elected representatives of

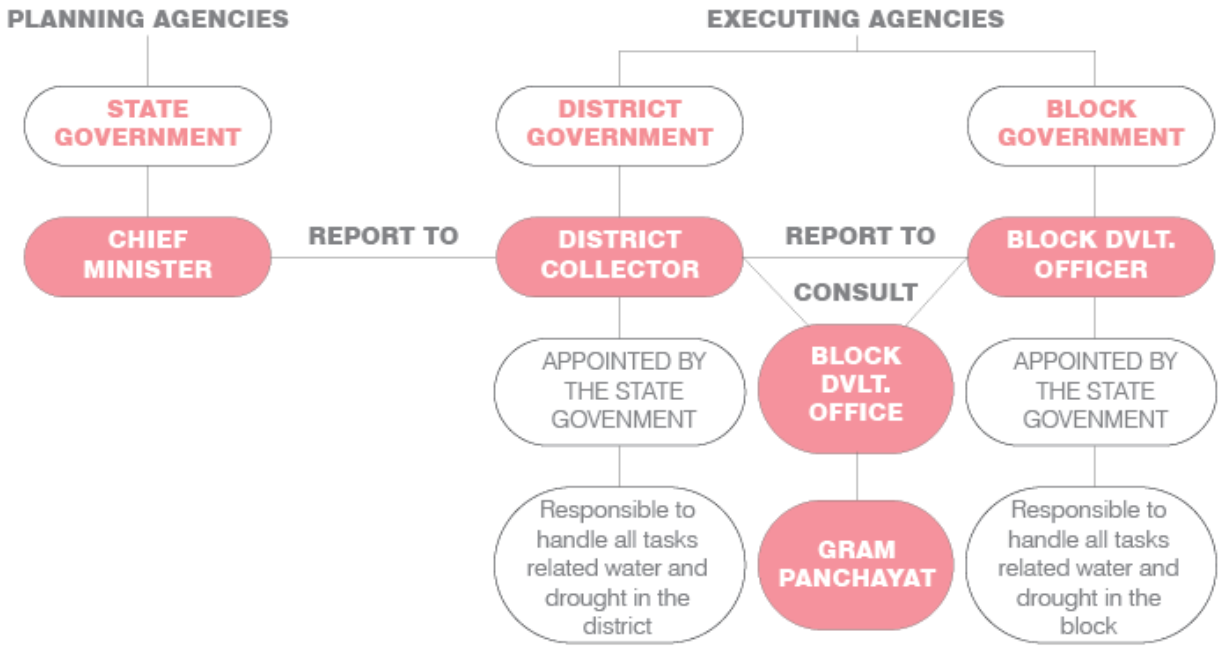


Diagram 7: State to Gram Panchayat Level of Water and Drought Governance

the Panchayati Samiti and carry out their decisions.

UP and MP have different methods for the recruitment of BDOs, but both states require officers to go through a three-month orientation and job training course, while other members of the block have to undergo a one-month orientation. The content of this orientation generally includes understanding the area's social, economic, culture and political orientations, and developing capacity for planning and administration. However, the BDO is often simply not motivated to carry out the tasks given to him, which include guiding the administration of the gram panchayats, improving health, agriculture, and education, and implementing public works, because of a number of reasons.

One of the main reasons for this is that a BDO's position usually only lasts 2-3 years, while the elected members of the Pachayati Samiti hold their posts for five years. This leads to major interruptions in development work. This policy of shifting personnel every few years is a holdover from Mughal and colonial rule; it has been defended as useful because there is a fear that BDOs will get entangled in local politics if they stay longer. Another problem is that there are hardly any avenues for promotion for the BDO (AP Barnabas, 2016). High turnover is also a problem at the district level. The DC is often moved every couple of years, interrupting continuity in governance and implementation.

What further complicates the matter is that each district- and therefore, each Collector- has to meet the needs of up to two million people. As demonstrated below, a single block in MP has to deal with an average of 185 villages, while a block in UP has to deal with 113. With hundreds or even thousands of people residing in each village, this means that each block oversees the needs of potentially hundreds of thousands of people.

Uttar Pradesh	**Total population (2011 Census)**	**Rural population (2011 Census)**	**No. of blocks (minor irrigation census 2014)**	**No. of villages (minor irrigation census 2014)**	**Average no. of villages per block (minor irrigation census 2014)**
Jhansi	2,000,755	1,164,749	8	818	102
Jalaun	1,670,718	1,251,964	9	1151	128
Lalitpur	1,218,002	1,042,907	6	754	126
Hamirpur	1,104,021	894,707	7	625	89
Mahoba	876,055	690,377	4	521	130
Banda	1,799,541	1,523,378	8	695	87
Chitrakoot	990,626	894,274	5	650	130
Madhya Pradesh	**Total population (2011 Census)**	**Rural population (2011 Census)**	**No. of blocks (minor irrigation census 2014)**	**No. of villages (minor irrigation census 2014)**	**Average no. of villages per block (minor irrigation census 2014)**
Datia	786,375	604,199	3	668	223
Tikamgarh	1,444,920	1,195,160	6	1003	167
Chhattarpur	1,762,857	1,363,604	8	1216	152
Damoh	1,263,703	1,013,296	7	1229	176
Sagar	2,378,295	1,669,346	11	2105	191
Panna	1,016,028	890,707	5	1019	204

Table 4: District and Block Level Population Data

Source: 2011 Census, 2014 Minor Irrigation Census

On top of this, the region suffers from a general absence of government. Government staff are often not present; in educational and health facilities, personnel are simply not posted. Both block and district offices do not have enough personnel. On top of this, most government employees are residents of different districts in Bundelkhand, and the lack of reliable public transport affects their regular presence and work efficiency. Paperwork is often left incomplete, and the supervision and monitoring of schemes is neglected. Corruption and negligence are commonplace. Assets that do not actually exist are officially listed, ghost beneficiaries steal funds, and bribery is commonplace. The absence of local-level governance in Bundelkhand means that water management or drought relief projects- which are always top-down and directed by the state (if not central) government- cannot be implemented well.

Another reason for the absence in governance is that, since Bundelkhand is far from administrative and political centers of either state, officers do not wish to be posted there. All of the region's districts are "listed" districts rather than "pivot" districts, which means that their issues do not factor in the policy priorities of either the UP or MP state governments. The schemes and programs of the government do not reflect the needs of Bundelkhand, and people from the region feel that they do not have any say in what their priorities are (NITI Aayog, 2015).

In this vacuum, there would seem to be the possibility for gram panchayat at the village level to step in. Under the constitutional amendment of the 73rd, the gram panchayat is granted much more authority to make decisions regarding village governance. However, in Bundelkhand, this process of decentralization has been very slow. In many cases, the state governments of MP and UP have taken powers back through alternate channels and even amendments to law. In MP, the situation is slightly better: decentralization has been institutionalized to the extent that people have the space to articulate their priorities; however, the mechanisms to procure funds or expertise are absent. In addition, government employees working at the panchayat level are not accountable to the gram sabha. In UP, gram sabhas, where people may be able to voice their concerns, are not even held regularly (NITI Aayog, 2016: 174-181).

It is interesting to note that post-Independence, the constitution did not grant much power to the village panchayat, fearing that upper castes would capture power. District Collectors had the power to reject panchayat decisions and even dismiss them. After the 73rd constitutional amendment, the village panchayat was given a little more power. However, this limited decentralization seems to have exacerbated the elite capture of power are the local levels. Elites are able to manipulate these newly given powers to further their own interests. Decentralization has not been carried out to such a degree that all people are able to demand a say in governance. Part of the issue is that no institutions up to the district level have much financial independence, as resources are generally allocated on the central or state level (Hooja and Mathew, 2007).

In summary, the district and block level of governance are tasked to carry out policies and priorities determined by the state government. However, they are under-resourced, both in terms of personnel and financial resources, and have limited planning abilities. Moreover, they are also tasked with carrying out the agenda of the village panchayat while trying to work with it to implement orders from above. The village panchayat, with its limited capacity, has to push for changes through the block and district because it does not have the resources or authority to do so itself. In the next section, we will be discussing the social dynamics that are present at the village

level, to see how they affect governance and increase the vulnerability of certain populations to water scarcity and drought.

4.2 Social Dynamics

Lyla Mehta's (2006) article on water scarcity and its anthropological dimensions argues that water scarcity is not necessarily a natural phenomenon, and that its extent is experienced differently according to the socio-economic status of people. In her analysis of water scarcity in Western India, Mehta notes that the access to groundwater in Kutch is marked by tremendous inequality, as higher castes "own most of the wells in the village...well ownership goes hand in hand with land ownership" and that the groundwater crisis is about that "access and control over scarce resources" (Mehta, 2006: 658). In another example, the entirely community-managed water allocations in the Shivalik region of Haryana were skewed to benefit large and powerful landowners (Kumar and Vishisht, 2005: 34).

These examples demonstrate the real threats of elite capture of scare resources at the village level. Such dynamics are present in Bundelkhand, where administrative and political neglect means that Bundelkhand has a rather lawless character, which exacerbates the current power dynamics and land relations in the region. Features of a strong feudal culture, where ruling classes' sense of honor, propriety, and privilege determine relations within the region, still remain. The open display of guns and threats of violence are used by upper-caste farmers to maintain control over most of the land and water resources. They also occupy the positions of power in the panchayats and other local administrative bodies, controlling even those seats reserved for scheduled castes. Meanwhile,

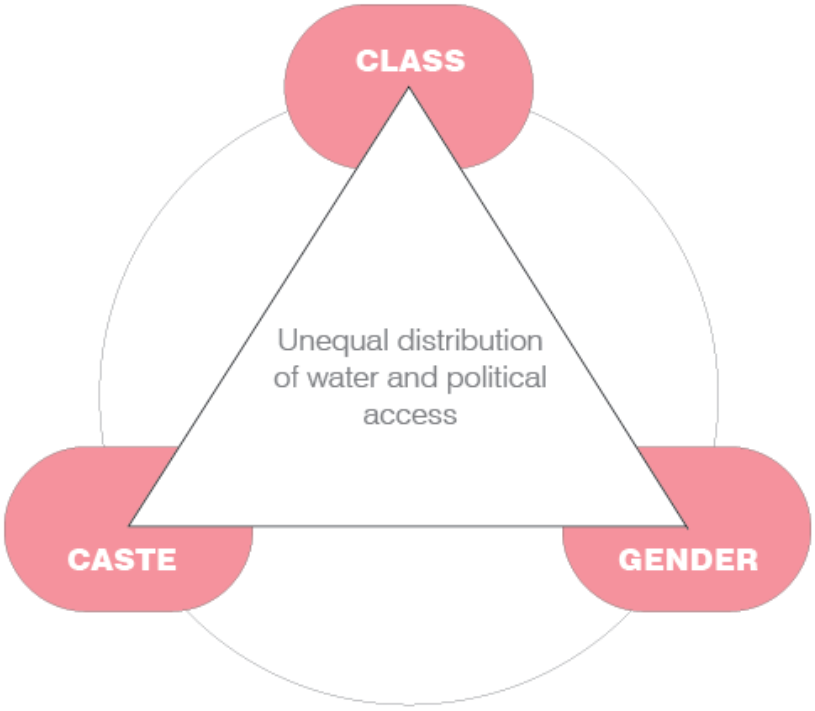


Diagram 8: Reasons for Inequity in Water Governance

many hold Below Poverty Line cards to tap into government schemes and financial resources, and collaborate closely with government officials so that their needs are prioritized.

On the ground, these deep-rooted caste divisions are inescapable. Groundwater is the source of water for most household and irrigation needs in Bundelkhand. Because groundwater is obtained through borewells and pumps, upper-castes have an easier time controlling water resources. Any attempt by scheduled castes to fight for their rights is met with outright hostility. Lower castes are threatened when they try to obtain water from the village's wells and pumps. Families are forced to travel dozens of kilometers every day to fetch enough water for their domestic needs. When the government sends water tankers to the region, they often go straight to the upper caste settlements of Brahmins and Thakurs, ignoring the Dalit settlements in the area (Lahariya, 2019).

The dimension of gender is also an important one to address in the context of water. Bundelkhand also exhibits a highly patriarchal culture, where women are expected to be totally subservient to their husbands. The sex-ratio of Bundelkhand is extremely low at 885 women per 1,000 men (Census of India 2011), having improved somewhat from 873 in 2001 (Census of India, 2001). A sub 900 sex-ratio is a sign of severe discriminatory practices in society. In this region, as in most of India, it is the woman's duty to fetch water for the household. For women belonging to scheduled castes, this means that they need to walk great distances to reach a water source they are allowed to draw from (NIDM, 2012).

During our ethnographic research in Bundelkhand, we saw many of these dynamics play out on the ground. It was clear that the elite capture of local level institutions exacerbates water scarcity for vulnerable populations. The DC or BDO do not have much power to either influence the state or change the dynamic of gram panchayats, and the lack of law and order in the region means that discriminatory practices are gone unchecked. In the next section, we will discuss the implementation of the Bundelkhand package in UP and MP in this context of weak governance.

4.3 Implementation of Bundelkhand Package

Most efforts to tackle drought and water scarcity have been carried out in the framework of the Bundelkhand Package, where plans are made and implemented in a top-down manner, without the participation of communities. The central government sanctioned the Bundelkhand Package, giving Rs 7,266 crore, in 2009. The funds were to be used by 2012, though in 2011 the Central government released another 200 crores. The Bundelkhand Package, though it receives renewed funding every few years, is a response to the crisis of drought, rather than a long-term effort to improve water security.

The Bundelkhand package prioritizes infrastructure interventions that do not require any community engagement. This is easier for the government to plan for, as financial allocations are fixed, and to implement, as engineers and construction workers need only to be engaged in the short-term. It also enables the government to show, concretely and through quantifiable data (such as the number of handpumps installed or borewells drilled), that it has been actively trying to tackle the drought in the region. On the other hand, working in the long-term on watershed management

with the participation of communities has no fixed endpoint. Results may be visible only after years. Financial allocations cannot be fixed.

On paper, watershed management has been integrated into the Bundelkhand Package. The Integrated Wastelands Development Programme (IWDP), which follows the Common Guidelines for Watershed Development Projects 2008, has been included in the package. Its objectives are "to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The outcomes are prevention of soil erosion, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table" (NIDM, 77).

A quick look at the activities completed under the 2011 Bundelkhand Package in both Uttar Pradesh and Madhya Pradesh, however, demonstrate the priorities of the government. In UP, by the end of 2012, the recharge of dug wells, tanks, and ponds to harvest rainwater only saw 18% achievement. No water bodies, out of the 21 that were targeted, were reconstructed. On the other hand, the repair of lift irrigation schemes, the replacement of pump sets, and the distribution of HDPE pipes reached almost 100% of its target. In MP, by the end of 2013, just 9% of watershed

UTTAR PRADESH

Physical Progress of activities under Bundelkhand Package

Sl No.	Component	Unit	As on 31.12.2012		
			Target	Achievement	% Achievement
A	**Water Resource Sector**				
1.	Command Area Development of Rajghat Project	Hectares	69,500	39,140	56.32
2.	Betwa Gursarai Canal System	Hectares	27,000	20,570	76.19
3	Numbers	39	8 complete, 22 under progress and 11 in process of sanction		
4	Repair of Lift irrigation schemes	Numbers	1	1	100.00
5	Changing Pump sets	Numbers	3	3	100.00
6	RRR of water Bodies	Numbers	28	18 complete, 10 under progress and 11 not yet sanctioned by GOI	
7	HDPE Pipe distribution	No. of Beneficiaries	17,751	17,569	98.97
8	Reconstruction of water bodies		21 works	0	
B	**Watershed Management Sector**				
I	IWMP Projects				
1	DPR Preparation	Numbers	130	77	59.23
2	Entry Point Activities	Numbers	2,928	2,799	95.59
3	Watershed Development works	Hectares	4.51 Lakh ha		
II	Other Activities				
1	Construction of New dug wells/ blast wells	Numbers	8,834	3,219	36.44
2	Recharge of dug wells/tanks/ ponds	Numbers	30,864	5,442	17.63
3	Renovation of dug wells	Numbers	11,194	2,665	23.81
4	Community tube wells	Numbers	140	Not yet sanctioned	

development works was carried out. Completely missing from the goals of the Bundelkhand package were involving communities in water management. The package does not acknowledge the rapid depletion of groundwater that is taking place; in fact, it builds more borewells and pumps.

MADHYA PRADESH Physical Progress of activities under Bundelkhand Package as on 31.03.2013					
S. No.	Component	Unit	As on 31.03.2013		%
			Target	Achievement	
A	**Water Resource Sector**				
1	Command Area Development of Rajghat Project	Hectares	22,624	16,500	73
2	New and ongoing minor Irrigation projects (146)	Hectares	50,232	39,479	78
3	Major / Medium Irrigation Projects (1)				
a	Bariyarpur Medium Projects (1)	Hectares	43,850	34,000	78
b	Singhpur Barrage Medium Projects (1)	Hectares	10,200	0	0
4	Canal Renovation (3)	Hectares	24,391	83,926*	
B	**Watershed Management Sector**				
I	IWMP Projects				
1	DPR Preparation	Numbers	57	41	72
2	Entry Point Activities	Numbers	245	297	121
3	Watershed Development works	Hectares	3,31,000	32,000	9
II	Other Activities				
1	Construction of Stop dams	Numbers	353	161	46
2	Distribution of Water lifting devices (pump sets)	Numbers	45,000	28,219	62

Table 5:

Source: NIDM, 2014: 72-3

Since the Bundelkhand Package was announced in 2009, it has faced multiple controversies. A majority of the funds from the package were allocated to irrigation and watershed management schemes that were already in place. Without trying to understand where previous gaps in goals or implementation lay and improving them, authorities simply fed more money into schemes that were already shown not to be working. On top of this, there have been reports of large-scale corruption in the distribution of funds. The NIDM believes that the main problem has been in the "shoddy monitoring of the development work and improper execution of funds" and states that the interrupted flow of information through the different levels of government is a "formidable obstacle" (NIDM, 2014: 73).

In 2014 an investigation by Cobrapost, a news site known for its undercover investigative journalism, found that little had been delivered on the ground. The package included plans for "a well-laid out irrigation system consisting of check-dams, canals, culverts, ponds and wells to rid the region of perennial scarcity of water, apart from watershed development and rainwater harvesting; promotion of agriculture and animal husbandry and dairy development; and forestation and development of biofuel resources". About 40,000 new wells and 30,000 new ponds were supposed to be constructed, a watershed development program was to be undertaken on 11 lakh hectares of land, and 2.6 lakh hectares of land was supposed to be reforested (Kumar, 2015).

The investigative team of Cobrapost found that almost no implementation of these schemes had taken place. Wide-spread corruption was the biggest problem, where officials in charge of the schemes worked with the district administration and local panchayat leaders to siphon off money. Where construction did happen, it was of such poor quality that structures such as check dams would be washed away in the first rains- often inundating nearby fields and destroying crops. Hundreds of villagers who were hired for construction were never paid. In some cases, intended beneficiaries were asked to pay for the livestock, tools, or pesticide that was supposed to be free. Many of these were of substandard quality, and in some cases the goats they received were diseased and quickly died (Cobrapost, 2018).

The lack of standards in building wells has meant that most are now lying in disuse. Canals were constructed so poorly that they often either inundate fields or do not deliver water at all. In many cases, projects were completed on paper but not on the ground. The chairman of the Bundelkhand Relief Package Monitoring Committee, Banu Sahai, says that almost 90% of the ponds dug under the relief package were defunct.

This situation exists in districts in both MP and UP. In 2011, the Deputy Chairman of the Planning Commission, Montek Singh Ahluwalia, visited Bundelkhand himself after receiving complaints about the implementation of the package. Seeing the situation, he wrote a letter listing several concerns to Mayawati, who was chief minister of UP at the time (Kumar, 2015). In response, the UP chief secretary Anoop Mishra said that "Ahluwali appeared satisfied with the developmental works being executed under the Bundelkhand package" (TNN, 2011).

Although the state governments of UP and MP are in charge of the implementation, the planning and funding of the Bundelkhand packages have been the purview of the central government. In its report on the package, NITI Aayog says that "the scale of funds available is not matched with either any particular enthusiasm or capacity of the two states to utilize them". As has been shown in the tables above, UP and MP have had different levels of success; the two states have different styles of governance, different priorities, and different state level schemes. While MP has used 73% of the funds allocated to it until March 2013, UP has just used 44% (NITI Ayog, 2016: 181).

The shoddy implementation of the Bundelkhand Package has shown that there are major problems in the manner in which states carry out projects through local levels of government, from the district to the gram panchayat level. Funds were left unspent, corruption was ubiquitous, projects were unfinished, and what should have been the top priority for the package- long term watershed management- was abandoned. In this power vacuum, non-governmental organizations have often had to step in.

4.4 Local Attempts to Address the Water Crisis

Several efforts to address these problems of drought and water scarcity have been made outside of formal government structures. For instance, the National Research Centre for Agroforestry, which operates under the Indian Council of Agricultural Research (ICAR), was able to improve the management of the Garkhundar-Dabar watershed in a sustainable way to increase water security. Using unobtrusive structures such as check dams, gabion structures, water spreaders, and bunds, the NRCA was able to reduce run-off and increase water availability. There was a dramatic increase in surface and groundwater availability (Palsaniya et al, 2011). However, there was no community participation in this effort. It was also carried out in a top-down manner, with no consultation of the community. How these structures are to be monitored and maintained is not something the article addresses.

There have also been multiple attempts at involving communities in managing the water resources of their village that have been spearheaded by NGOs operating in the area. Haritika, an NGO based in the district of Jhansi, worked with the Coca-Cola India Foundation, International Crops Research Institute for the Semi-Arid Tropics, and the National Research Centre for Agro-Forestry to collaborate with the district administration and local community to improve management of the Parasai-Sindh watershed. The watershed lies in the portion of Bundelkhand that is in UP (Varshney, 2019).

A watershed committee of ten members was formed, with the sarpanch of the village as its leader. The committee then helped identify areas where infrastructure could be built, and supervised the work. Through the construction of eight check dams and the restoration of traditional water harvesting tanks, water storage increased and the groundwater table increased. In 2018, NITI Aayog commended the watershed management program as one of the Best Water Practices (Coca-Cola India, 2019). However, this program does not seem discuss how caste or gender divisions within the village played out, and what mechanisms were established to ensure responsiveness and adaptability to changes in the watershed in the future.

Srijan, another NGO in Bundelkhand, worked with Hindustan Unilever Foundation to restore ancient tanks in the district of Mahoba to improve water storage capacity and recharge groundwater. It helped form a tank management committee, which was put in charge of the monitoring and maintenance of these tanks. This initiative, however, also does not address gender and caste divisions. For instance, only men seem to attend community meetings, as was captured in the organization's video documentation (Srijan, 2019).

Another attempt at watershed management, spearheaded by the NGO Development Alternatives, used GIS and other spatial analysis to determine where watershed infrastructure should be built. It helped form watershed management committees in each village, and trained them in watershed management and monitoring. The watershed committee comprised of both powerful groups (panchayat members, land-owning farmers), as well as marginalized groups (women, landless farmers). From the watershed committee, Water User Groups (WUGs) were established to manage

and maintain structures. DA provided technical support. Later, a watershed development fund was established for the continued maintenance of structures (Development Alternatives, 2014).

The NGO Akhil Bhartiya Samaj Sewa Sansthan (ABSSS)'s efforts also detail a high level of success in the villages they worked in. ABSSS was involved on the ground for a period of eight years, conducting workshops and training that taught villagers how to manage water according to their specific topography, climatic conditions, and the needs of the villagers. The NGO placed special emphasis on working with women and marginalized farmers from lower castes. Although most of the infrastructure that they built was non-obtrusive and sustainable, such as bunds, farm ponds, land leveling, renovation, etc., although there was a lift irrigation scheme carried out with the government (ABSSS, 2012).

Such successes are not easily replicated, given that villages have very different geographical, societal and economic dynamics. For instance, when the NGO Parmath tried to organize marginalized farmers to restore the traditional water systems in their village, they faced strong resistance from more powerful farmers. They forced them to stop their work, and threatened to murder them should they continue. As told by one farmer, the more powerful figures in the village wanted to ensure that the scheduled castes remained oppressed and under their control.

In response, the women of scheduled castes, who had to bear the burden of finding water, decided that they would continue to work despite the harassment. They did not only face harassment from the upper-caste farmers. Their own husbands often tried to stop them from participating in the restoration of the watershed structures, saying that they were bringing shame on to the family by entering the public sphere. Many decided to continue the work, however. Parmath supported them by training them on water management and mechanisms to combat water scarcity (Patel, 2019).

Slowly, the women- who now called themselves Jal Salehis- restored tanks and ponds, created soak pits, and encouraged the growing of less water intensive crops. When their efforts bore fruit, they collaborated with the village's panchayat to decide where hand pump and tanks should to be installed, and formulated rules and regulations on water utilization. There are now over 3,000 women members across hundreds of villages (Singh, 2009).

Although the specific dynamics of community engagement vary across villages, depending on the NGO's focus and the village's specific dynamics, there is one common thread in all these success stories: the near-absence of the government. Rather than being incorporated into government programs or the Bundelkhand package, these NGOs efforts are carried out both simultaneously and independently. In the meantime, directed by the central government, officials carry out the Bundelkhand package without the participation of communities.

Diagram 9:

While NGOs could benefit from the government's technical expertise, funds, and authority, the government could benefit from the knowledge of local conditions and participatory planning that NGOs possess. Currently, on the governance side, the region suffers from misguided policies, the absence of local officials, top-down planning efforts, overlapping and inefficient mandates, and the emphasis on temporary relief measures (as opposed to long-term development). This hampers communities' ability to work with the government to develop plans for the sustainable management of their villages' watersheds. At the same time NGOs do not possess the resources to scale their operations. Since they work independently from one another and deal with the problem in different ways, they are not able to learn from one another. Another problem is the lack of accountability or oversight over NGOs (NIDM, 111-112).

These case studies point to a general direction of the way forward. There has to be some level of decentralization, so that local government officials are able to contribute to plans rather than just help implement them. NGOs, given their knowledge of problems on the ground, could help communities engage with these local government officials. For further insight into how to improve the planning of the region's watersheds, we now turn the recommendations provided in

government and academic reports in India and the work of Elinor Ostrom and the insight of Australian AID projects.

4.5 Improving Local-level Water Management

The Community Water Plus, a research project by Australian AID on community management of water resources of rural water supply in India, draws on dozens of successful case studies to try and identify common reasons for success. It is important to first acknowledge that different levels of the community will be engaged at different levels, ranging from labor contributions to full responsibility and decision-making. It also points out that there needs to be a healthy balance between community participation and government support. If government support is too high, participation may be at risk. The support demands will differ according to the needs of the village. NGOs might be able to support communities in expressing their needs for decision making and preparing them for eventual self-management (Smits et al, 2015).

It outlines the different types of collaboration between communities and governments and factors that have led to improved water management:

Type of partnering	What is being shared?	Purpose	Extent of transfer of ownership and risk
Collaborative	Responsibility, authority	**Collaborative decision-making**: To share responsibility and engage in joint decision-making with regard to service design, delivery, evaluation or adjustment.	Responsibility, ownership and risk are shared between partners.
Contributory	Funds, resources	**Support-sharing**: To pool resources or leverage new funds for implementation and maintenance of service delivery.	Senior partner retains control, but operational partner contributes resources (which may be at risk) and may propose or agree to objectives.
Operational	Work, operations	**Work-sharing:** To share work (i.e., 'division of labour') and co-ordinate operations.	Senior partner retains control; operational partners can influence decision making through their practical involvement.
Consultative	Advice, information	**Advisory**: To systematically obtain and share relevant information to improve service design, delivery, evaluation or adjustment.	Senior partner retains control, ownership and risk but is open to input from operational partner.
Transactional	Payment, Services	**Contractual**: exchange of funds for services or products.	Senior partner commissions operational partner to undertake specific tasks.
Bureaucratic	Compliance, obligation	**Legitimacy**: To fulfil regulatory or normative expectations regarding the need for partners to work together.	Senior partner retains total control over responsibility, ownership and risk, whilst junior partner seeks to maximise output from partner.

Table 6: Organizational Partnering Typology

Currently, the engagement between the government and communities can be categorized under "bureaucratic", where the government "retains total control over responsibility, ownership and risk", while the community "seeks to maximize output". To move this engagement to "collaborative", where responsibility and authority is shared, would necessitate the devolution of power from central and state authorities to the block level. For decentralization to be meaningful, these blocks have to be equipped with dedicated personnel and enough funding, so that they have the resources to engage with communities in a long-term and meaningful way.

Ostrom, in "Governing the Commons", a book that earned her the Nobel Prize in economics, discusses how communities have been able to manage their natural resources without any external involvement at all. She argues that the tragedy of the commons is not inevitable. Drawing on case studies from around the world, she shows how communities have managed to govern their common resources in a sustainable manner for hundreds of years, even while facing uncertain and changing environments. While the concept of the tragedy of the commons seems to necessitate either government intervention or private ownership, Ostrom shows that self-organized governance systems can survive provided they incorporate the follow principles:

1. Clearly define the contents of the common pool resource (CPR) and entitled parties
2. Match the appropriation and provision of common resources to local conditions
3. Ensure that most resource users can participate in the decision-making process
4. Develop a monitoring system carried out by community members
5. Implement sanctions for resource appropriators who violate community rules
6. Provide mechanisms of conflict resolution that are cheap easily accessible
7. Ensure that rules made by community is recognized by higher-level authorities
8. In the case of larger common-pool resources, organize multiple layers of governance, with small CPRs at the local level

Ostrom also addresses the need for effective communication and internal trust, as well as reducing the costs of devising, monitoring, and enforcing rules. If these conditions are in place, it is more likely that the community will be able to change rules to adapt to new circumstances. Of course, much of the success of CPR management is based on the nature of the common resource itself (Ostrom, 1990). For Ostrom, it is these unwritten rules of practice that dictate the use of common resources rather than formal policy documents. However, we see the potential of incorporating some of these rules into governance strategies.

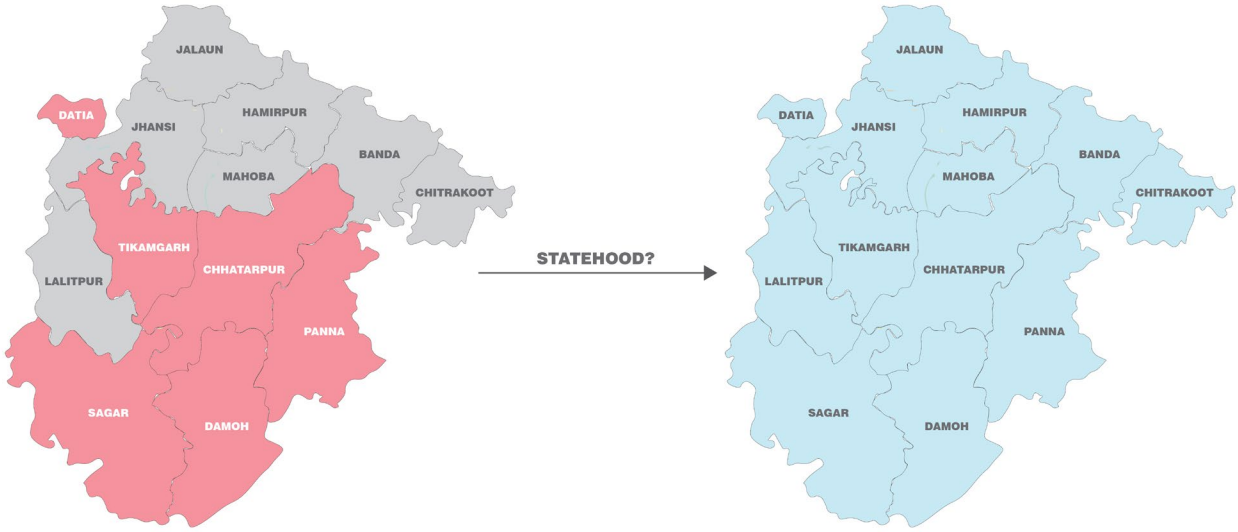
It is worth pointing out that in some of her later work, Ostrom addresses the misleading assumption that community members are homogenous in nature. When CPR literature does take into account different actors, it argues that heterogeneity within the community inhibits cooperation (Ostrom and Keohane, 1995). This is important to note while analyzing the situation in Bundelkhand, where most villages are divided along the lines of caste, class, and gender. Not only is trust within villages rare, the trust between different villages is also uncommon. In this context, it is important to consider the specific nature of decentralization that has to take place in order to ensure that everyone's needs are heard, and met. While power does need to be devolved for effective implementation, local government needs to be held accountable for their decisions.

In the next chapter, we will be exploring the possibility of the creation of a separate state of Bundelkhand, through the bifurcation of the thirteen districts from their parent states and subsequent merger to become a new state, and the effect this would have on water management and planning.

Chapter 5: Counterfactual- Statehood for Bundelkhand

This chapter will delve into the counterfactual of what would happen if Bundelkhand were to become its own state. It will look into the history of the formation of states in India, the current movements that are fighting for a separate state of Bundelkhand, and how a separate state might change water governance. By doing so, we hope to gain a better understanding of the possible effects on the governance of water resources, and whether a separate state could be part of the solution for better water management. As a secondary question, this chapter will also briefly address the political feasibility of a separate state at this point in time.

The logic behind posing counterfactuals is based primarily on the idea that questioning what could have been or what might be sheds light on the current dynamics of a situation and provides future direction based on gained insights. This is because, even while we are analyzing a situation that does not exist, the *causal reasoning* that undergirds the present situation remains relevant. Therefore, while exploring the counterfactual, we continue to hold on to our understanding of how different components of the situation influence and interact with one another. Simply put, "a counterfactual is interpreted as a statement about how things occur in other possible worlds governed by the same laws of nature" (Lewis, 1973).



5.1 Rationale of Separatist Movements

Post-independence India determined the boundaries of states according to linguistic groups. In 1956, the States Reorganization Act was promulgated, organizing the boundaries of India's states and territories along linguistic lines. The demand for states to be established on a linguistic basis can be traced back to Odisha's linguistic movement in 1895, which was finally realized in 1936. Post-independence, political movements that called for a linguistic basis for states gained momentum. Language was seen as a necessary criterion for establishing states, as it would allow local people to participate in governance. There was also the sentiment that a lack of cultural affiliation between people and their government would lead to neglect and inequitable distribution of resources (Koshi, 2016).

There was also the perception that smaller territorial units would improve administrative efficiency. Many states in India are the size of countries, both in terms of area and population. As Mawdsley (2002) states, "Many of the current states of India are administrative leviathans, and the sheer physical distance ordinary people, politicians and government officials have to cover can act to alienate groups and regions, and hinder sensitive or well-managed development planning and initiatives" (Mawdsley, 2002:44). Smaller states might allow for more manageable administration and improved collaboration between people and political units. However, Mawdsley repeatedly points out that this is by no means an assured outcome, and that such movements may be co-opted by elite interests to benefit their agenda (Mawdsley, 2002:44).

Most separatist movements in India have been portrayed as fighting against economic discrimination and inequality, making being economically disadvantaged a core part of the identity of the movement. This is the case regardless of whether the people from the region are actually economically disadvantaged or not. McHenry (2007) claims that the "perception of reality" is more important than "reality" itself.

For instance, he shows that around half of the separatist movements in India actually had a higher per capita income than the states from which they sought separation. Some examples include Uttrakhand, Jharkhand, and Darjeeling. Based on his analysis, he also asserts that though economic inequalities exist between separatist states and parent states exist in most cases, there are exceptions, such as Chhattisgarh from Madhya Pradesh. McHenry also points out that the "vehemence" of separatist movements is not necessarily related to the degree of inequality.

Since separatist movements in India are based on the perception of economic discrimination and inequality, leaders of separatist movements label the parent state as the "other" that is seen as "acting to promote or sustain a favorable economic position for itself at the cost of those seeking separation". Leaders therefore push forward the notion that the only way to bring about greater prosperity for the residents of the region is to support separatism (McHenry, 2007:27-8).

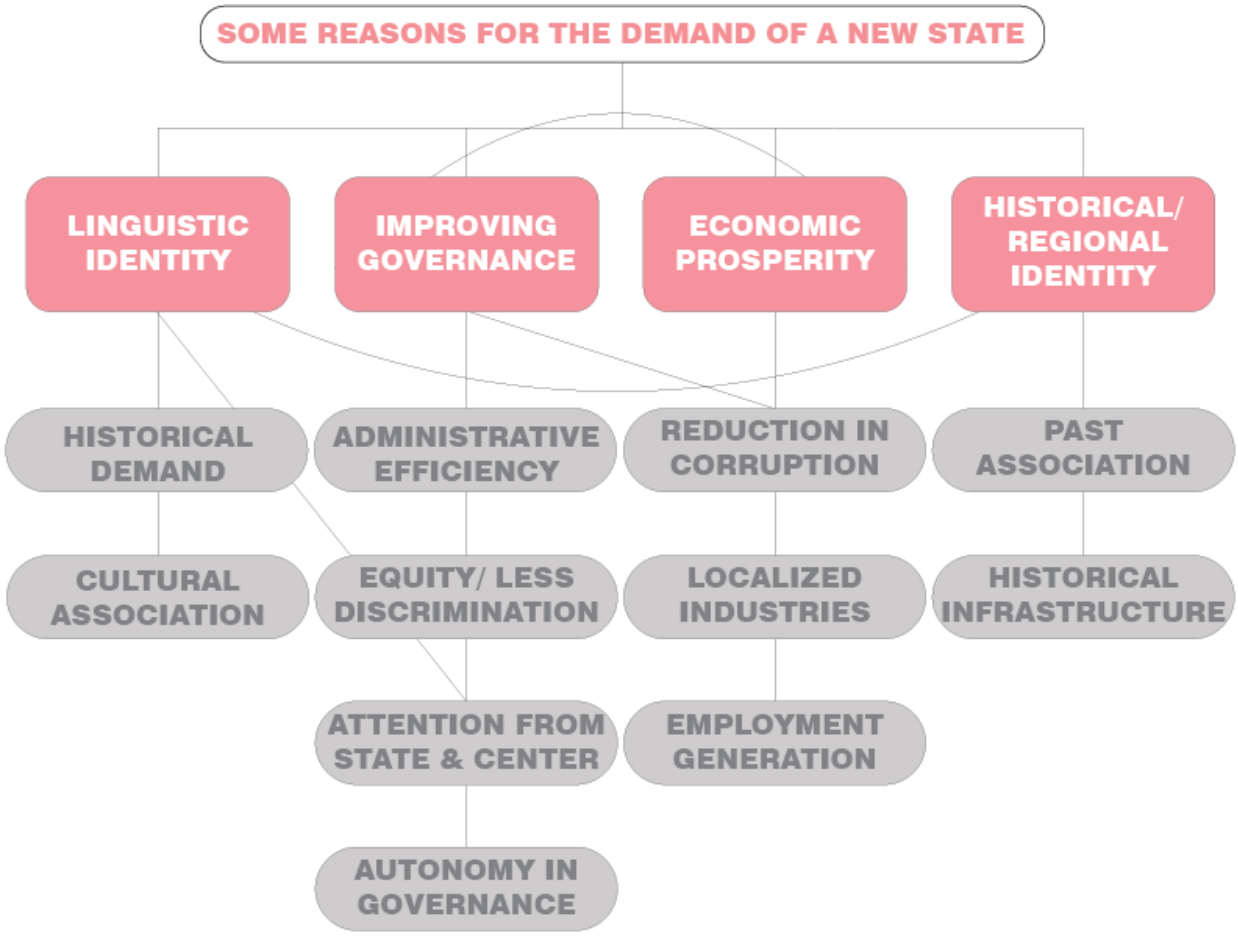


Diagram 10: Popular Reasons for Demanding Statehood

5.2 Demand for Separate State of Bundelkhand

The various different groups fighting for a separatist state in Bundelkhand have cited corruption, political and economic neglect by the state, and lack of governance in the region as reasons for needing a state of Bundelkhand. Congruent with McHenry's findings, the movements for a separate state see Bundelkhand as being economically discriminated against and neglected by the parent states of MP and UP. There is also a cultural cohesion of Bundelkhand that undergirds the claims that a separate state would be able to better serve the region's inhabitants.

The creation of a separate state of Bundelkhand was first proposed back in 1955 by the State Reorganization Commission, though it was rejected (FPJ, 2019). The demand for a separate state of Bundelkhand has arisen multiple times in the past few decades. In addition to hunger strikes, there have been dharnas and protests by different groups. In 2018, farmers that were part of the Bundelkhand Kisan Union held protests at the Banda railway station demanding a separate state. Organizations such as the Raja Bundela Bundelkhand Congress, Jan Kranti party, Rashtriya Lok Manch and Peace Party have all supported a separate state (PTI, 2018).

Also in 2018, the Bundeli Sena, a group made of laborers and farmers, went on a hunger strike for weeks. They were demanding a separate state of Bundelkhand. Their reasoning is that a separate state is necessary for better administration and decreasing corruption. The current states of UP and MP are too vast, both in terms of population and area; lawmakers and politicians sit in Lucknow and Bhopal, far removed from the problems of vulnerable areas such as Bundelkhand. Another concern is that big corporations are extracting money and resources from the area, supported by corrupt politicians. A state government of Bundelkhand would be able to prioritize the needs of the region. Amit Kumar Sharma, a member of the Sena, has expressed the belief that Bundelkhand needs its own universities, medical colleges, and other facilities- the development of which could only take place if Bundelkhand were a separate state (Khabar Lahariya, 2018).

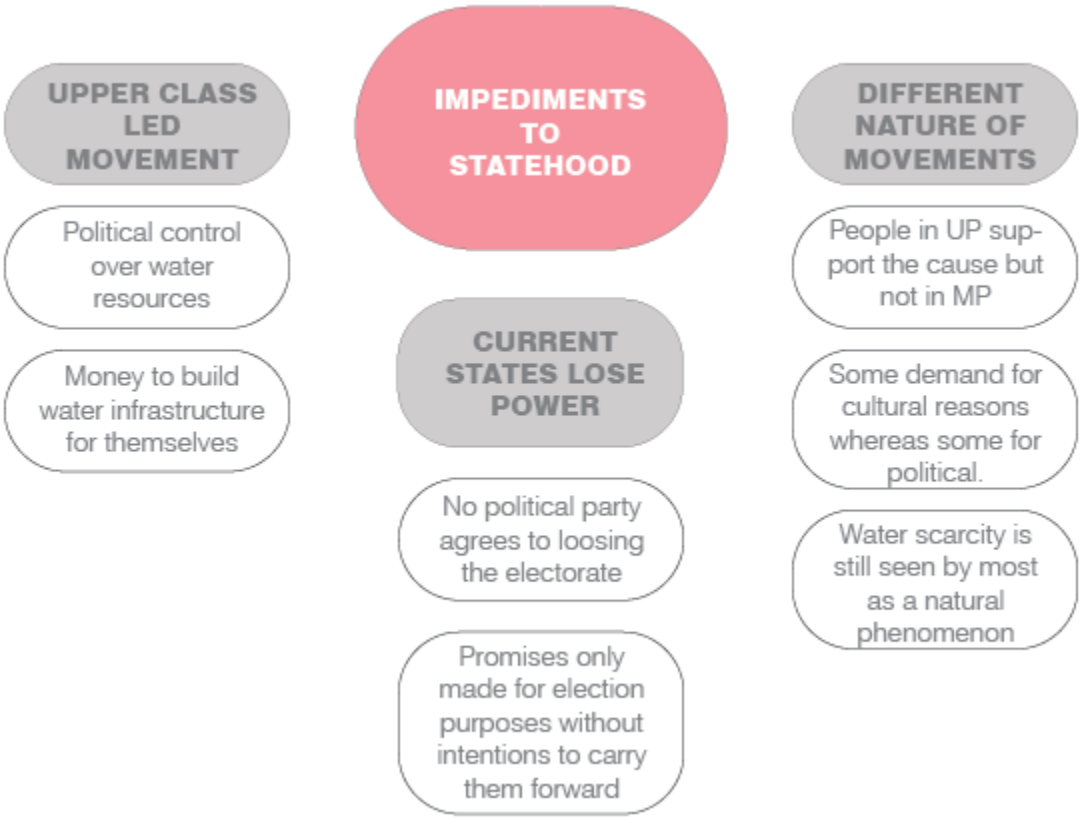
In his analysis of the Bundelkhand Mukti Andolan, or the Liberation Movement of Bundelkhand, Sibansu Mukhopadhyay (2007) points out that the statehood movement is led by "technical intelligentsia". Muckhopadhyay interviewed the president of the BMM, Sankarlal Malhotra, about the need for a separate state of Bundelkhand. Malhotra claimed that Bundelkhand needed "autonomy for education and language planning, autonomy for economic justice". He points to the distinct cultural identity of Bundelkhand and the need for a state based on this cultural identity that would be able to direct development of the state. He said that since states in India were historically formed based on language, Bundelkhand has precedent to claim its own state (Mukhopadhyay, 2007). This cultural/linguistic identity is based on the fact that Bundeli (or Bundelkhandi), a dialect in the Western Hindi, is the main language spoken, and that the region has a documented history that stretches from at least the 10th century (Jain, 2002:3).

It is clear that leaders are linking economic discrimination and inequality in Bundelkhand to the fact that, because their region has a separate cultural/linguistic identity than the parent state, they are being ignored. The most powerful campaign to call for a separate state so far was launched in 2012 by a film artist, Raja Bundela, who founded the Bundelkhand Congress Party (FPJ, 2019). He previously founded the Bundelkhand Mukti Morcha, which organized a 300-km "Statehood Awareness March" through districts in Bundelkhand in 2009. The same year, the Bundelkhand Ekikrit Party announced a campaign in which people would sign for a separate state in blood (Jaiswal, 2009). Since then, a major drive behind the demand for a separate state has been the extensive corruption associated with the Bundelkhand package.

Kumar (2010) analyzes the measures that should be considered should any region want to become a state. He recommends that the creation of states should be based on needs for improved development, decentralization and governance rather than religion, caste or language. This seems to support the idea that Bundelkhand should become a separate state, as it would potentially have better democratic governance, accountability, and responsiveness to local needs. He points out that newly created states in India often have higher growth rates than their parent states.

It is clear that community leaders in Bundelkhand are aware of the major economic and political, problems that that region faces. The corruption associated with the Bundelkhand package, which promised to significantly improve the situation, exposed many of these issues. Dozens of groups from across the region call for a separate state of Bundelkhand, believing that it is the only answer to the neglect it faces from its parent states of UP and MP. However, it is noteworthy that these

movements do not directly address the problem of water insecurity and drought. This will be discussed in the next section.



5.3 Drought and Water Management in a Separate State

It is possible hypothesize on the reasons behind the glaring lack of discussion on water issues in these movements for a separate state of Bundelkhand. One reason might be that the leaders of these movements are generally from upper classes, and seem to be largely made up of men. As discussed in the previous chapter, upper caste men do not face water scarcity to the extent that the rest of the population does. They have the resources to build borewells and take over other public water infrastructure to meet their domestic and irrigation needs. Moreover, they are able to manipulate government programs and personnel to channel resources directly to them. Therefore, water scarcity does not pose as much of a problem as the general lack of economic and political opportunity in the region.

Another reason for the absence of water issues within these movements could be that drought and water scarcity are seen as natural phenomena, rather than an accumulation of decades of watershed mismanagement. Therefore, although the government has the responsibility of guiding the response to this crisis, the crisis itself is not seen as the government's fault. Therefore, these movements might see the solution as advocating for more political and economic autonomy, rather than improving watershed management.

The creation of a separate state, however, does have the potential to reform watershed management. For one, the government could create a holistic management plan to encompass all districts in Bundelkhand. Since water is state subject, the entire region would be under the same laws, share the same agenda, and be in charge of the same finances. This would make it easier to govern. The smaller size of Bundelkhand, as compared to either MP or UP, would also make planning easier.

Secondly, it is the state government that is in charge of the level of decentralization that takes place, and the various roles and responsibilities of different levels of government. A newly created state of Bundelkhand has the potential to reform governance to make it more responsive to the needs of its residents. By devolving both decision making authority and financial resources to the block or gram panchayat, combined with strong monitoring, accountability, and evaluation mechanisms as well as technical expertise, major improvements could be made in watershed management.

Finally, if Bundelkhand were a separate state, it would be able to work directly with the central government for financial assistance and other resources in times of emergency or crisis. The Bundelkhand Package had to travel through the centers of two different states before going to the districts that needed it. As its own state, Bundelkhand would be able to plan for the needs of the districts directly with the central government. It would also have the authority to negotiate water sharing needs with other states.

There is, of course, there is the very real possibility that a new state of Bundelkhand is created but reproduces all the same problems found in UP and MP today. The potential of it becoming a progressive state that incorporates the changes outlined above would necessitate strong political will and a clear sense of the goals the new state hopes to achieve. This might be helped with strong civil society involvement. However, the current political situation at the state and center level means that the creation of a separate state might not be feasible at the moment.

5.4 Feasibility of Separate State

Mawdsley (2002) points out that, historically, political parties in India have tended to oppose the formation of new states. Until the mid-90s, central governments viewed separatist movements as parochial, chauvinist, and anti-national. However, over the last few decades, territorial reorganization started to be proposed on the grounds of administrative efficiency rather than the language principle, de-linking development and cultural affiliation. In the early 2000s, the creation of the states of Uttrakhand, Jharkhand and Chhattisgarh were formed based on these newer principles. Unlike previous regional claims, these mobilizations were directed against the parent state, which was identified as the "primary site of neglect" rather than the central government. Regional groups were pushing for greater access to political power and control over the government purse, not cultural or linguistic separation" (Mawdsley, 42).

Once separatist movements moved their focus from the central government to the state government, the center began to extend its support for movements based on whether it was politically expedient at the time. Mawdsley (2002) argues that most parties were not motivated by

administrative efficiency or improved democratic transparency, but rather electoral benefits. For instance, in the elections of September and October of 1999, the BJP won more seats than it had before but remained vulnerable to the demands from coalition partners. A few seats gained or lost would determine who held power in the center. By supporting separatist movements, the BJP would be able to increase the number of seats it held. New state governments and its MPs would inevitably support the party that granted its demands for statehood (Mawdsley, 48-9).

During election times, politicians have often promised to grant statehood to Bundelkhand. Prior to the 2014 general elections, BJP MP Uma Bharti promised that, if the BJP were to come to power, the government would start the process of establishing a separate state within a few months. However, there is little indication that the BJP government has taken steps to fulfill this promise after coming to power (Khabar Lahariya, 2018). In an interview, Bharti mentioned that, while people living in the UP region of Bundelkhand wanted a separate state, people living in the MP region of Bundelkhand did not. She claimed that this had to do with the development that had taken place in MP since the BJP came into power there a decade ago. Bharti claimed that, given these circumstances, it would be very difficult to create a separate state of Bundelkhand as the part of Bundelkhand in UP was too small to form its own state (PTI, 2017). However, there have been multiple incidents where the BJP has supported separatist demands; it carved out Uttrakhand, Jharkhand and Chhattisgarh from UP, Bihar, and MP respectively (PTI, 2018).

In 2007, former Chief Minister Mayawati also supported the demand while she was running for election (ANI News, 2018). The Bahujan Samaj Party, which Mayawati led, believed that smaller states could be governed better, leading to more development and a better law and order situation. When it came to power in 2007, the BSP adopted a resolution in the Assembly that would not only bring about a separate state of Bundelkhand, but also carve UP into three other regions: Harit Pradesh (western UP), Poorvanchal (eastern UP), and Awadh. Both the BJP and Congress supported the resolution, but when Mayawati lost power in 2012 it was neglected. Since independence, constant changes in chief ministers have led to the subsequent reshuffling of policies, priorities, and bureaucrats. UP, for instance, has had 33 terms of chief ministers, with 21 leaders enjoying an average of 1.9 years in power (Krishnan and Sen, 2019).

At this time, however, it does not seem that the central government or state governments have enough reason to support a separate state. Currently, the BJP makes up 303 out of 545 seats in the central government, much higher than the second-biggest party, the INC, which only has 52 seats. If Mawdsley (2002) is right in believing that a thin majority is what is needed for a party to support separatist movements, the current circumstances are not ideal for those advocating for a separate state of Bundelkhand. The BJP, with such a strong majority, does not need to pull any other states into their fold to ensure their hold on power. It is also worth noting that a separate state of Bundelkhand would mean not only the secession of parts of UP and MP but also their eventual union. This might mean that the same party needs to be in power for both UP and MP. Currently, the BJP controls UP while the INC has power in MP.

Verma (2011) states that a separate state is not the solution for Bundelkhand. While the Uttar Pradesh and Madhya Pradesh governments have largely neglected Bundelkhand, the people who have voiced support for a separate state are doing so for political purposes to further their own elite interests rather than concern for the region. A small Bundelkhand state, he says, may face boundary

and river-water sharing problems with UP and MP, as well as being "politically unmanageable, economically fragile, and socially divided between the people of UP and MP". However, Verma does not discuss how the situation, if it stays as it is, could be improved and how the two states can be pushed to pay greater attention to the needs of Bundelkhand.

It is clear that an underlying perception of economic discrimination and inequality, as described by McHenry as an essential part of a separatist movement's identity, is there. It is unclear, however, how much this sentiment is present through different strata of society. If this perception is purely tied to regional elites, people may not have a durable commitment to the possibility of separation. If it does become a mass movement, there is more possibility that political leaders will find it expedient to grant statehood. Currently, the protesters are using the same arguments to advocate for statehood, such as the enhancement of administrative efficiency and political representation, that successful separatist movements had in the past.

In the next chapter, we will draw together our findings to outline a series of insights and recommendations that we believe could improve the situation in Bundelkhand, and explore whether a separate state of Bundelkhand would be better able to carry out reforms.

Chapter 6: Recommendations and Conclusion

This thesis has detailed the problems with water management and planning in Bundelkhand. We have looked at approaches of all levels of government, from the center down to the village. Governance is currently too fragmented, and at the same time, too centralized, for long-term water planning to be carried out. The Panchayati Raj institutions, from the district to the village, suffer from unclear mandates, a lack of accountability, and the general paucity of government capacity. Given the ineffectiveness and absence of government, strong feudal relations continue to undergird existing caste, class and gender hierarchies at the local level.

Droughts will only continue to increase in frequency unless radical reforms are instituted. These reforms must include decentralization, a move towards long-term watershed planning, and a pragmatic take on incentive- and pressure- based planning that ensures politicians, bureaucrats, and civil society have the capacity to work on water-related issues, and are motivated to act in a manner that not only benefits them, but also works towards improving the water crisis in Bundelkhand. In this chapter, we will be outlining the main recommendations we believe will help improve water management and planning in Bundelkhand.

6.1 Problem Framing

In all the reports that exist on Bundelkhand and improving water scarcity, whether they are written by government agencies, state-affiliated research organizations, private research organizations, NGOs, or academics, there has been a striking paucity of analysis on governance reform. Most recommendations focus on technical solutions, but there has been no discussion on how these solutions can actually be carried out, given the current governance and planning dynamics in place.

In order to fill this gap, this thesis and the recommendations outlined below draw extensively on the findings of public choice theory, which looks at the actions of politicians and bureaucrats through the lens of motivation. We believe that it is essential to understand the pressures and incentives that need to be put in place to ensure that personnel in the public sector are not only able, but willing, to carry out the reforms necessary for improved water planning and governance. The abject failure of the Bundelkhand Package demonstrates the need for a serious investigation of the roles and responsibilities of different levels of government.

This need for pragmatism in planning has been emphasized by practitioners across multiple fields, such as John Dewey and Donald Schon. Professionals need to be able to work in a messy, changing environment, and adapt policies and governance according to circumstances. Bhimrao Ambedkar, one of India's greatest social reformers and writer of the country's constitution, was heavily influenced by Dewey's ideas. This was evident in his exploration the use of force, violence, and the relation of ends and means in the activities of reform and social change. Rather than use all-encompassing theories that assume a permanence of value or positionality, either with the public sector or civil society, the pragmatic approach tries to identify the singular characteristics of each situation and work with them to bring about the best results. This is what we have tried to do in this thesis.

We believe that these roles and responsibilities of each level of government should not be confined to the myopic dichotomy of top-down or bottom-up governance. The central, state, and local governments are all essential to managing the water crisis, and their functions must be molded according to each level's abilities and the particular circumstances of this issue. Therefore, our recommendations outline the ways in which different levels of government can work together and support each other, as well as suggest possible checks and balances that would increase accountability. We also look at ways government personnel and civil society can build their capacity, both in terms of expertise, resources, and funds.

Finally, we believe that there needs to be a significant shift in the government's approach to the water crisis in Bundelkhand. Until now, the crisis-response mentality has driven both central and state initiatives, and has resulted in dozens of short-term schemes and packages. Plans are drawn up for immediate relief to drought, projects are implemented haphazardly and without the engagement or input of people, and outputs suffer from a lack of maintenance, monitoring, or evaluation. The situation remains as it had been. Instead, we advocate for a shift towards long-term planning for watershed development, which envisions sustainable and continuous improvement of water management. And to initiate that shift, drought management must be an integral part of the future water policies and not just of the policies on disaster management.

6.2 Decentralization from the National to Local Level

Decentralization- financial, administrative, and political- has been discussed as a way to improve governance for at least the last three decades. Much of the focus has been on the Principle of Subsidiary, which posits that the lowest or least centralized authority that is capable of addressing an issue should do so. The Indian government, with the 73rd and 74th constitutional amendments, has formally supported decentralization efforts through the creation of Panchayati Raj institutions. However, in most of India, a true decentralization of power has yet to take place. Higher levels of government have been reluctant to give up authority, and Panchayati Raj institutions are tasked mainly with carrying out orders dictated by the state or central government. Governance in India remains highly centralized.

In her analysis on forest management in India and Nepal, Ostrom and Agarwal (2001), believe that decentralization is absolutely essential to sustainable resource management:

"A major problem in trying to devise management rules for an entire country from a central governmental office is that the characteristics of diverse ecological zones in a country can vary dramatically. The effectiveness of management depends on an enormous number and range of variables that centralized decision making simply cannot take into account. The importance of local knowledge has been ignored in much of the forest policy of developing countries." (Ostrom and Agarwal, 2001: 490)

However, much of the fear when it comes to decentralization in India, which Ostrom and Agarwal do not delve into, is that local elites will capture power and use it to advance their own interests and suppress or exploit vulnerable groups. The "community" is often not a homogenous entity with common goals. In the case of Bundelkhand, the social hierarchies of caste, class, and gender

play a significant role in dictating the dynamics of villages. There are also other issues with decentralization, including lack of expertise and accountability.

As Satyajit Singh, in his paper titled 'Decentralizing Water Services in India' states, *"The large-scale management of RWS requires enormous capacity development among local communities and local governments to ensure they can handle the varied issues involved with community management of water supply. Handing over operation and management to local communities without linking this arrangement to the fiscal and institutional capacity of local governments is fraught with risks."* (Singh, 2014:698)

True decentralization must be supported by consolidation of power into large group of agencies and ministries at the national and state level. As seen in the previous chapters, coordination between the national level agencies itself is a mammoth task, which delays on ground monitoring, planning and implementation. One way to deal with this issue would be to group similar agencies into one and form manageable set of groups within the ministry of Jal Shakti. This will reduce coordination and time taken to plan and implement projects.

CK Agarwal (2014), in his extensive analysis of the possibilities of decentralization in South Asia, has outlined conditions that need to be in place to "avert the dangers of decentralization":

1. Social Preparedness and Mechanisms to Prevent Elite Capture
2. Strong Administrative and Technical Capacity at the Higher Levels
3. Strong Political Commitment at the Higher Levels
4. Sustained Initiatives for Capacity-Building at the Local Level
5. Strong Legal Framework for Transparency and Accountability
6. Transformation of Local Government Organizations into High Performing Organizations
7. Appropriate Reasons to Decentralize: Intentions Matter
8. Effective Judicial System, Citizens' Oversight and Anticorruption Bodies to prevent Decentralization of Corruption

These are conditions that we are incorporating into our recommendations to try to ensure that decentralization, which we believe should be carried out, can actually have meaningful impacts. This will help to prevent deconcentration of power but ensure true decentralization through devolution of authority, power, finances and other resources to the local level. In the following sections, we will be outlining the new roles and responsibilities for each level of government.

6.3 Reform at the State Level

In 2019, the central government created the Jal Shakti ministry, which brought together the ministries that dealt with the management of water resources and provision of drinking water and sanitation. While irrigation and drought are still under the purview of different ministries, the central government has taken a necessary step towards improving the cohesiveness of water management. The same step should also be taken at the state level, where plans related to water management are still fragmented. Irrigation, drinking water and sanitation, water resource management, and drought response are planned by different agencies, each of whom have their

own plans for surface and groundwater usage. This has resulted in overlapping mandates, inefficiency, and mismanagement.

We believe the state should bring together relevant agencies so that a coordinated response is possible. This state-level Jal Shakti could be staffed with bureaucrats, as well as experts in water management and provision and civil society leaders. This is essential for long-term planning, so that change in political dynamics will not result in significant change in personnel. The state-level Jal Shakti could be in charge of information gathering and dissemination. One part of the data could be the collation of scientific and technical aspects of water management (rainfall, water levels, irrigation facilities, etc), collected by the agency itself, different levels of government, universities, or NGOs. Once brought together, this information should be open to the public and available to any public or private entity that needs it. Other data that could be collected is progress of blocks and districts in improving watershed planning over time. This state-level Jal Shakti would give primacy to the irrigation sector, which consumes the majority of water and is the main cause of the rapidly sinking water table in the region.

The state government could also be in charge of drawing up specific goals for the state to accomplish. Currently, policies and guiding documents on water management and provision are vague and idealistic, and rarely provide much useful information for public sector employees. Instead of focusing solely on what *should* be done, we believe that the state can play a key role in outlining what *needs* to be done and *how* it can be done. In this management approach, rather than simply saying that "groundwater needs to be protected", the state government should set goals such as "25% of people who relied on groundwater for irrigation and domestic use should have shifted to the utilization of water from rainwater harvesting structures by 2025". By setting targets and communicating these to lower levels of government, the state can demonstrate its commitment to better water management and hold the public sector accountable, while leaving the actual planning and implementation to the local level. It could also play an important role in building a database for the different types of drought (meterological, hydrological, and agricultural) to inform best practices.

Currently, the main roadblock for moving towards integrated and long-term sustainable water management is that states are incentivized to tackle the water crisis through short-term crisis response. By waiting until the situation becomes bad enough to be called a drought, and then turning to the central government for funds, the state government benefits from a one-time large inflow of cash, politicians can show that they are being active, and there is no need to change existing policies or governance. Simply put, it is easy, quick, and lends credence to politicians in power. These same incentives are present at the central government level as well. This means that long-term water management planning suffers. A state-level Jal Shakti has the potential to reorient the state government's attitude towards water management, especially if it has strong political support from the center. Its creation also presents an opportunity to politicians who want to appeal to voters.

The possibility of reform at the state level would, of course, be much stronger if Bundelkhand were to become its own state. Reform at the district and block levels, described below, would also be more likely.

6.4 Reform at the District Level (Zila Parishad)

The district level is, on paper, key to planning drought response and long-term water management. However, it has been unable to do so successfully for a number of reasons. The biggest one is that each district in Bundelkhand contains populations of up to two million people- something that an understaffed office, headed by the single District Collector- can simply not manage. The area of each district is also huge, and it is impossible for a single district office to intimately know the problems of each village. Yet, each DC is assigned not only with the collection of revenue, the implementation of development programs, and the enforcement of law and order, he/she is also called upon to settle land or family disputes. This is an impossibly large task, especially in an underdeveloped area with poor connectivity.

We believe, at least in water management, the role of the DC should be limited to data gathering and dissemination, communication of important policies or schemes, monitoring and evaluation, and facilitating the coordination between blocks, and emergency response. For example, the district could bring together blocks for better watershed-level planning. The district should not be in charge of planning and implementation of long-term water management, which should be under the purview of block-level offices. These roles should be clearly defined and laid out, to counter any confusion within the district office and among the people that the DC is serving. These changes can really only be brought about, however, if reform on the state level takes place. It is only if the state agrees to decentralize that districts can follow suit.

This raises the important question of the conditions under which states would choose to decentralize power in the first place. Ostrom and Agarwal (2001) explore the question in their paper, saying that "it remains unclear why central government actors, known for their pursuit of power, should initiate actions to take power away from themselves (Agarwal and Ostrom, 486). They conclude by stating that "decentralization of power and decision making is likely when some central political actors find that decentralization makes it possible to reduce costs/improve revenue, deflect blame, or extend state further into social processes (Agarwal and Ostrom, 488). It is unlikely that better water management would directly lead to an increase in revenue for the state, and the extension of the state into social processes is the outcome we hope to avoid. Perhaps, then, the state government, and, in turn, the district government, can be persuaded to "deflect blame" of improper water management and planning by re-allocating responsibility to lower levels of government.

At the same time, the District Disaster Management Authority (DDMA), which is a body tasked with disaster response at the district level, could be empowered. Currently, the DDMA is made up of a dozen or so bureaucrats, many of them engineers. As seen with the implementation of the Bundelkhand Package, disaster response at the district level needs to undergo some serious improvements. When a drought is declared, the resources that the central and state government allocate to tackle the crisis have to be carried out responsibly, efficiently, and quickly. Coordination, monitoring and evaluation mechanisms have to already be in place. The DDMA could improve its response by carrying out pre-disaster planning, strengthening networks with local leaders, and formalizing partnerships with NGOs to carry out tasks. Its main task, however, should be helping to build implementation capacity at the block level, which can only happen if that level of governance also undergoes reforms.

6.5 Reform at Block-Level (Panchayti Samiti)

The NIDM states that:

"Since the drought risk and vulnerability factors are associated with the land, ecological features and social settings at local level, *planning for drought proofing need to be scaled down at least to the Block level*. Ideal and desirable unit of such comprehensive assessment and planning needs to be the Panchayat or a village. The serious concern needs to be drawn to the local level policymaking and capacity development for understanding the risk and delineate the counter strategies. National policies can provide wider and broader framework of approach, whereas it is the regional and local process that will generate the field level wisdom for evolving area- specific approach to drought risk and vulnerability reduction" (NIDM, 110-1).

Uttar Pradesh's Groundwater Bill (2017), seemingly based on the central government's model bill, outlines a bottom-up strategy for block panchayats to determine their own water security plan, which would then feed into the district and state groundwater security plan. However, this has not been carried out. There seems to be a discrepancy between what the government says its approach is and its actual planning and implementation of drought risk reduction. However, it is a positive sign that the state recognizes that that block level should be the main actor in planning the management of groundwater.

If reforms are carried out at the state and district level, the BDO will no longer have to walk the difficult line of trying to carry out both the decisions of higher levels of government and those of the Panchayati Samiti (PS). If decentralization were to take place, and planning decisions were to take place at the block level, the BDO would have a more ability to work with the PS to carry out development programs that are suited to the area. Meanwhile, the PS would be less dependent on the BDO for direction, which seems necessary if the BDO is so frequently replaced. Generally, however, it would be beneficial for BDOs to stay for at least five years to maintain some level of continuity. It also seems necessary to provide BDOs with some avenue for promotion (to District Planning Officers or Deputy and Assistant Development Commissioner, for example), which would incentive them to do good work.

Moving to the issue of water management, there seems to be a lack of trained personnel on the block level that has the authority and expertise to carry out watershed planning and management. There needs to be a serious emphasis on capacity building at this level. We recommend that each block in Bundelkhand, which is made up of 100-150 villages, recruits permanent employees that focus solely on water management. These employees could be recruited from the area, to ensure stability of the position and build local capacity, and then be sent for a training course at the Jal Shakti on the state level. In these training courses, which could be held for a month every year, recruits could exchange information, build connections, and share findings with each other. They would also be able to understand the functioning and goals of the Jal Shakti. At the block level, they could be responsible for carrying out joint-fact finding in villages with an NGO partner, conducting a scientific analysis of the watershed, and working with villagers to carry out projects and draw up a system of monitoring, managing, and maintenance.

For this to work, there needs to be a great deal of publicity about these block-level personnel so that villagers know they exist; information needs to flow well from the district-level down to the local level. Information about funding is especially important, so that people know how much money is being utilized and how. Much of the literature on decentralization states that it is essential that funding also be the purview of local-level institutions. Currently, most of the funds come from the state, which dictates how it can be used. We recommend that funds be allocated for water management and planning, without controlling its exact uses, to the block level. There is also the possibility that, once water infrastructure is developed, users pay fees that directly go into maintenance. This might increase the sense of ownership over this infrastructure, and motivate villages to help sustain them. For any level of financial decentralization, there would need to be strong monitoring and evaluation, which could be carried out by the district and by NGOs.

6.6 A New Approach

In all the recommendations outlined above, there has to be a continued emphasis on trying to understand how to incorporate incentives so that government employees are motivated to improve water management and planning. Good work should be recognized and rewarded. People must be held accountable if they are engaging in corruption or mismanagement. A strong system of accountability, monitoring and evaluation is essential, and should be the focus of all levels of government. Politicians should be incentivized by the central and state governments to carry out work that will reflect well on the political party. They can, in turn, encourage bureaucrats to carry out tasks well. There should be a performance-based system for assessing and promoting local leaders, encouraging competition between them.

These reforms can only be carried out if there is a marked change in behavior; the status quo has been carrying on for far too long now. One way to draw attention back to the situation in Bundelkhand, and keep it there, is to declare Bundelkhand a Special Water Zone (SWZ). Like an SEZ, it would be an area that would attract attention, funds and expertise. Bureaucrats and politicians working in the SWZ would be granted a new level of prestige. It would be an opportunity for political parties to demonstrate that they are making big changes and to attach their names to affiliated programs. It would be a radical move, but one that UP and MP could be motivated to take on, given enough pressure from the central government and civil society. After all, they would not have much to lose.

NGOs and CBOs will have to play a very important in this zone. The government must include them and leverage their extensive network to first building knowledge of water scarcity and ways to mitigate it. About various systems and finals about the SWZ. Once this foundational fabric is laid, only then the SWZ must be declared. Once declared NGOs, CBOs can be the official representative of the people to ensure effective implementation of schemes and empower them to hold the government officials accountable. One of the ways would be to increase knowledge and awareness about the RTI act, its powers, functions and procedures.

It is important to ask whether, if Bundelkhand were a separate state, it would be able to take on such reforms and carry them out better than UP and MP could individually. There is a possibility

that this would be the case. For one, since water is a state subject, Bundelkhand, as a separate state, would be able to completely change its approach from crisis-driven to long-term development without having to navigate the complex and entrenched political dynamic present in UP and MP. Secondly, since it is the state that determines that level of decentralization, Bundelkhand as a separate state would have the freedom to completely reform governance and implement measures of decentralization with relative ease.

As a separate state, the same laws would govern the entire region of Bundelkhand, allowing for a cohesive approach to water management and planning. It would also improve information sharing and collaboration between MP and UP. More generally, Bundelkhand would be able to advocate for its fair share of water resources, as it would represent its own interests while negotiating water treaties with other states. On the flip side, its weaker position as compared to other states might be to its disadvantage.

There is the possibility, therefore, that Bundelkhand becoming a separate state would improve water management and planning. However, it is clear that, currently, the movements advocating for a separate state are not focusing on the type of state they would like to live in afterwards. To our knowledge, no organization has drawn up cohesive plans that detail changes in development strategies, whether regarding water or other issues such as health, education, or agriculture. We argue that for a separate state to truly make a difference to that majority of people, there needs to be a serious attempt by movements, civil society, experts, and sympathetic government officials to outline a series of reforms that will get implemented. Otherwise, there is a high possibility that the status quo will remain unchanged.

Ostrom and Agarwal (2001) state that, for decentralization to occur,

"the support of some central state political actor may be essential, but for long-term success, it is as important to examine how local-level politics articulates with decentralization reforms...local mobilization is critical...the trick for advocates of decentralization, therefore, is to align the interests of powerful decision makers who make policy choices with organization and mobilization of local actors who can create additional pressures in favor of reforms" (Ostrom and Agarwal, 488)

They go on to say that:

"Local groups do actively have to pursue opportunities opened up by decentralization reforms, or else they are likely to find that decentralization has been retracted or discover that their rights are greatly limited by active interventions of more powerful officials" (Ostrom and Agarwal, 507)

Not only is local mobilization critical to bringing about reforms, they have to be sustained for the reforms to stay in place. It might be more pragmatic in the current political climate, where a separate state seems unlikely, if the movements advocating for a state in Bundelkhand were able to shift their focus to decentralization reforms that would bring them more autonomy instead of a separate state. However, it is also unlikely that UP and MP will choose to carry out governance reforms only in Bundelkhand, as it might be too difficult for either state to navigate between two completely different approaches to governance. The choice of whether to advocate for in-state

reforms or for a separate state will depend on the particular social, political and economic circumstances. It might be less difficult for civil society to push the government to adopt long-term watershed planning rather than crisis response, but it is difficult to see how it could be adopted given the current structuring of government.

6.7 Conclusion

Bundelkhand has struggled with water management for many decades now. Droughts are taking place with increasing ferocity, while surface and groundwater is being depleted at an astonishing rate. The government announces packages when the region declares a crisis, and spends the majority of the funds building infrastructure that further depletes water sources. This is despite various policies, reports and bills calling for drought mitigation by involving communities, integrating efforts into long-term development programs, and utilizing more sustainable planning practices. Meanwhile, communities in the region are too fragmented by caste, class, gender and feudal relations to self-organize.

Climate change has brought about major changes in the region's seasonal patterns of precipitation, agriculture, and land development. Droughts will only continue to increase in frequency unless radical reforms are instituted. These reforms must include decentralization, a move towards long-term watershed planning, and a pragmatic take on incentive-based planning that ensures politicians, bureaucrats, and civil society have the capacity to work on water-related issues, and are motivated to act in a manner that not only benefits them, but also works towards improving the water crisis in Bundelkhand.

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