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The Monsoon and the Market:

Economies of Risk in Rural India

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Doctor of Philosophy in Anthropology

by

Tanya Ruth Matthan

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ABSTRACT OF THE DISSERTATION

The Monsoon and the Market: Economies of Risk in Rural India

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Professor Akhil Gupta, Chair

This dissertation examines the social and material life of uncertainty in rural India. Specifically, I examine how cultivators apprehend, manage, and capitalize on the endemic and emerging risks of agriculture in villages of central India. While farmers have always been exposed to the vagaries of climate and market, the emerging uncertainties of anthropogenic climate change and liberalized agri-commodity trade have transformed agriculture into a gamble on the monsoon and the market. Theorizing agriculture as an increasingly speculative enterprise, this dissertation outlines the material and imaginative work this entails, its differentiation across key axes of social inequality, and entanglements with kinship and ritual, patronage and policy, and hierarchy and obligation. Rather than view agriculture through an undifferentiated lens of crisis, decline and nostalgia, this dissertation foregrounds the ways that cultivators forge uneven futures within a changing rural landscape.

This question of how agrarian risk is shaped by broader political-economic, cultural and environmental processes is grounded in an ethnographic study of everyday agricultural decisions and practices in Malwa, a predominantly agricultural region in western Madhya Pradesh, which

has witnessed rapid agrarian transformations over the last two decades. The region's agricultural growth has been significant, particularly through the cultivation of high-risk, high-value horticultural crops. At the same time, the state government has also been at the forefront of adopting and implementing policies of risk-management, from yield-index insurance to price-support schemes. Against this backdrop, I trace the emergence of moral and political economies of risk and responsibility across five key sites: the monsoon rain, insurance claims, market speculation, groundwater extraction, and caste distinction.

I argue that ideologies of risk have become deeply entrenched in the countryside, tied to legacies of the Green Revolution technology, neoliberal agricultural and an emerging ethic of entrepreneurialism. Across these sites, I show how farmers deploy both religious and secular vocabularies of risk, fate, and destiny to apprehend uncertainty, grapple with the past, and act on the future. Ultimately, I demonstrate how state policies that aim to manage risk actually exacerbate uncertainties and heighten existing inequalities in the countryside, even as they offer novel spaces for capital accumulation, social mobility and political claim-making in the countryside.

The dissertation of Tanya Ruth Matthan is approved.

Hannah C. Appel

Jessica R. Cattelino

Eric Stewart Sheppard

Akhil Gupta, Committee Chair

University of California, Los Angeles

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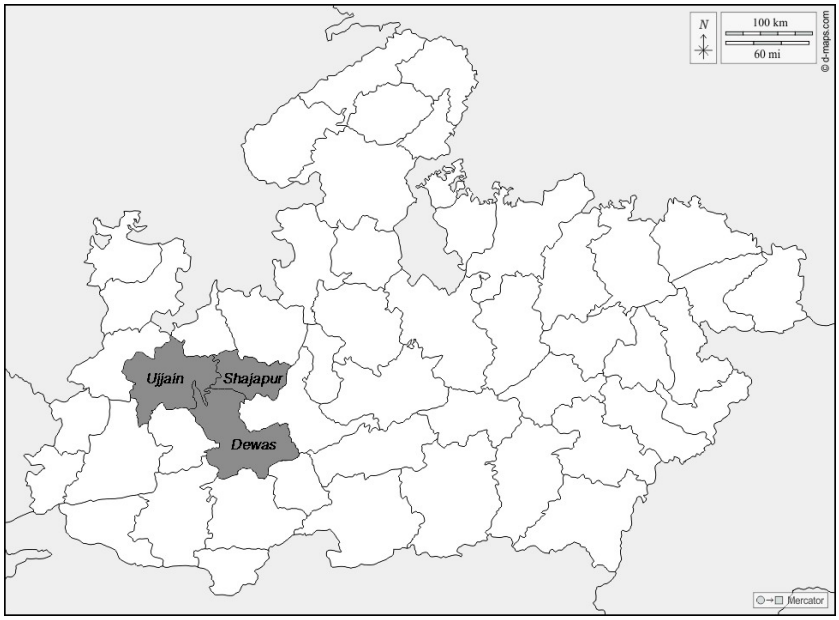

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Vita

Education

2013 MPhil. Sociology, Delhi School of Economics, University of Delhi

2010 M.A. Sociology, Delhi School of Economics, University of Delhi

2008 B.A. Journalism (Hons.), Lady Shri Ram College for Women, University of Delhi

Publications

In prep. "The Humble Bulb: Onion as a Speculative Crop in Rural India." Special Issue on 'Political Ecology of Crops: From State to Seed and Capital', *Geoforum*

2021. *Cultivating Knowledge: Biotechnology, Sustainability and the Human Cost of Cotton Capitalism in India* by Andrew Flachs. *Agricultural History,* 95(2): 404-406.

2020. Book Symposium: *Tasting Qualities: The Past and Future of Tea* by Sarah Besky. Allegra Lab.

2020. "Resource Politics and Entangled Lives in Extraction Zones: Review Essay", *Political and Legal Anthropology Review*, Sept. 14.

2019. "Fluid Assemblages." In Helga Leitner, Eric Sheppard, and Jamie Peck (eds.) *Urban Studies Inside Out: Theory, Method, Practice*. London: Sage, pp. 91-100. (co-authored with Emma Colven and Hudson Spivey)

2019. "Keyword: Infrastructure". In Helga Leitner, Eric Sheppard, and Jamie Peck (eds.) *Urban Studies Inside Out: Theory, Method, Practice*. London: Sage

Fellowships and Awards

2020-21 Dissertation Year Fellowship, UCLA

2020-21 Collegium of Teaching Fellows Program Fellowship, UCLA

2018-19 Dissertation Fieldwork Grant, Wenner-Gren Foundation for Anthropological Research

2018 International Institute Dissertation Fieldwork Fellowship, UCLA

2018 Graduate Summer Research Mentorship, Graduate Division, UCLA

2016 Graduate Student Working Group Fellowship, UCLA Institute on Inequality and Democracy, Luskin School of Public Affairs

2015-17 Dean's Scholar Award, UCLA

Conference Presentations (selected)

2021. "Hydrology is Destiny: Fate, Fortune, and Groundwater Possibilities in Rural India", Yale Inter-Asia Water(s) Conference.

2021. "The Onion Assemblage: Infrastructures of Hope and Abandonment", Association of Social Anthropologists of the UK.

2021. "Placing the Subterranean: Groundwater Possibilities in Rural India", Penn Envirolab Virtual Graduate Conference, University of Pennsylvania.

2021. "Valuing Loss: Index Insurance and the Calculation of Crop Yield in Rural India", Landscapes of Value/Economies of Place, Society for Economic Anthropology conference.

2021. "Political Ecology of the Onion in Rural India", Dimensions of Political Ecology (DOPE) conference, University of Kentucky.

2020. "The Politics of Price: Onion as Speculative Crop in Rural India", Political Ecology Network (POLLEN) annual conference,

2020. "Insuring Adaptation: Financial Geographies of Weather-risk Insurance in India", American Association of Geographers annual conference, Denver, CO.

2019. "Cultivating Risk: Agricultural Insurance in Central India", Frontiers of Accumulation conference, University of Copenhagen, Denmark.

2018. "The Monsoon and the Market: Economies of Risk in Rural India". Foundation for Agrarian Studies, Bangalore, India.

INTRODUCTION

0.1 A Mo(u)rning at the Market

On what we will later learn is the coldest morning of an exceptionally chilly winter season, I reluctantly haul myself out of bed at 6.30am, pulling on an extra sweater and socks, wrapping a grey shawl around my head before heading out into the misty morning in search of Pyarelal Kumar's (potter caste) home. While helping him and his wife, Shanti, cut, sort and pack their onions over the previous three days, I had insisted on accompanying him to the *mandi* (market) when he made the final sale. Shanti had gleamed as she sorted her onions, the product of several months of painstaking labor. She admired their bright pink color – like *sindoor*, she remarked, comparing its intense color to the red vermillion on the forehead of a Hindu bride. "Next year, god willing, if we can, we will put in a hole (tube-well), and then we will only do onions!", she proclaimed.

While I had visited his field several times, this is my first visit to Pyarelal's home, which I find behind a Ganesh temple and adjacent to an empty plot parked with tractors. Hot *chai* (tea) is brought in immediately and their twenty-five-year old son lights *agarbati* (incense), circling its smoke around a mantelpiece cluttered with prints and figurines of Hindu gods and goddesses. He whispers an inaudible prayer but says, "We will do a proper puja later". And then we are off. As we stacked the onions into mesh sacks the evening prior, Pyarelal and his son had arranged for transportation to the market, renting a mini-truck owned by another village resident. Now, Pyarelal, the driver and I huddle into the front seat. The window on the passenger side doesn't roll all the way up and the chilly air creeps into the vehicle. I shrink further into my shawl. The truck slowly makes its way out of the village through the mist and fog onto National Highway 3

that leads us directly to the closest *sabzi mandi* (vegetable market) in Shajapur, a small town and district capital.

Figure 1: Pyarelal sits atop his sacks of onion at the market

The market is still filling up when we reach, with about one-third of the total space is occupied by trucks and tractors, farmers and laborers carrying and offloading sacks of onions, potatoes and garlic onto platforms in preparation for the auction beginning at 9'o clock. An arhatiya (commission agent, broker) standing nearby complains over the phone, "*Aaj ki aavak aadha hai* (today's supply is half)" – perhaps this was because of the severe cold that morning or since the price had recently dropped, prompting fewer farmers to come to market. As we wait for the *boli* (open cry auction) to begin, I walk around the market area, squeezing my way through

neatly stacked sacks of produce, watching as farmers, traders and laborers huddle in twos and threes, biding their time with hot cups of tea and casual gossip. At 9, however, the mood quickly shifts: farmers head to the first auction lots, eager to know the day's opening price; traders pull out pocket books and pens to jot down their purchases and prices. The *arhatiyas* lead the way, Pied Piper-like, as they run the auction, energizing buyers (and boosting prices) with their bellowing voices and quick wit. The air is thick with anticipation, the market itself transformed into an unwieldy caravan moving methodically between and even over endless rows of neatly arranged bags of harvested crop. My first time at this market, I find it impossible to make sense of its rhythms and flows, so I simply let the crowd propel me forward.

The auction of each individual lot is over with the blink of an eye: first, the *hammal* (porter) slashes open a few sacks from each farmer's pile. As piles of onion tumble out onto the floor, the crowd of onlookers lurches backward to avoid stepping on, or more likely, tripping over, the pink bulbs. The broker examines the lot and calls out an initial price. Traders inspect the produce, occasionally squatting low to the ground and picking up a few bulbs to ascertain their quality before they decide how much to bid. With so many small lots to cover and only a handful of traders buying that day, each auction is conducted quickly. "3! 3.50! 3.90! 4!" Onto the next. Months of painstaking cultivation culminating in a few incomprehensible seconds.

I am nervous when it is Pyarelal's turn, anxious but hoping for the best. Witnessing his family's efforts and contributing to them (very minimally) myself, I feel oddly invested in the outcome. His 5 bags of small onions go for Rs. 100 per bag (roughly $1.5), and his 26 bags of larger onions sell for Rs. 511 per quintal (roughly $8). In terms of the day's average prices, Pyarelal's onions have fared quite well. The man selling right next to him has good quality onions too – they are large, round and bright pink. But strangely, his produce sells for a lower

price. Farmers standing around peer at the bulbs strewn on the ground as the *munim* (accountant) registers the price, buyer and weight in a thick hard-bound ledger. They murmur that he should have gotten at least one rupee more per kilogram.

After several hours of waiting, Pyarelal's sacks are loaded onto a large truck – his onions now indistinguishable from the dozens of sacks piled together headed north. *Ab kuch lena dena nahi hai* (Now we have nothing to do with it). We do not know where his onions will end up – most likely in a wholesale market in Delhi or Kanpur, before making its way on trucks and ships, through retailers and vendors into household and restaurant kitchens across the globe. He is given a receipt which he hands over to a man at a desk. Since it is a small amount, he is paid the full amount in cash: a grand total of Rs. 7156 (a little over $100).

Pyarelal folds the cash into the pocket of his pants. The truck driver has left on other work, so we walk in a single file to the local bus station to head back to the village. We don't talk much on the ride back, instead looking out the dusty window, grateful that the sun is out and the day is getting warmer. I want to ask what he made of the sale but I am unsure whether it is appropriate. I feel indignant – at the casualness of the auctioneer who barely glanced at the onions before calling out a price, at the arbitrariness of the entire process, at the way that months of careful cultivation boiled down to a casual price at the market. It was all too clear that farmers such as Pyarelal disproportionately bore all the risks endemic to cultivation in order to produce cheap food for the domestic and global market.

This was Pyarelal's first attempt at onion cultivation. Like many others, he had watched winter prices soar the previous year. And like them, he too had decided to plant onions this year. If prices rose again, he could, after all, stand to make a small fortune. That cold winter morning, he did not. In many ways, this moment was an imagined future lost. He – and many farmers like

him – were cast aside by the structural forces of market pressures, the inequalities of trading relationships in which farmers have little control over price of their produce, the absence of a government-guaranteed price to safeguard against market failures.[1] But to Pyarelal, it was also an act of hope and a moment of possibility. It was a disappointment, but not a crushing one. While he certainly didn't make the fortune he hoped for that morning, he did cover his costs and even made a small profit. After all, he had cultivated onions for the first time, yielded good quality bulbs, and received a reasonable price at the market. It was perhaps also the beginning of other possible futures.

Pyarelal was not the only one speculating on the future at the market that day. The trader who bought his produce, had then loaded it onto a truck headed for a larger market, where he expected it would sell for at least Rs. 2 more per kilogram. But anything could happen before it reached there. Regardless of what price he sells at there, he must still pay back the *arhatiya* (broker), who has made the initial payment to farmers like Pyarelal at the market, with interest (or 'commission'). The *arhatiya* as a key intermediary hopes that the trader will pay him within the week – but sometimes it takes longer, sometimes – as one of the arhatiya's helpers joked cheekily – it might even take a broken leg. Risk is everywhere but with radically uneven meanings and effects.

This dissertation examines the social and material life of uncertainty in agrarian India. In doing so, it heeds Arjun Appadurai's call to attend to the future as a 'cultural fact' through the study of "vernacular understandings of uncertainty, risk and forecasting as practices of everyday life" (2013: 298). It engages these understandings and practices across fields, farmers, markets

[1] I was reminded of the powerful Marathi short film, *Mandi* (2017), which follows a small onion farmer and his son to market. Based on true events, the farmer is forced to sell his 10 quintals of onion for a mere Rs. 600 rupees ($9) to an unscrupulous trader. However, subtracting for labor, taxes and transport costs, the farmer ends up having to pay the trader Rs 215.

and streets in rural Malwa, a predominantly agricultural region in central India. Agriculture, I argue, is a particularly rich site to examine questions of risk and uncertainty in the contemporary moment. While cultivators have always been exposed to the vagaries of the weather and market (see Banaji 1977, Scott 1976, Watts 1983), the emerging uncertainties of anthropogenic climate change and post-liberalization exposure to global markets have transformed agriculture into a gamble on the monsoon and the market (cf. Aga 2018). This conjunction between ecological conditions, financialization and risk has produced what Akhil Gupta (2017) calls a 'speculative climate', in which farming itself has become a speculative activity involving taking on loans and gambling on the weather and commodity prices in the hope of making a small fortune. Indeed, if agriculture is increasingly a speculative enterprise, then this dissertation addresses what this entails in the everyday lives of farmers and other key actors in the agrarian economy. What material and imaginative work is involved in this speculative practice? How is it differentiated across key axes of inequality? How do longstanding modes of engaging uncertainty intersect with emerging mechanisms of risk prediction and management, from meteorology to insurance? Or, in Appadurai's words, what are "the ways in which the sciences of anticipation today interact with the quotidian strategies and practices of future-making" (2013: 298)?

Thus, this dissertation makes several complementary contributions. First, it addresses the shifts in agrarian political economy that have produced this specific conjuncture of radical uncertainty. In other words, it situates the problem within broader historical and political-economic transformations to explicate how the always-already risky venture of agriculture is now ever-more uncertain, and with what social and ecological effects. Second, it examines how farmers navigate these landscapes of risk, and build lives and futures despite and through risk. Finally, it aims to theorize risk and uncertainty from the vantage point of the rural and the

agrarian in the global south, asking what farmers' lives and livelihoods can tell us about the uncertainties of the present, brought to stark light through heightened processes of financialization and climate change.

0.2 Theorizing Risk and Uncertainty

While I had initially framed my project around risk as an analytic, I was actually quite surprised to find that risk was indeed a term and framework that farmers themselves deployed to understand their predicament. While the concept of risk undergirds this work, the term itself remains a nebulous one that is difficult to precisely define and pin down. Tracing the genealogy of the concept and clarifying my own use of the term is thus all the more necessary. Conceptually, the term saturates many fields of study and practice – environment, geopolitics, medicine and health, finance. As I write this dissertation, the world around me is inundated with talk of risk – the COVID-19 pandemic has made the perception and calculation of risk an everyday affair for most people around the world.

The common definition of the term draws from this longstanding conception of risk as the probability of the occurrence of an adverse event. The concept can be traced back to the emergence mathematical notions of probability, which suggested that dangers were patterned and therefore, predictable. Ian Hacking (1990) describes how the development of technologies for enumeration and classification produced an "avalanche of numbers" which led to the formulation of statistical laws showing the bewildering regularity of certain events. Through this, determinism itself was eroded; genuine chance was made possible and so too its 'taming': the future was no longer the beholden to the realm of the divine. In Michel Foucault's terms, the apprehension of citizens in statistical and probabilistic terms lies at the heart of modern liberal

government. But risk has another older history in the sense of "risques" as commodities which were bought and sold as maritime insurance (outlined further in Chapter 2). Risk therefore refers to the idea that loss can be predicted, managed and capitalized upon in different ways.

My dissertation approaches risk in multiple but interconnected ways. For instance, in discussions of insurance, risk refers to a commodified and delimited object that is managed and transferred through actuarial techniques. More broadly, my interlocutors used the notion of risk, when they did, more loosely, as a hazard and danger, but also something that was unavoidable and sometimes even beneficial. Following Amiel Melnick's (2018) theorization of risk in a study of road accidents in Kenya, risk might be understood as an orientation to the future that recognizes uncertainty but also engages in assessing and calculating loss and gain as a necessary condition of life. For instance, when I asked one young farmer what he meant when he used the term risk, he recounted a trite and possibly universal proverb, *kuch paane ke liye, kuch khona padta hai* (to gain something, you have to lose something as well). To many farmers, risk is not simply something to be avoided at all costs – while the hazards and vulnerabilities of agriculture are deep and structural, some might seek to profit off of it, as I discuss in the next section. These are rural spaces deeply embedded in capitalist and commercial agriculture for decades if not centuries, and farmers make calculated engagements with risk in pursuit of capital accumulation on an everyday basis. Yet, this does not quite index the presence of individualized calculating subjects rooted in actuarial logics (Melnick 2018).

Beyond a purely economic calculus, it is a situation in which something of value is at stake and the outcome is uncertain – this might range from financial capital to social relationships to a person's reputation (Boholm 2003, Rosa 1998). While I acknowledge the importance of Frank Knight's distinction between risk (a situation with unknown outcomes but

known probability distributions) and uncertainty (a situation with unknown probability distributions), I deploy the terms interchangeably for two reasons: first, my interlocutors largely used the term 'risk' (in English) although they were referring to something akin to uncertainty, and second, because the distinctions between known and unknown probabilities is rarely clear in real-life situations.[2]

In general, much scholarship has focused on risk in modern, industrial and urban societies. Scholars such as Ulrich Beck (1992) have argued that risk is the hallmark of modernity – first, as an object of scientific assessment and control and then, as an object outside the realm of knowledge and management. Reflexive modernity (or second modernity), when risks can no longer be subject to prediction and calculation, is what Beck calls 'the risk society'. Most accounts following this tradition (of Beck, Anthony Giddens and even Michel Foucault) have theorized risk as a technology of governance within advanced liberal societies, separating risk from danger and hazard which marks 'traditional' societies based on ideas of religion, fate and chance.

Indeed, anthropologists have a long and rich history of studying the latter, most famously in E.E. Evans-Pritchard's (1976) account of Azande modes of predicting the future through oracles and accounting for misfortune through witchcraft. He outlined a theory of causation wherein he argues that witchcraft is the idiom through which unfortunate events – a collapsed granary, tripping over the root of a tree – are explained, and within which oracles are deployed as

[2] The Hindi word for risk is '*jokhim*' but this was never used in everyday talk. I initially used the term '*khatra*' to refer to risks when asking questions, but I soon realized that my interlocutors themselves used the English word 'risk'. While everyday speech in rural India includes a range of English words, the use of 'risk' is important to note since it indexes the imbrication of agrarian worlds within broader histories and geographies of commercial capitalism.

guides and counsellors. Through this, the uncertainties of the everyday become knowable and indeed, manageable.

While this dissertation does not explicitly theorize local conceptions of destiny, fate and (mis)fortune, it shows how farmers not only deploy these terms to make sense of agricultural uncertainties, but also to articulate social tensions and conflicts around caste and class (see Chapter 4). Understanding destiny as "malleable fixity" (Elliot and Menin 2018) in that it is both predetermined and manipulated, negotiated, and resisted in complex ways, I examine how farmers strive for a good life within the confines of limited resources, uncertain environments and certainly, divine predestination. Therefore, rather than oppose risk (as calculated uncertainty) to fate (as predetermined certainty), my work demonstrates how farmers themselves deploy secular and religious vocabularies, of risk and of fate, to make sense of the past and act on the future (see Chapter 4). As anthropologists have long argued, there is no neat movement from a belief in divine providence to a mathematical approach of calculation. Rather than dismiss these as post facto justifications, I examine how they view, comprehend and come to terms with the uncertainties that saturate their livelihoods.

More recent work has emerged on risk and uncertainty in the wake of recent waves of financialization and threats of global climate change. In relation to the financialization of everyday life, scholars note that life, particularly for white middle-class households in wealthy countries, is now filled with financial risks and uncertainties. Risk itself is being redistributed onto workers and families rather than shouldered by the welfare state (Bryan and Rafferty 2017, Hacker 2006). Take, for instance, Caitlin Zaloom's (2019) writing on exorbitant college debt taken on by middle class families. Zaloom writes, "…parents and children must put money down – today – on the promise of the future. They draw down savings, invest, and take out debt based

on hopeful visions that may or may not come to be…" (2020: 6). This account is oddly similar to the practices of the farmers I worked with. This dissertation responds to this literature in two ways. First, it offers a view of risk and precarity from the rural global south where most people have *always* lacked reliable social safety nets and have historically engaged in the forms of 'social speculation' that Zaloom discusses. In the context of informality and the lack of social security, social mobility in places like India (and certainly for minoritized and oppressed peoples in North Atlantic societies) has always been a "speculative enterprise" (Kaur and Sundar 2016: 234). Second, it also attempts to place these two contexts – and others – in productive dialogue in order to offer a more capacious and rigorous theorization of concepts such as financialization, precarity, and welfare.

0.3 Agrarian Crisis in India

In his study of agrarian politics and peasant resistance in Southeast Asia, James Scott (1976) famously argued that the ecological and economic risks endemic to small-scale agriculture prompt a subsistence ethic among 'risk-averse' peasants, who prioritized basic subsistence over profit maximization. This did not mean that they did not harbor entrepreneurial ambitions but that "there is a defensive perimeter around subsistence routines within which risks are avoided as potentially catastrophic" (24), whether in terms of seed choice, cropping patterns and technologies of cultivation. While this risk-aversion remains true for a certain segment of the peasantry today, there are few farmers today whose cultivation is wholly geared toward family subsistence. Risk aversion is no longer either a possibility nor a desire for most farming households, even when they are reliant on non-farm incomes (as most are). Moreover, high levels of indebtedness show that risk is now a structural condition of agricultural production

(Sethi 2018). Scott's peasant is no longer situated within a moral economy of reciprocity vis-à-vis feudal lords nor guided by a subsistence ethic, but rather fully integrated into cash cropping and wage work. In this situation, how might we attend to the problem of agrarian risk?

In recent decades, the dominant lens through which Indian agriculture has been analyzed is that of 'crisis'. Post-liberalization, the Indian agricultural sector has largely stagnated. In macroeconomic terms, its contribution to the GDP was about 15% as of 2011-12 even though nearly 60% of the country's population depended on the sector for their livelihood. Over half of the country's farmers are in debt, and for 85% of farmers, there are no savings in agriculture – that is, they make less than they spend on farming on average. Alongside, landholdings are small and fragmented with over 70 per cent of farmers classified as 'marginal', owning less than one hectare of land. Essential social services such as health and education are effectively privatized, thus increasing everyday household expenditures without parallel increases in household incomes or prices of agricultural commodities. Although these statistics do not do justice to the stark realities of farmers' lives, they highlight the contours of the deepening agrarian crisis, most tragically evidenced in the suicides of over 250,000 farmers across India since 1995.

This crisis is particularly serious in the major Green Revolution states of India – Punjab, Kerala, Karnataka, Andhra Pradesh, Maharashtra. These were states at the forefront of the 1960s-era science and technology-driven agricultural reforms aimed primarily at higher agricultural productivity and food security through high-yielding varieties of seeds, chemical inputs, irrigation, and mechanized cultivation. The afterlives of the Green Revolution are now being experienced in increased costs of cultivation, declining yields, ecological degradation and rising debts – often leading to mass suicides (see also Dudley 2000 for a comparative view of debt and farm loss in rural America). As A.R. Vasavi (2012) writes, farmer suicides in particular

are markers of a crisis emanating from a "political economy of uncaring", marked by multiple tensions and conflicts including "the privileging of the urban over the rural; the promotion of the market and the individual over the collective; in the erosion of long-evolved and locally embedded knowledge; and in the spread of multiple new risks that compound entrenched disadvantages" (2). While farmers have always been exposed to multiple risks, these have become more complicated in the contemporary moment. My dissertation builds on Vasavi's framework of the 'web of risks' in which farmers are entwined: unregulated markets in seeds and other inputs; the disembedding of cultivation from ecological specificities; difficulties in accessing capital essential to cultivation, and increased dissonances in agricultural knowledge.

This web was made evident to me during a conversation with a group of young farmers one July afternoon. We were seated at a *dhaba* (roadside restaurant) along a highway just finishing up a heavy lunch when it began to rain. The rain worried me – how would I get back to the town where I was staying? – but pleased them, since the region had just witnessed twenty days of dry weather in the midst of the monsoon season, causing grave harm to the soybean crop. At the time, we were discussing various techniques used to detect groundwater (see Chapter 4). Bewildered by the lack of certainty associated with any of these – by their own account – I questioned how they could drill without any certainty of locating water. One of them retorted: "Well, even with an onion, what certainty is there?"

"Well, at least you know that at least one onion will sprout from the ground!" I laugh.

He remained serious. "But do I know what price I'll get for it?"

His friend intervenes. "Look at our soybean. The rain has betrayed us, too". `.

Farmers are themselves aware of the intertwined, overlapping and homologous nature of the risks embedded in every aspect of the cultivation process – from seed to sales. In general,

farming boiled down to a '*satta*' or a speculation, and often described as *anischith* (indeterminate) and *anumaanit* (conjectural) work. While many of these uncertainties are age-old (for instance, will the rain come on time?), many are not. The current social ecology is the product of shifts in agricultural policy from the 1990s combined with the long and toxic afterlives of the Green Revolution. As more farmers in other regions of India engage in Green Revolution-style agriculture – through input- and water-intensive cultivation – the state investment that enabled the initial success of these technologies is being withdrawn. At the same time, productivist economic ideologies have taken deep root in the countryside: higher yields, more pesticide use, deeper wells – these are the standards of success and the ideals one aspires to, even if they are unsustainable, both economically and ecologically. Productivity has become an end in itself – this has only "promoted yield anxiety and further pushed farmers onto a technological treadmill and into a constant state of crisis" (Kumar 2016: 7). The direct impacts of chemical agriculture are now acutely felt in poor soil fertility, declining groundwater tables, and so on.

This stems in part from neoliberal shifts in agricultural policy with far less public investment in input subsidies, land reforms, irrigation infrastructure, agricultural extension services and institutional credit. Therefore, while agrarian risk is certainly not novel, it is declining water tables and soil fertility, rising input costs and fewer market protections that has made farming ever more precarious. As Alpen Sheth (2017) astutely argues, there has been a shift in India's agricultural policy from an emphasis on *land-holding* to *risk-holding*. Rather than focus on land distribution, infrastructure building and food security, state policy is now largely geared toward managing and transferring the financial risks of farmers through mechanisms such as loan waivers, crop insurance and price support schemes. Yet, as I show in this dissertation,

risk-management mechanisms create new uncertainties while also exacerbating existing rural inequalities (Chapter 2).

At the same time, as scholars have noted, this ongoing 'crisis' in agriculture is differentially understood and experienced. Indeed, given histories of class differentiation and capital accumulation, the very category of the 'farmer' needs to be disaggregated. Surinder Jodhka (2012) has noted that much of the early literature on crisis made few references to internal inequalities in agrarian India. This is despite the fact that farmers are a highly heterogeneous group, shaped by hierarchies and differences of class, caste, gender, and region. The practices and strategies of farmers in relation to the uncertainties of agriculture vary considerably based on these axes of differentiation. This, in turn, shapes their diversification into non-farm employment – both among upper- and lower-classes and castes – which further molds the ability and desire to invest in agricultural development and to reinvest agricultural surpluses in other sectors. Even as agrarian distress is all too real, regional studies have shown that rich peasant classes have profited off this crisis in significant ways (Jodhka 2012, Sinha 2020).[3] However, this treatment of the peasantry as an undifferentiated mass ignores processes of class differentiation among farmers as well as forms of agency beyond resistance to capital. Instead, as Shreya Sinha argues, large capitalist farmers have often profited off of liberalized markets and contract farming. Some are getting by, others are getting ahead. To speak of risk, therefore, necessitates a deeper probing into the ways that the specificities of social location shape engagements (or not) with the risks of agriculture. That is to say, while agrarian distress is certainly a widespread phenomenon, it is also socially and spatially uneven. The task, then, is to grasp how these changing structural conditions of agrarian production are transforming relations

[3] Although I myself use the term 'farmer' throughout the dissertation, I try to specify as much as possible the class, gender and caste location of the farmer of whom I am speaking.

between different castes and classes of farmers and farm workers, and the very idea of what it means to be a farmer in the present moment (cf. Aga 2017).

The identity and identification of 'the farmer' is a morally and politically charged question in several ways. First, popular imaginaries of the 'authentic peasant' conjure images of poverty, toil and rootedness to the land. These imaginations remain strong even in the present. When farmers do not neatly adhere to these ideas (for instance, if they are wealthy or aspire to wealth), they might be castigated as greedy, inauthentic, not *real* farmers. Second, while many rural residents identified themselves as farmers (*kisan*), they also insisted that it was no longer possible to survive on agricultural incomes alone. Therefore, while they continued to invest in agriculture (albeit in very different ways depending on caste, class and gender), nearly all farming households also engage in a range of other occupations and trades – from daily wage work to commodity trade, from running small jobs to seeking out government jobs. These modes of occupational diversification were also crucial to their differentiated capacity to endure risk and embrace risk within agriculture. Third, and relatedly, this is propelling calls to narrow the definition of 'farmer' only to those who derive a "significant portion" of their incomes from agriculture (although it is clear that all farmers engage in a range of livelihood strategies), potentially eliminating access to government aid and development programs for a large number of cultivators.[4]

Returning to the question of agrarian crisis, as a large number of studies have shown, it is small- and middle- farmers who are disproportionately affected. These farmers are often from dominant castes, who are upwardly mobile, continue to invest heavily in agriculture, and have been unable to successfully diversify into non-farm sectors. They are often "citizens with higher

[4] Harish Damodaran. 2021. Agriculture policy should target India's actual farming population. *The Indian Express*, April 19.

levels of aspirations who are seeking an entry into the market and to the promises and potential that it holds" (Vasavi 2012: 33). For these groups, sudden crop failures or inability to repay debt means the inability to maintain social status and meet familial obligations. Moneylending too is dispersed throughout intimate networks – one might take loans (on interest) from friends, family, neighbors – making the inability to repay rife with indignity (see Sethi 2018). The suicides of farmers, therefore, demands attention to affective experiences of debt – that is, accounts of debt and crisis that are textured and layered, in addition to structural accounts. Neoliberal shifts in agricultural policy are concomitant with other transformations in the countryside – changing aspirations, devaluations of rural lifestyles, breakdown of patronage relations, and the individuation of risk. Indebtedness is never a purely 'economic' issue, but always tied to notions of dignity, status, and humiliation. In Esha Shah's (2012: 1175) words, "suicides in a certain sense are the expression of social imaginings of the life of the dispossessed as not worthwhile". Although I do not discuss farmer suicides in this dissertation, I flag this critical issue here as it powerfully shapes – both materially and discursively – the possibility for dignified futures within agriculture.

Against this backdrop of rural distress, this dissertation, therefore, makes several related interventions: it unravels the 'web of risks' articulated by Vasavi (2012) and ethnographically unpacks the crisis narratives to show the uneven distributions of risk and reward among agriculturalists, including for those who continue to accumulate through agriculture.

0.4 Anthropologies of the Future: Aspiration and Speculation

Studies of risk and uncertainty are inevitably about the future – or as Austin Zeiderman (2016: 1-2) defines it, "governing the present in anticipation of future harm". Although there has

been a huge resurgence of interest in futurity within anthropology (see Valentine and Hassoun 2019), there is also a rich history of scholarship around questions of divination, prediction and prophesy. Ideas of the future are, as Arjun Appadurai (2013) notes, cultural facts that shape social life in the present. It is known through particular temporal orientations of ideas, discourses, practices, and affects. As such, what scholars call 'the future' encompasses a range of temporal and spatial scales – the next hour's price, tomorrow's meal, the rains next year, climate change effects on future generations. Like BPO workers, for my very differently positioned farmer interlocutors too, "futures were based on disjunctive temporalities spawned by intertwined processes of rapid transformation and stagnation, aspiration and anxiety, upward social mobility and precarity" (Mankekar and Gupta 2017: 72).

Engaging with futurity, as I do in this dissertation, does not entail forgetting the past or the histories that saturate present-day imaginaries of the future. Indeed, sedimented within these agro-ecological landscapes are the enduring legacies of caste oppression, class inequalities and environmental contamination. However, agriculture itself is largely discussed through narratives of decline or nostalgia for the past. Without falling into the trap of techno-optimism, this dissertation asks how farmers themselves think about the future, and their futures, within agriculture across multiple timescales? While I address diverse modes of knowing and engaging the future from prediction to divination through this dissertation, I pay special attention to two orientations and frames of analysis: aspiration and speculation.

Aspiration

In perhaps one of the most cited recent treatises on the future in anthropology, Arjun Appadurai writes that culture has always been associated with a pastness (heritage, tradition) while development has been tied to the future (progress, planning). Appadurai's argues that the

poor have a limited "capacity to aspire" and a more "brittle horizon of aspirations" resulting in an underdeveloped faculty of "voice" (in Albert Hirschmann's terms) or the ability to express their views and make political demands. While Appadurai's point that we need to engage with aspirations as cultural capacities is important, this framework does not account for the rich navigational capacities and expansive imaginative horizons that one encounters in rural sites such as Malwa (cf. Piliavsky 2020).

While there has been a great deal of interest in emerging aspirations in India, much of it is focused on the expanding Indian middle-class and urban residents to the exclusion of rural and agrarian communities (and this is certainly true of other regional contexts as well). Indeed, Jostein Jakobsen and Kenneth Bo Nielsen (2020) point out that there is often a stark contrast drawn between urban middle-class India as a site of aspiration and upward mobility (exemplified by the information technology sector) and rural India as the site of debt and distress (as exemplified by the indebted peasant prone to suicide). When the agency of peasant communities is highlighted, this usually takes the form of social movements or resistance to capital and the state. But agrarian transformations "are also informed by rural aspirations for alternative futures and new possibilities that are internalised and reproduced locally" (Bennike et al. 2020: 41). Moreover, the expansion of neoliberal capitalism itself is as much about popular aspirations as it is about aspirations of capital 'from above' – indeed, aspirations are always desires rooted in popular lifeways as well as conditioned by political economic forces (Jakobsen and Nielsen 2020). Situated within specific political economic conjunctures, they are never just about capital accumulation or class mobility – as projects and practices, they are equally and relatedly about upholding dominant moral values and cultivating social distinction (see Chapter 5). Following Jakobsen and Nielsen then, this dissertation defines aspirations as a "broad spectrum of social

praxis derived from the active, seeking roles that rural populations play in the uneven expansion of neoliberal capitalism" (2020: 145).

While non-farm employment is ubiquitous in the region, throughout this dissertation, I highlight the ways that these aspirational projects take shape within the agrarian landscape (while recognizing the movements of people, capital and expertise across sectors). Yearnings for a better future might be non-agrarian but, in lieu of its realization, they are equally in pursuit of forms of agrarian modernity. While we might imagine a steady exodus from agriculture (and this is certainly occurring), there are also many farmers who *have* to stay on the farm. Jobless growth in India has meant that industrial employment is limited while service-sector jobs are either low-paying and precarious (such as construction work, domestic labor and other kinds of informal self-employed work in cities) or require English language proficiency and technical skills (such as in financial services, IT, engineering, hospitality, and so on). Regardless, those with land are unlikely to leave it fallow, they farm it with the intent of good yields and potential profits. Ideologies of improvement (of the land and of the self) propel attunements to cultivation that emphasize productivity and profitability.

As I will show, these projects are high stakes and risky – growing high-value crops and speculating on price (Chapter 3) or drilling expensive tube-wells without quite knowing if there is water underneath the ground (Chapter 4) – but hold the potential for significant material and social rewards. However, very often, they do not materialize. Or rather, these aspirational projects are circumscribed and structured by entrenched social hierarchies. Who can afford to drill and deepen multiple tube-wells without going into debt? Who is able to hoard produce in the hope of a better price? Aspirational projects can propel social mobility but are also socially structured in ways that might work to reproduce inequalities.

What I discuss in this dissertation are not formally organized aspirational projects that take the form of social movements, legal struggles, or political protests (though they certainly could at particular historical conjunctures). But they have social moorings and meanings. In this, I take inspiration from Meghan Moodie's incisive examination of "collective aspiration as a lived, daily project", that is at once material, cultural and imaginative, as much about enacting upward mobility as it is about preventing downward mobility (2015: 5).

These practices are, therefore, not without their attendant anxieties, dilemmas and contradictions. Aspiration can also be framed as a 'problem' – thwarted, failed or inappropriate aspirations generate new anxieties and come to be seen as a social pathology (Chua 2014). This is reminiscent of Lauren Berlant's notion of 'cruel optimism', the relation that exists "when something you desire is actually an obstacle to your flourishing" (2011:1). As an affective structure, an optimistic attachment entails a clinging to particular fantasies (say, of 'the good life') even when evidence of their fragility and instability abound. Although Berlant is discussing a quite different social and political context, some of her insights are incredibly valuable to my discussion here.

To give one example, as I show in Chapter 4, the tube-well, now ubiquitous across rural India, is a technology of both peril and possibility. Studies illustrate how tube-wells are often at the root of mounting rural debt and depleted aquifers, thus causing enormous ecological and social distress. At the same time, it has a certain democratizing quality – far cheaper than traditional dug wells, now nearly everyone can (albeit with loans) drill their own private well and thereby, grow more and higher-value crops. Farmers in my field village and elsewhere drill well after well, often goes lakhs of rupees into debt, all in the search for elusive water which, they believe, is the solution to their economic woes. At the same time, my research found that the

tube-well was enormously transformative for low-caste farmers in particular, since they could now cultivate cash crops even on small parcels of land. These wells "opened up a new arena in which Dalit communities could imagine for themselves new kinds of economic and social subjectivities", to imagining a possible future of caste equality (Cross 2014: 91). Then, despite its economic and environmental unsustainability, the tube-well holds considerable imaginative power, as the promise of egalitarianism and economic empowerment, even if this promise was – for many – endlessly deferred and often directly thwarted.

For the most part, the farmers whom I worked with did not explicitly envision or practice alternative forms of agriculture – whether organic cultivation or selling through cooperatives. Most of them are deeply embedded within input-intensive cash cropping, seeking prosperity, upward mobility and indeed, capital accumulation through it. Indeed, their aspirations are structured by the political and moral economies within which they are embedded. These are, in Nancy Fraser's terms, affirmative rather than transformational projects in that they do not necessarily question the political-economic structures that produce such unequal outcomes. In the absence of available alternatives both within and outside of agriculture, my interlocutors sought futures within a model of agrarian development whose future (and present) is itself ecologically and economically compromised. At the same time, I do not want to assume these goals as necessary or inevitable among all my interlocutors – other futures were possible, even if not fully conjured or articulated. I now turn to a discussion of speculation, another dominant mode of engaging with both temporal and spatial uncertainty.

Speculation

In Laura Bear et. al's (2015) call for thinking capitalism beyond centers of high finance in the global North, they conceptualize speculation as "an engagement with uncertainty for profit

as well as for survival" (387). Grounded in specific ways of seeing, to speculate is to work with unknowable futures and instabilities of value (ibid.). Indeed, speculative practice complicates the boundaries between calculation and divination, between formal and informal, between legal and illegal forms of value creation (see also Bhattacharya 2018). While speculation has been the subject of rich theorization in work on finance capitalism (Ho 2009, Zaloom 2006) as well as on land markets (Goldman 2011), there is less explicit theorization of speculation within agrarian capitalism (Cronon 1991 is masterful exception). This is despite the ubiquitous use of the metaphor of gambling by farming communities around the world (see Muenster 2015, Park 2019, Puri 2020).

Although there may be key distinctions in terms of the speed, scale and volume of speculative transactions in the current moment, there have always been speculative elements to capitalism itself. More broadly, we are all speculators in some sense in that we are all making calculations on a future that is inherently uncertain. Indeed, all commercial enterprise is speculative in the sense that it entails a degree of contingency. As Jonathan Levy argues, it is "this quality of the future that capitalism is constantly seeking to generate, manage, and exploit" (2012: 14). One might ask then, is commercial agriculture inherently speculative and if so, what might an analysis of its rhythms and gyrations teach us about speculation more broadly?

At the same time, scholars have also expanded their explorations of speculative practice beyond finance capitalism to encompass varied modes of imaginative and material future-making across cultural, moral and ecological realms. Here, I draw on Caroline Humphrey's (2020) argument that speculation (in her case, on housing) is not simply about monetary value but also emotional and moral value, and therefore revealing of the ways that supposedly 'irrational' speculation is embedded within broader economic, social and political webs of

dependencies. It is, of course, not morally neutral, but rather, rife with contestation around notions of greed, legality, hierarchy, and masculinity. My work understands speculation not only in relation to the accumulation of capital but also as an economic activity and affective orientation to the future that animates ideologies of cultural difference, social distinction, moral value and dignified personhood (cf. Upadhyay 2020). That is, although speculation evokes notions of calculation, it is an affective practice shaped by hope, anxiety, desire and fear (Cross 2015).

This dissertation offers a political ecology of speculation in attending to the ways that the specificities of ecological and material forms – of crops, of water, of knowledge – shape speculative possibilities, with uneven and surprising social and ecological outcomes. Further, it expands current work on speculation by attending not only to its temporal but also to its material and spatial dimensions – speculation on subterranean water (Chapter 4) or the significance of storage infrastructures to speculative practices (Chapter 3). Farmers are not simply making projections and estimations onto uncertain temporality – the price next month, the rain next week – but also spatially – on water underneath the ground, for instance. In grounding speculation within these material forms, this project aims to extend the literature in new directions.

0.5 The Region: Madhya Pradesh, Malwa, and Pipliya Village

This dissertation is based on fourteen months of ethnographic fieldwork conducted across three districts in Malwa, a predominantly agricultural region located in the state of Madhya Pradesh in central India. This region, the Malwa plateau, is also historically the most prosperous part of the state, serving as a geographical and commercial link between northern and western India. It is a fertile area, known for its moisture-retentive deep black cotton soil, even though soil

types vary across this area (and even within a single village) and include alluvial soil, red gravelly soil brown and stony soil as well. In agro-climatic terms, it is classified as a semi-arid region marking by undulating and hilly terrain and dry deciduous shrub lands.

Interestingly, Madhya Pradesh is quite understudied in general and in agrarian studies (particularly compared with Punjab, Uttar Pradesh, Tamil Nadu and West Bengal) barring recent excellent studies of soybean cultivation in Dhar district (Kumar 2016) and agricultural markets in Harda district (Krishnamurthy 2011). The state itself is incredibly diverse both ecologically and historically, a cobbling together of multiple princely states which were under indirect British rule and of the tribal regions of the Central Provinces and Berar which were under direct British rule. Malwa, the specific region in Madhya Pradesh that I studied, is comprised of multiple erstwhile princely states, the Holkars of Indore, the Scindias of Gwalior and the Dewas (Junior and Senior) dynasties of Dewas, all Maratha rulers who reigned over central India until independence in 1947.

My initial interest in studying Madhya Pradesh came from the policy context – it was the first state to implement the Pradhan Mantri Fasal Bima Yojana (Prime Minister's Crop Insurance Scheme) following its launch by the central government in 2016 and had a fairly high number of insured farmers. In 2017, the state government also launched the Bhavantar Bhugtan Yojana (Price Difference Payment Scheme), which promised farmers a buffer against unexpected price crashes. More broadly, Madhya Pradesh offers an interesting vantage point to study risk precisely because it was not one of the early Green Revolution states which witnessed agricultural growth and modernization in the 1970s. Rather, its agricultural growth has risen more recently, indexing a moment of flux and change in the region (particularly in vegetable production which is generally high-risk and high-value cultivation). This growth has not been

without its tensions – for instance, in 2017, five farmers were killed in the state's Mandsaur district as they attended protests demanding remunerative prices for their produce as well as waivers on their farm loans. An insurance company executive I made contact with also pointed me toward three districts in the Malwa region – Ujjain, Dewas, and Shajapur – where they were implementing the program, since enrollment numbers were quite high here.

In July of 2018, I travelled around western and central Madhya Pradesh, meeting scholars, activists, NGO workers, bureaucrats, insurance company executives, and farmers in Bhopal, Indore, Dewas, Bagli, Hatpipliya, Maksi and Ujjain, trying to find a possible site for my fieldwork. As I spent time in Dewas, travelling with insurance agents to conduct field surveys, I was simultaneously meeting with workers at a local NGO to see if they could assist with finding me a village where I could base myself. I had no specific criteria other than that I was interesting in basing myself within a village that was medium-sized and had a mixed-caste composition. After more than a month of this search, I had two choices. The first was a village where a local NGO conducted work – it was a mixed-caste and relatively prosperous village but was fairly remote and difficult to access without private transportation. More importantly, as I began to consider the logistics of my possible move there, things became more difficult. Understandably, people in the village associated with this NGO were either hesitant to bring me (a complete stranger) into their homes, leading to suggestions that I could stay in the nearby town and travel to the village by bus, at least for an initial period. Those who were more open to accommodating me did not have much space in their homes, which would make my presence a burden and leave me without any private space (which I believed I would need over this long duration of fieldwork).

Another possibility emerged: my hosts (also activists with another local NGO) in the town of Dewas introduced me to an elderly man, Narenderji, who lived in a village in the nearby Ujjain district. Narenderji had been acquainted with activist networks for decades as a singer of Kabir bhajans (devotional songs).[5] Narenderji's son had recently moved into a concrete house and his older mud hut was lying empty: I could stay there if I wanted and his daughter who spent most of her time in her father's home could cook for me. This village, which I call Pipliya, was fairly large, also mixed-caste, but it was not very prosperous and was anomalous in that it had a predominant Dalit (low-caste or formerly 'untouchable') population. Now, I had two possible options and among my friends and acquaintances in the area, my indecision and confusion became something of a joke: *will you choose village A or village B?* they joked.

I recount these details not to trivialize the very delicate and rigorous question of site selection but to show the numerous contingencies involved and to show that my search for the 'perfect village' or 'typical village' was but a mirage. Each village as I soon found out is remarkably distinctive: in its ecology, its caste composition, even the crops grown. Ultimately, I moved to Pipliya where I lived for the next 14 months. This was the most feasible option at the time: offering a private space of the hut; a safe and welcoming household; and a place where I would not be too much of an inconvenience. While I had initially planned to move to the other village site later on in my fieldwork, that proved to be too difficult given the considerable distance between the two villages.

Pipliya, I was repeatedly told, is a very poor village. I was often chastised for studying agriculture there rather than in a more 'progressive' village with 'active' farmers (that is, a richer village with farmers who adopt the latest technologies and practices). Many residents of Pipliya

[5] The region is well known for its Kabir troupes, and has been the subject of research work on performance, song and spirituality in connection with these singing troupes.

as well as those who I met elsewhere insisted that I had chosen the wrong village to study. For a long time, this disconcerted me: had I made a terrible decision? Eventually, I responded to it in two ways. First, I turned their criticism into a question in itself. Why was Pipliya the 'wrong village to study'? What made it so in their minds? Second, while I remained in the village, I expanded my networks beyond it to a number of neighboring villages. Although I did not make systematic studies of these villages, my visits and interviews (particularly in one nearby village) gave me a broader perspective on agrarian dynamics in the area.

Figure 2: Pipliya village as pictured from its main arterial road.

Located in the Tarana tehsil of Ujjain district, Pipiya is a large village, constituting its own gram panchayat and spatially comprising a number of interconnected but caste-specific hamlets. According to 2011 Census data, it has a geographical area of 1155 hectares with a total population of 2201 people in 493 households. As noted above, it is an unusual village since it is predominantly lower caste with the majority population belonging to the Balai (traditional

weavers, agricultural laborers and village watchmen) and Bagri (livestock raising) castes (both formerly 'untouchable' castes and now classified as Scheduled Caste under the Indian Constitution), though the dominant caste is the upper-caste Rajput (warrior caste and feudal landlords).[6] There is a smattering of other caste groups in the village: Sutar (carpenter), Kumar (potter), Brahmin (priest), Nayi (tailor), Khati (peasant), Chamar (leather tanners), Bhil (tribal). Landownership is highly unequal as with most villages – the biggest landowner in the village is a Rajput household but the majority of farmers are small and marginal landholders.[7] But it is significant that the low-caste communities do own some land, which is slightly different even from neighboring villages. While perhaps an unusual material distribution, it offered me a unique perspective on the lives of low-caste farmers who owned some land and were engaged in varied projects of striving for a better life.

Alongside, the village itself is located in a small valley of sorts with a large proportion of the agricultural land located on hilly and rocky land surrounding the residential area. This land is composed of gravelly red soil which is not as fertile as the black and alluvial soil that dominates the region. Given the undulating hills and valleys of the region (and the village), it is the upper-caste groups who own the more fertile lands in the valley while the lower-caste groups own the less-fertile rocky land in the hilly areas. The village has a few small streams flowing through it, but water for both household and agricultural purposes is primarily sourced from dug wells and tube-wells. While there is a canal that flows past a neighboring village, it is not within reach of Pipliya.

[6] Bagris were formerly labelled a 'criminal tribe' and continue to be locally stigmatized as alleged thieves.
[7] In India, the official classification of farmers according to size of landholding is as follows: marginal farmer (cultivating less than one hectare of land), small farmer (between 1-2 hectares of land), semi-medium farmer (between 2-4 hectares), medium farmer (between 4-10 hectares) and large farmer (more than 10 hectares).

The primary crops grown in the village were soyabean in the monsoon (*kharif*) season and wheat and gram in the winter (*rabi*) season. A few farmers grow vegetables such as cauliflower, onion, potatoes, and garlic – though this is still not on the scale grown in neighboring villages which are more prosperous. Some farmers might also cultivate varieties of lentils, groundnuts, peanuts, and maize during the rainy season. Those who still have access to water in the dry summer months (only a handful of farmers) might plant small patches of green vegetables for direct sale at local markets. Over the past forty years, cropping patterns have dramatically changed, although the region has a long history of participation in commercial cultivation. Several decades ago, farmers cultivated *jowar* (sorghum) as the primary subsistence crop as well as cotton and sugarcane as cash crops sold in the market. Sugarcane and the making of *gud* (jaggery) was so prominent in the area that there was a sugar mill adjacent to the village. When it shut down about twenty years ago, people say it became difficult to sell their cane and this led to the decline of sugarcane cultivation. The sugar mill is now a cold storage warehouse for potatoes, the new cash crop in the area.

Figure 3: Soybean fields

Figure 4: Wheat harvest

Cultivation of jowar gradually declined with the state promotion of soybean in the 1970s. Simultaneously, cultivating a second (winter) crop was made possible through the expansion of tube-well irrigation and cheap electricity. This, alongside Green Revolution-era productivist and food security imperatives, led to the spread of wheat cultivation, now the primary food crop (despite its intensive water requirements and relatively low nutritional value in this semi-arid region). More recently, the National Horticulture Mission has promoted the production of high-value horticultural crops, which have been taken up by wealthier farmers. Increasingly, farmers might cultivate as many as three to four successive crops each year, whereas they cultivated only one just a few decades prior. As one elderly woman lamented, "Earlier we were happy with just one crop. Now we are unhappy even with three." Regardless, my point is simply that this region has a history of cash cropping which has long attuned its residents to concepts of market risk.

The landless poor as well as marginal farmers engage in a variety of wage work – as construction labor, bike mechanics, agricultural labor, truck drivers, and so on. Most households – both wealthy and poor farmers – are engaged in some form of non-farm employment or business within the village or in nearby towns and cities– from taking a government job to

running a small shop. Women of poorer households primarily work as agricultural labor, doing work such as sowing, weeding, and harvesting, for a daily sum of anywhere between Rs. 100-150 (roughly $2-3). Male labor is hired for work such as spraying pesticide, irrigating crops and harvesting wheat – work that is also better paid. Wealthier farmers might also hire a *naukar* (servant) for the winter season to oversee and irrigate their crops for a fixed sum of money and share of the wheat harvest. Several kinds of share-cropping, land leasing, labor-sharing and water-sharing arrangements also exist. To give just one example, one brother of my host family had a small plot of land but no water. To grow irrigated wheat, he entered into an arrangement with a neighbor – he provided the land, the neighbor provided the water, they would jointly harvest the crop and equally divide the harvest.

There are two traders who buy produce within the village – mainly soybean, wheat and gram (they do not deal in vegetables). One man, belonging to the Jain Baniya caste who lives in an adjacent village, inherited this work from his father who also traded in this village and others in the area. Now he primarily buys from this village, coming to a small storeroom-like shop every morning – chatting with villagers, briefing them on the prices he is offering (usually a few hundred rupees lower than the market price), weighing the produce they bring to him. He also makes small loans to villages on interest and often with collateral. Since Pipliya is relatively poor, his continued presence there is reasonable – for poor villagers with small stocks, it makes little sense to spend money to hire a truck and pay laborers to go to the market, even if one can get a higher price. The local trader (known as a *bicholiya*) performs a vital service in that he gives out loans, offers immediate cash, and will collect produce directly from your home. Another trader is a more recent entrant to the business, a local Chaudhury, who also runs a small milk dairy, buying milk from local dairy farmers (however, he refused to speak with me so I

know very little about his business). While smaller farmers tend to sell to these traders within the village, the medium- and large-scale farmers with more produce sell at district and sub-district markets some distance away. Here, there are various possible markets including tehsil (sub-district), district and regional grain and vegetable markets at Tarana, Ujjain, Shajapur, Dewas and Indore. But it is often the more distant markets that are larger and more competitive, and offer better prices.

Within the village, there is a government primary and middle school but both are barely functioning, with only a few children still attending. Most now attend a small private school in the village set up by a local resident (ironically, a man who is a government school teacher). Those who can afford it send their children (usually their sons) to a number of larger and more expensive private schools established along the main highway. A private doctor visits the village every evening, but the nearly government hospital is a few kilometers away in a neighboring village – one needs private transport to access it. The village is located only five kilometers away from National Highway 3, more popularly known as the Agra-Bombay road, a major arterial road connecting north, central and western India. This is a major commercial highway with hundreds of trucks traversing its lanes every day. Some villages took advantage of this proximity in very direct ways – during the monsoon season, one can see rows of trucks lining up on the edge of the highway for farmers to load sacks of cauliflower from their fields onto these vehicles to be transported to major metropolitan cities where they fetch high prices. There is very little public transport here, and it is mainly private auto-rickshaws or motorbikes that ply on these village roads – when one gets to the highway, a number of private bus services offer transport to nearby towns and cities.

0.6 Methods

How does one study an object such as risk? Where is it located? How might it be traced? While I initially imagined my work as a more classic village study, my ethnographic object – alongside the temporalities and exigencies of fieldwork – led me beyond its spatial limits. Within the village of Pipliya, where I spent most of my time, I began my work by conducting a basic household survey of 50 households, gathering information on caste, household composition, size of landholding, crops grown, and access to key resources such as water, knowledge, credit and insurance. More than the information obtained through these surveys, they gave me a better sense of village dynamics and familiarized village residents with me and my project. Then, I closely shadowed three families in order to observe and understand their agricultural decisions and practices – one medium-scale farming household with about 20 bighas of land belonging to the Khati caste; a marginal farming household with one bigha of land belonging to the Bagri caste; and another small farming household with 8 bighas of land from the Balai caste.[8] I accompanied these families to their fields, assisted with field labor (mostly slowly and ineffectively, but generally to everyone's amusement) and household tasks, and occasionally accompanied them to the market; I spent time in their homes watching television, chatting, eating; I also attended weddings and village festivals.

After a few months in the village, I began to expand my network outwards as well. A young man in Pipliya worked at a school in a neighboring village (about 5 kilometers away) and I asked him to introduce me to some residents there. He introduced me to some families there – mainly Patidar families, and I soon became close with two families in particular. They became important interlocutors and their stories populate these pages. Another crucial source of

[8] In this region, one bigha is roughly one-fourth of a hectare.

expanding networks were the women of Pipliya. The practice of patrilocal residence means that women are the largest group of migrants in India, moving from their natal to marital villages after their weddings. Through the wives of Pipliya, I visited a number of other villages, accompanying them or their daughters when they visited their natal homes and also meeting their parents and brothers when they came to visit in Pipliya.

Since Pipliya is located within the district of Ujjain but borders the districts of Shajapur and Dewas, my research took me to places across these three districts. For instance, I met extension agents and revenue officials at the district and sub-district headquarters in Ujjain district, but I often followed farmers to sell their produce in the district markets of Shajapur and Dewas, which were closer in distance to the village. I made regular trips to the district, sub-district and regional *mandis* (government regulated agricultural produce markets) for grain and vegetables throughout my fieldwork to observe auctions of soybean, wheat, gram, onions, potatoes and garlic (in Tarana, Ujjain, Shajapur, Dewas and Indore). Here, I observed auctions, spoke with *arhatiyas* (commission agents), traders, laborers, farmers and government officials, and recorded daily market prices. I also observed the process of government procurement of wheat (for the public distribution system) from farmers at the Minimum Support Price (MSP) in April 2019 as well as the operation of the Bhavantar Bhugtan Yojana (Price Difference Payment Scheme) for onions in June 2019. In addition, on two separate occasions, I accompanied a group of traders on visits to villages to purchase onions directly from farmers (thus bypassing the market altogether).

Around the harvest period, I travelled with insurance company representatives to conduct field surveys (known as crop-cutting experiments) of soybean, wheat and gram crops (September-October 2018, 2019; February-March 2019). Through these visits, I met a number

local loss surveyors, accompanied them on their surveys and conducted focus group discussions with them. This was also useful since the surveyors remained the same even after the insurance company for the area changed in the following year. I conducted short interviews with senior company executives in person and on the phone.

Within and beyond the village, my relationships were generally bounded by relations of caste. Since my host family was Balai (Dalit), this created certain social barriers and tensions, particularly with upper-caste Rajput families within Pipliya. Narenderji, my host, was a well-respected man in the village despite his caste position, which gave me some credibility as I began my work. Nonetheless, since I lived in the Dalit *mohalla* (neighborhood), many upper-caste people in the village and beyond treated me with some suspicion and derision, keeping me at a distance (even while insisting that I move out of that neighborhood and into a more respectable hamlet or another village).[9]

While many of my interactions were structured by the caste and class status of my host family, I was certainly treated very differently from them – invited into peoples' homes and family events, sharing meals, and so on. Within the rural and small town milieu, I was visibly urban and upper-class – this was often evident from my clothing, speech and general comportment.[10] That I am relatively fair-skinned, could speak English and had my own computer (to name a few external markers) was also read as a possible sign of my upper-class and upper-caste social location. Yet, beyond this general assessment, most people were hard-pressed to place me within the local caste hierarchy because my specific caste was unclear (since caste

[9] I was often privy to casteist comments, but could not always respond to them except in the most diplomatic manner possible, which often left me frustrated. Not only did I not want to jeopardize my research, but more significantly, I feared that any critical comments could endanger my host family.

[10] I should add that my preference for plain and loose cotton clothing in what were perceived to be dull colors and prints were viewed as evidence of my 'simplicity' and 'humility' (but also perhaps that I could not afford anything better – with more embroidery, lace, sequins, and so on which were seen as far more stylish).

names are regionally variable) and my own regional and global roots (I introduced myself as someone whose parents lived in Bangalore, a city located in southern India, and a person who was studying in America) were only vaguely familiar to all but the most educated and well-travelled of rural residents but at the same time, indexed to everyone a certain cosmopolitanism.

As a visibly urban, upper-class and educated unmarried young woman travelling on her own, I was an anomaly in Pipliya and the region, to put it lightly. While not entirely unheard of, it is quite uncommon for young women to travel alone in these parts without a chaperone and I was seen as something of an oddity throughout my time there. In some cases, my presence made people deeply uncomfortable and I was advised to travel with a male companion. While people were generally familiar with the survey method (from government census data collection), they were puzzled when I stayed on for many months after my initial survey. Some believed that I must have some hidden scheme to get rich or even better, to secure a government job through this work. Others took me on as a welcome amusement and distraction, if nothing else. While I tried, to the best of my abilities, to explain that I was interested in understanding farmers' lives and the risks they faced, this story didn't always convince people. Most often, I was taken for a student of agricultural science, akin to an extension worker – but when I could not recommend appropriate solutions for this pest or that affliction to their crops, I was deemed to be even more useless than they had earlier presumed.

Over the course of fieldwork, friends, acquaintances and strangers took me to be many things: extension agent, tax inspector, insurance agent, government official, school teacher, commodity trader, and more. I can only hope that I have at least been a competent ethnographer, one who has tried her best to capture the richness and complexity of their lives in the pages that follow.

0.7 Chapter Overview

Chapter 1 opens with the 'new year' of the Indian agricultural calendar, the annual south-west monsoon, which provides 80 per cent of the country's annual rainfall, and whose patterns have transformed dramatically in the last two decades. Drawing from oral histories, meteorological data, and observation of the season's rhythms, this chapter traces the monsoon as recollection, anticipation, and lived experience. Ethnographically, it dwells on the anxieties of pre-monsoon waiting to the performance of rainmaking rituals. In particular, I examine moral and political discourses around rain, its absence and excess, to reflect on the myriad ways in which the uncertainties of weather are locally understood and addressed. Moving between meteorological forecasts and local modes of prognostication, historical memory and rainfall records, this chapter turns an ethnographic lens to the vagaries of the monsoon and its contradictory outcomes – from heightened indebtedness to replenished aquifers.

As the incidence of extreme weather events increase, development agencies and governments herald crop insurance as a crucial mode of risk management. Moving between an analysis of the insurance industry and field observation of its operations, Chapter 2 examines the working of the Pradhan Mantri Fasal Bima Yojana (PMFBY), a state-subsidized, privately-operationalized crop insurance scheme launched in 2016. Crop insurance was introduced with the aim to replace disaster relief for crop damage with payouts based on actuarial calculations– a broad shift in agricultural policy focus from 'land-holding' to 'risk-holding' (Sheth 2017). This chapter examines how risk is defined and calculated by insurers and farmers, and the contestations that emerge from this process. While the integration of farmers into insurance markets certainly represents the financialization of agro-ecological risk, this chapter show how insurance is drawn into debates around governmental responsibility and local economies of

brokerage and patronage. Specifically tracking the work of loss assessment, this chapter shows how insurance is retooled as a site of claim-making vis-à-vis the state, thus working both as a mechanism of accumulation and of social protection. In particular, I closely examine how the specificities of index insurance – wherein average area-yield operates as a proxy for crop loss – create new uncertainties even as farmers subvert its operations in unique ways.

As farmers note, even when the weather is favorable, the market is not – especially since they are producers with no control over the price of their product. In Chapter 3, I examine the uncertainties of price through a close examination of a single economically volatile and politically salient crop – the onion – from field to market. Although it is a *kacchi fasal* (raw crop) with a substantial cost of production, the high productivity, storability, and profitability of onions have led an increasing number of farmers to its cultivation. It is also politically significant as a kitchen staple and the second highest consumed vegetable in India. But prices are highly volatile making its cultivation a notorious gamble. Drawing from observation of market auctions and a government price support scheme as well as interviews with farmers and traders, I lay out the plans and strategies of farmers as they buy and sell, hoard and hedge, speculate on and sort their onion produce in the hope of a high price. Building on James Scott's (2017) concept of 'political crops', I discuss the onion as a 'speculative crop' whose material properties open possibilities for speculative profits. Speculation and hoarding, I show, are aspirational practices among farmers, viewed as a long-awaited reward as well as a mode of survival in an agrarian economy marked by prolonged recession and ecological decline. I argue, however, that the ability to engage in speculative trade is premised on pre-existing agrarian inequalities, thus further differentiating the peasantry, individualizing their relationship to markets, and preventing the emergence of solidarities around the constitution of a fair price.

Chapter 4 explores the technology of the tube-well, ubiquitous throughout the region and vital to contemporary agriculture. India is the largest consumer of groundwater in the world, even as aquifers are depleted and wells increasingly run dry. While scholarship on groundwater politics in agriculture has shown its deleterious ecological and social effects, this chapter argues that it has also produced unexpectedly emancipatory outcomes. As water becomes as crucial as land in producing high-value horticultural crops, a tube-well has allowed for socially marginalized Dalit ('lower caste') communities to participate in commercial cultivation, even on small plots of land. Yet, in the absence of groundwater mapping and restrictions on new wells, finding water is viewed as a matter of fate. Tracing stories of who found water and how, it argues that farmers interpret the uncertainties of agrarian life through accounts of personal fate and fortune, even as their experiences reveals a social truth about the roots of this uncertainty – the atomization and individualization of smallholder farming marked by the absence of public water infrastructures.

Chapter 5 delves into the sociology of risk-taking, asking: within the deeply hierarchical agrarian structure of India, who takes risks, and why? In answering this question, I examine how ideologies and mythologies of risk-taking are imbricated within discourses of caste difference, cultural distinction, and masculine prowess. The chapter is framed around the Patidars, a traditional cultivator caste, whose members rank among the most economically prosperous in the region and are well-known for growing profitable cash crops and diversifying into the agri-chemical and commodity trade. Indeed, young men from the community proclaim their preference and flair for risky ventures, and emphasize the intersection of moral virtue and entrepreneurialism ties to explain their success. While their rise to become the region's agrarian capitalists is not recent or novel, their self-positioning signals the constitution of the 'good

farmer' as risk-taking entrepreneur. Moreover, I argue that their economic success is rooted in caste-based networks through which agricultural expertise travels, thereby excluding non-caste members from vital knowledge about seeds, inputs and prices. The scaling back of public agricultural extension services has effectively privatized access to knowledge which increasingly comes from private agri-input retailers, thus further entrenching inequalities of caste and class in rural India.

Across these chapters, I explore how farmers grapple with uncertainties in various forms. While these sites (and chapters) are not neatly homologous, they each reveal a particular dimension of uncertainty as it is lived and encountered in Malwa. My concluding comments to this dissertation move beyond Malwa – to the streets of New Delhi and beyond – in a brief reflection on the futures-in-the-making within and beyond the powerful farmers' protests against a new set of agricultural laws passed by the central government of India.

CHAPTER 1
Monsoon Mediations: Before and After the Storm

In July 2017, farmers in Beed, a drought-prone district in the western Indian state of Maharashtra, filed a legal case against the Indian Meteorological Department (IMD), blaming its inaccurate rainfall predictions for their huge financial losses.[11] Believing official forecasts that the rain would come early that year, farmers began to sow their crop. When these predictions did not materialize, they faced losses of seeds, inputs, and time, propelling them further into debt. The complaint, filed at Dindrud police station in Majalgaon tehsil of Beed district, alleged that the state forecasting agency had colluded with manufacturers of seed and pesticides to mislead farmers with an inflated rain forecast. The agency responded by noting that their predictions were only *advisories* and that it was up to the state governments and farmers themselves to *interpret* them. While the case itself did not lead anywhere, it raised a furor in the national media – could the weatherman be jailed for an inaccurate forecast? Do those who make predictions have a responsibility to their audience? More concretely, however, it opened up broader debates on the nature of weather prediction itself. After all, even though it did not rain in the specific village of Anandgaon from which farmers filed the case, the meteorological data for the district as a whole predicted and depicted 'normal' rainfall. Given the material uncertainties of rain – along with its immense variability – how do farmers predict, anticipate, interpret and engage with this absolutely crucial weather phenomenon? And how does modern meteorology intersect with longstanding modes of predicting the rain? Finally, regardless of whether predictions bear out or not, how do farmers grapple with the uncertainties of waiting for the monsoon rain and confronting its afterlives (whether as absence or excess)?

[11] 'IMD forecast rain, misled us: Beed farmers' plaint to cops', *The Hindu*, July 15, 2017.

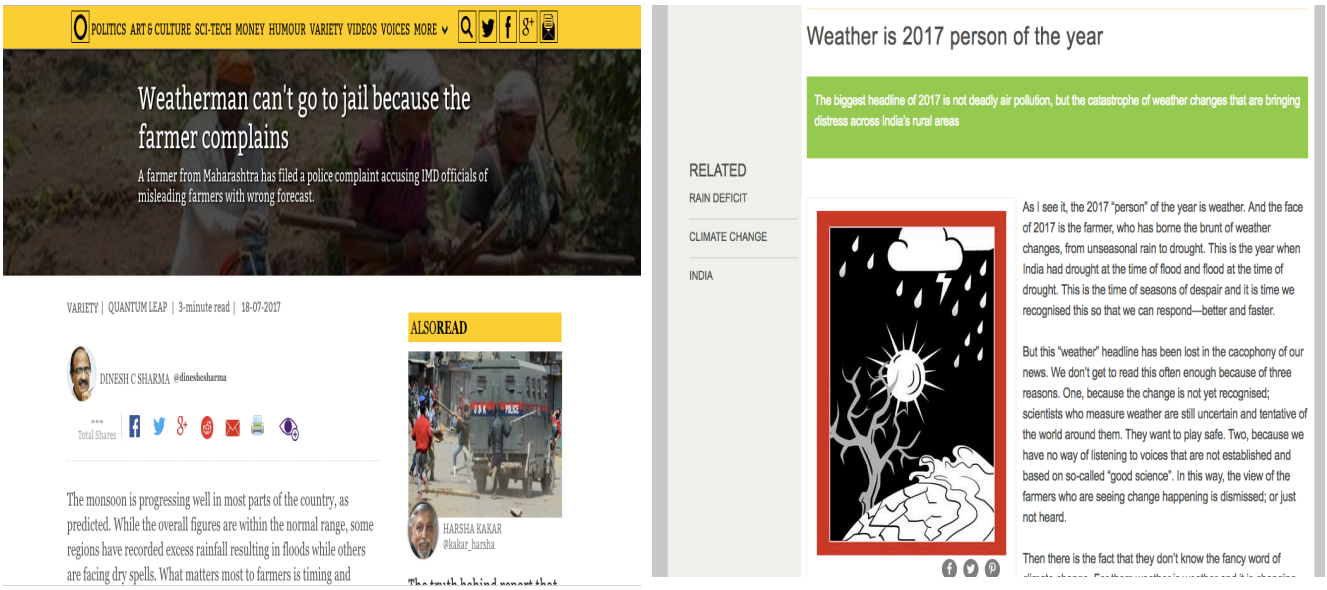


Figure 5: News report covering farmer complaint against IMD; an editorial names Weather 'person of the year'

Around the same time as farmers filed the police case in early 2018, the premier environmental magazine of India, *Down to Earth*, carried an editorial written by well-known environmentalist Sunita Narain headlined, "Weather is 2017 person of the year."[12] In it, Narain writes, "in my view, the biggest headline of 2017 is not the toxic and deadly air pollution in our cities—which is bad, very bad. But it is not half as bad as the catastrophe of weather changes that are bringing widespread human grief and distress across India's rural areas". In the editorial, Narain argues that the farmer is the "face of 2017" (differentiating person from face), bearing the brunt of devastating weather changes from unseasonal rain to drought. Narain berates the urban-biased media for largely ignoring this ongoing catastrophe partly because it is a gradual and often unspectacular process of environmental change that is often more acutely experienced by rural communities. While this editorial is fascinating in several ways, it is most interesting in its

[12] Sunita Narain. 2018. 'Weather is 2017 Person of the Year'. *Down to Earth,* 31 January.

personification of the weather and the connections it makes to global climate change. Ongoing transformations in weather patterns, it argues, is devastating to rural lives and livelihoods. Quite obviously, weather phenomena – rainfall, but also frost, hailstorms, wind, and temperature fluctuations – are critical to the intricate temporality of agricultural production. Its vagaries and uncertainties, now exacerbated by the specter of anthropogenic climate change, can destroy crops, and bring socio-economic devastation.

As Peterson and Broad (2009) note in their review of anthropological literature on weather and climate, scholars have long theorized the ways that weather shapes human beliefs and action. However, while often incorporating the weather into their descriptions of place, events and conversations, they note that anthropologists have not always treated weather as an agentive force shaping culture and politics. In the past three decades or so, there has been a marked resurgence of interest in weather matters, characterized by several distinct lines of inquiry: traditional and scientific knowledge about climate; vulnerability, risk and resilience; technologies of forecasting and prediction; as well as social justice and human rights.

This chapter engages the weather as experienced by farmers in Malwa through a focus on perhaps the most crucial season of the year: the monsoon, or the 'rainy season'. Rain is perhaps one of most longstanding objects of concern to farmers. The monsoon season, which delivers the bulk of South Asia's rainfall, is the beginning of the agricultural year and sets off a spurt of events, shaping everything from cropping patterns to the prices of agricultural commodities, from rates of interest in local credit and debt markets to the timing and occurrence of engagements and weddings, from patterns of grain storage to aquifer replenishment. It brings social worlds into being even as it can quickly unmake them. It is both densely material as well as deeply symbolic, shaping how people relate to their lands and to each other, to pasts and to

futures, to myth and history. In this chapter, I trace the events of a single monsoon season (roughly between June and October) in 2019 to understand how farmers grapple with the uncertainty of rainfall. The season that I witnessed was peculiar and extreme – following a scorching summer, the monsoon season in Malwa began as expected and the rain was plentiful. Then, two weeks into the season, it suddenly vanished and the land was dry for about twenty days. This long dry spell was calamitous for the crop. When the rain resumed again, however, the showers were heavy and continuous, inundating entire fields. What I describe in the pages that follow is hardly a 'normal' monsoon, but in its depiction of this extreme weather also points to the constitution of 'the normal' and highly contextual and differentiated experiences of it.

While the uncertainties of the rain remain the broad focus of this chapter, I show that the rain in itself does not quite capture the specific risks of agriculture in the current moment. As I show, the ecological risks of farming are exacerbated by climatic change which alters rainfall patterns and increases the incidence of extreme weather events. At the same time, as scholars of disasters have ably demonstrated, there is no such thing as a natural disaster. Although what I recount in the following pages does not perhaps classify as a 'disaster' per se in that it was not a dramatic calamity with few human casualties, it nonetheless shows how the exigencies of the rain intersect with and compound existing inequalities and risks within contemporary social and political ecologies. That is to say, it is certainly true that rain – in its presence and absence, scarcity and excess – is a powerful and agentive phenomenon whose force and rhythms shape social worlds. At the same time, rainfall has little meaning in an abstract sense. Rather, rain – as imagined, predicted, experienced, remembered – always exists in dynamic relation with specific crops, landscapes and livelihoods. Its materialities and meanings can only be understood through these particularities. Here, I take up Beth Cullen's argument that "[l]earning to consider weather

patterns, such as the monsoon, as vital actors in our entangled world is an urgent necessity in light of increasingly uncertain futures" (2020: 2). Moreover, where scholars have examined these effects, the tendency has naturally been to focus on extreme weather events and disasters – drought, famine, flood, cyclones, hurricanes, and so on. This chapter, however, focuses on more mundane aspects of the monsoon, exploring how modes of prediction and practices of aspiration intersect with rain to shape everyday decision-making among farmers.

1.1 'Can the Gambler Ever Win?': On Stakes, Bets and Unfavorable Odds

In mid-July, the rain stopped abruptly. Despite a shaky start to the sowing season, it had been completed successfully and farmers across Malwa were pleased with the early days of the monsoon rain. The soybean had germinated, sprouting tender green leaves. The anxieties of the harsh summer heat and dwindling water supplies were abated. But then the skies cleared and the sun shone bright day after day, not a cloud to be seen for miles. One clear and dry day turned into another into another. Not only was the growth of the soybean plant stagnant, the dry weather stalled other crucial tasks. Only after it rained could farmers spray the necessary pesticide and weedicide on the crop. The abatement of the rain had placed everything and everyone in a state of suspended animation. Now everything was delayed.

One afternoon, I was sitting in the village square on a cement platform under a *neem* tree, sometimes used to conduct village meetings but usually as a shady spot for older men to play cards or take an afternoon nap. I was speaking to a retired schoolteacher of the Sutar (carpenter) caste about the pause in the rain. It had been one week since the last drops had fallen and forecasters were predicting another week of the dry spell. The predictions for the monsoon were good, but who knows what happened? he bemoaned. Now the anxiety was palpable. The

contradictions of the season were not lost on anyone – just as central India was facing down a potential drought-like situation, there were reports of floods in northern and eastern India. As we discussed the likely effects of the dismal forecast on the soybean crop, we were joined by the village patel (traditional head), a lanky mustached man, who also ran a small snack stall abutting the village square. As he opened the wooden door of his shop, he joined our conversation of lament about the runaway rain.

Eager to display his educational credentials, the' the Indian farmer is born in debt, lives in debt, and dies in debt'."

"Why did he say that?" I ask, curious to hear his explanation.

"*Bharat krishi pradhan desh hai. Krishi monsoon ka jua hai. Jue me hamesha haar hoti hai.* (India is an agrarian country. Agriculture is a gamble on the monsoon. There is always defeat in gambling)".

"But sometimes even gamblers win, don't they?" I question in response.

"If there is even one successful gambler, show them to me…Can there ever be *success* [uses the English word] in gambling?

I laugh. "Some people make lakhs with gambling!"[13] But I am only venturing a guess.

He shook his head. "Yes, but then they lose it all again… Then you are back to square one. That's what farming is like too."

It is now a truism to speak of the monsoon as "India's real finance minister" and to argue that India's economy is a gamble on the monsoon.[14] My rural interlocutors also spoke this

[13] One lakh rupees (Rs. 1,00,000) is roughly $1372.

[14] Interestingly, in colonial India, the rain was at the center of debates on the distinction between gambling and market speculation. Rain gambling, or *barsat ka satta*, a popular pastime in Rajasthan was brought to colonial commercial centers of Bombay and Calcutta by Marwaris, a trading community. Debates around rain gambling and its eventual prohibition brought to the fore broader discourses around risk taking, market ethics, and moral degeneracy (see Birla 2009).

language. Many parts of western and central India receive 90 per cent of their total annual precipitation during these monsoon months, making this rainfall crucial to both rural and urban communities across the sub-continent. Since irrigation systems are limited to about forty per cent of the cultivated area of the country, the majority of farmers depend entirely on this rainfall for cultivation. Moreover, it is the rain that not only shapes agricultural growth for the monsoon season but also determines decisions about what to sow in the winter and beyond. When farmers recounted the parameters of their crop choices, they would often add an addendum: *pani ho tho* (if there is water). Although we cannot draw a direct equivalence between rainwater and aquifer replenishment, the monsoon rain is key to groundwater recharge and shapes prospects and possibilities for the year to come. Farm livelihoods therefore depend almost entirely on the vagaries of the monsoon rain – from when to sow to when to spray, from crop choices to crop yields.

So what is the monsoon and why is it viewed as a gamble for millions of farmers across South Asia? As an atmospheric event, the monsoon is a weather system of seasonally reversing winds which produce wet and dry seasons. Among many monsoon systems across the world, the Asian monsoon is the "greatest in scale and consequence" (Amrith 2018: 22). In South Asia, the monsoon comes into being at the nexus of multiple simultaneous phenomena. In part, it is conceived by some as a giant land-sea breeze caused by the differential heating of ocean and land. Moreover, it is also the seasonal manifestation of the movement of the intertropical convergence zone (ICTZ), a narrow zone near the equator where northern and southern airs converge to produce low atmospheric pressure. Further, the monsoon is aided by the Tibetan plateau which provides a region of elevated heating, resulting in strong vertical air currents and the formation of a high pressure system. Each of these elements shape the dynamics of the

monsoon and the rainfall that it brings. An influx of air draws moisture over the Indian Ocean, and once these winds reach India, they cool and ascend, enabling cloud formation which produces heavy precipitation.

The etymology of the word 'monsoon' can be traced to the Portugese *moncao*, which in turn is derived from the Arabic *mausim*, meaning season. The term *mausam* is now used in the Hindi and Urdu languages to refer to the seasons or even simply the weather. There are two such reversals of the wind, one blowing from the northeast in the cold season (from November onward) and another from the southwest in the hot season (from May). It is the latter, the south-west monsoon, that is most significant to much of the subcontinent and which I will discuss here.

As Lindsay Bremner writes, we can think of "the monsoon as a seasonal designer of the earth, its grounds, its terrestrial ecosystems and its politics" (2020: 7). In linking inter-oceanic spaces, uniting wind, earth and sky, and shaping politics and economic life, the monsoon raises crucial questions of connectivity, development and geopolitics (Gupta 2012). As a "travelling phenomenon", it marks time and space in a particular way – indeed, the delay of the monsoon is the stuff of national news and living room conversation. According to the established monsoon calendar, it hits the south-west coast of Kerala around June 1 every year, slowly inching its way upward through the country – reaching Mumbai ten days later and New Delhi some five days after that (Gupta 2012: 518). By late June, satellite imagery shows the entire subcontinent covered in a vast grey swathe of rain clouds. While the seasonal variation in wind associated with the monsoon is crucial to interoceanic trade, to land-based residents, it is the variation in rainfall brought about by these wind reversals that is most significant.

Using climate simulation models, scientists predict that the pattern of the monsoon is likely to change as a result of global warming. The increased warming of the Indian Ocean, for

instance, is likely to bring more rainfall to the region (potentially a five to ten per cent increase). However, it is *intra*-seasonal variability in the monsoon that most affects farmers and this is far more difficult to predict (Turner and Annamalai 2021). There continues to be much uncertainty around the prediction of the number of flood days or break (dry) days within the monsoon season. Significantly, some researchers have found that the increase in extreme rainfall events will have a greater impact on central India (including my field sites). Currently, however, the evidence of climate change impacts is not entirely clear and the language of climate change itself was completely absent in my field sites (although farmers connected declining rainfall to a lack of care for the environment, mainly deforestation).[15]

In her review of South Asian climate history, Sarah Carson (2020) shows that historical work on climate and weather can be located along a continuum between two poles wherein nature is treated either as a discursive construction and mode of reasoning or as a geophysical reality shaping historical events. This chapter engages with both aspects – the monsoon as it emanates in discursive spaces and as a material formation. Indeed, historians have argued that British colonial administrators in India saw the monsoon as a definitive feature of the landscape, shaping its dramatic and exotic contrast with British weather (most likely since the three colonial centers of India – Bombay, Calcutta and Madras – were coastal cities with intensely tropical weather). Apart from the physical phenomena of the annual rains that shape the economy and ecology of the subcontinent, the idea of the monsoon emerged during the colonial period "as a metaphor for India as the tropical and the agrarian colony" (Singh 2010: 3). Significantly, ideas of the monsoon figured prominently in discourses about health and disease in the tropics,

[15] Ironically (or perhaps not), the only time I encountered the use of the term climate change was when I visited a Brahmin priest expecting to hear about rain rituals and moral decline but was instead lectured on the effects of climate change and pollution.

figuring as an object of fascination and fear for European travelers and fuelling a form of climate determinism (Arnold 2005). Describing the humidity and wetness of the season to their countrymen back in the metropole, British officers wrote that "the ground lay "like a soaked sponge", the air was "a vapour bath", collars wilted as they were placed on the neck, books disintegrated, and boots grew green with mold overnight" (Anderson 2005: 255). These conceptions of climatic difference then shaped conceptions of cultural and racial hierarchy as well as theories of disease, health and sanitation. Some commentators even attribute the concept of the monsoon to colonial and later nationalist projects to unite a divided subcontinent in their collective anticipation of the rain clouds every June.[16]

Knowledge about temporality, spatial spread, and quantity of rainfall was central to colonial statecraft, relevant to the protection of colonial officials, the calculation of agricultural revenues, and preparation for drought, floods, and famine (Singh 2010). As historian of science Katherine Anderson (2005: 267) writes, "In a sense, the Indian monsoon and the Indian economy mirrored each other in the concentration of their effect. The Indian economy was single-mindedly focused on its grain harvests. Indian taxes to administer the country and pay dividends to British creditors came from the satisfactory arrival of the rains." Given the centrality of the rain to colonial capitalism, it is unsurprising that the monsoon, and the weather more broadly, was reconstituted as an object of science through modern meteorology.

As early as the 1830s, the British government solicited weather and crop reports from the revenue administrations of major regions, and meteorology was established as a branch within the department of agriculture, revenue, and commerce in the 1870s. The centralized Indian Meteorological Department (IMD) was set up in 1875, and its mandate was further propelled by

[16] Mukul Kesavan. 2009. The last Englishman is the weatherman. *Mint*, August 20.

the famines of 1876-78 across large parts of British India in order that reliable information about rainfall could be collected and the government could prepare accordingly. The IMD continues to perform this critical work of prediction in the present, and has been joined by a number of private weather forecasting companies, which tailor their data to the needs of clients in specific sectors such as electricity, insurance, and oil and gas extraction. However, as I show in the next section, meteorological knowledge is itself rife with uncertainty and exists alongside other modes of weather prediction in the countryside.

1.2 'That's not Real Rain': Practices of Anticipation and Prediction

Nearly all discussions of the monsoon begin with that which precedes it, the long and scorching summer heat that blazes across South Asia – the hot winds that exhaust and sicken, the sharp sun that pierces the skin, the dryness that parches and cracks the soil, coloring the landscape a dusty and dull yellow. The summer in Malwa is long and hot – the harvest of the wheat begins in March and most agricultural work ends in April. But the summer months are hardly uneventful – in April, wedding season begins. Then, farmers plough their fields and clear new ground. Women make *sev* (a savoury item), potato chips and other snacks. Yet, the summer is also a time of anticipation, waiting for the rain, observing the movement of the clouds, and hoping for a respite from the endless and grueling heat. But the anticipation does not end with the first raindrops but rather continues through the monsoon season, as I show below. The season is, of course, not entirely predictable nor is the rain evenly spread out – just as waters ebb and flow, so too does the sky cloud and clear. Anticipation is a mode of existence that undergirds the monsoon season and indeed, agrarian life itself. One could argue that a farmer's existence is oriented around an anticipatory mood – of waiting, expectation, prediction. However, this mode

of attending to the world and its unpredictability is not premised on control and total preparedness. Rather, "People sense and mediate shifting monsoon materialities through their bodies and emotions, becoming intermeshed with the more-than-human weather-world through mundane acts of dwelling" (Cullen 2020: 7). In particular, June is the month of anxious waiting, something akin to an athlete readying herself at the start line for a long and grueling marathon.

In the early days of June, it began to rain in Pipliya – sometimes a soft drizzle that cooled the air, sometimes a hard downpour that made the local streams overflow their banks. Although forecasts reported that the monsoon had only just reached the southern coast of India and would potentially be delayed by a cyclone forming in the Arabian Sea, I wondered aloud to everyone I met: so has the monsoon season begun? When I asked Gopal, whose hut I had rented, about the previous night's showers, he scoffed in reply:

> That was nothing! That was just to wake up those who are still asleep. It gives the lazy people a chance to start cleaning their seed, preparing the land, and settling the roof tiles for when the actual monsoon arrives.

Gopal, and many others, insisted that this was not "real rain" – it was simply a sign that the rain was on its way. It was a signal that the fields must be ploughed and fertilized and the seed kept ready so that when the rain descends to the earth, everything would be ready for sowing. Another elderly man rubbished my question. It is only when the earth is completely soaked that it is time to sow. "At this point, where is the water on the surface? It rained but it has all gone into the ground, *zameen ne choos liya* (the earth has sucked it all in). But the earth is still thirsty, we will know if it is time to sow when the ponds and streams are brimming with water. This is just the early stage."

In the local calendar, the monsoon was believed to generally arrive between June 20 and 30, most likely by the 25th or exactly five months following the winter festival of Sankrant

(usually in mid-January). Most sowing is complete by early July. As farmers prepare their fields, they read the signs of the earth, wind and sky to predict when the rain would arrive, how much it would rain and whether it would be a good monsoon. This is true of all communities whose lives and livelihoods rely on the weather – fisherfolk, farmers, sailors, pastoralists. Indeed, the subfield of ethnoclimatology (Orlove et al. 2004) documents the varied ways in which groups across the world deploy astronomical, atmospheric and botanical indicators to forecast climate conditions. While it is difficult to ascertain the levels of belief in the certainty of predictive signs, they remain a crucial part of local modes of anticipation. They are complex and layered, natural and supernatural, spanning multiple temporalities – from the seasonal to the everyday.

Through men and women elders in the village, I documented a range ways of predicting rain. An intimate reading of these signs – the clouds, the wind, the animals – all united within a living ecology of interrelatedness. The sighting of particular birds, the shape and movement of the clouds, the shade of grey in the sky. These proverbs and premonitions range from the general to the specific, from the irrefutable to the unlikely (see also Strauss 2003 on weather proverbs in Leukerbad, Switzerland).

> If the first rains arrive during the mrigashira*, then there will be a good harvest
> If there is no rishawali, then it will not rain, no matter how hot it gets.
> If the first rains arrive during adra*, the harvest will not be good.
> If it rains during rohini*, then the harvest will be poor.
> If there is a strong wind from the northeast, then it will rain that day.
> If rain falls on Amavasya, then the sowing will go well.
> If a buffalo looks toward the sky and takes a long breath, it will rain that day.
> If you see ants taking their eggs from lower to higher ground, then it will rain soon.

*These refer to lunar mansions in the Hindu astrological calendar (*nakshatras*).

As she patiently cleaned soybean seed for this season's sowing, an elderly Prajapat (Kumar, or potter caste) woman told me about ways of predicting when the monsoon would arrive. One particular sign is what is locally called *rishawal* or *rishawali*. In the local milieu,

people note that when the clouds move quickly and speedily to the west, this means that the rain will come in the next fifteen to twenty days. The clouds, they say, going toward the sea (*samundar)* to catch the rain and bring it here. "*Badal daudi-daudi jaye idhar* (the clouds go running this way)". This happens early in the morning and the entire sky goes dark, but it ends in a few hours. This occurs for about three days and then we know that the rain will arrive 15 to 20 days later. "Of course", she told me, "now you don't have to look at the clouds, you can just look at the television!"

Certainly, monsoon meteorology is also critical to the region's economic and social life. Yet, as I noted in the previous section, uncertainty is built into the science of weather. Predictions fail, but that is not because they are poor predictions but that is the nature of predictions themselves. As Renzo Taddei (2012) astutely points out, weather and climate forecasts are only distributions of probabilities (for example, an 80% chance of rain), although interpretations of these forecasts tend to hold meteorologists wholly accountable for weather events. Each forecasting model might offer different predictions and the forecasts change over time. The high variability of rainfall patterns coupled with the emerging uncertainties of climate change make accurate monsoon forecasting ever more difficult.

For instance, initial forecasts made by the IMD in April for the 2019 monsoon season highlighted a weak El Nino and positive Indian Ocean Dipole effect which would produce a normal monsoon that would be well-distributed across the country (though another model forecasted below-normal rainfall). There are also competing forecasts made – in the first forecast, Skymet, the foremost private weather service company, predicted a below-normal monsoon as compared to the state agency's prediction of a normal monsoon. While the initial prediction for 2019 was a 'normal' or 'near normal' monsoon, in the end, it was a season of

excess rainfall, the heaviest in 25 years. In many ways, it was a peculiar season, beginning with deficient rain and ending in excess, bookended by cyclones. Pre-monsoon showers were deficient, the monsoon landed on the southern coast more than one week late and the month of June saw intense heat waves and a 30% deficiency in rainfall. Overall, the season saw a total of 560 extreme rainfall events (extremely heavy rainfall within a 24-hour period) across the country, which was 74% more than the previous year. It was also the second-highest recorded September rainfall in 102 years. It was clearly a monsoon of extremes.[17]

As noted earlier, various intersecting factors shape the duration, spread and strength of the monsoon. In 2019, scientists feared that a weak positive El Nino Southern Oscillation (ENSO), a warming of the Pacific Ocean which reduces moisture incursion to Asia, would weaken the monsoon. However, there were hopes that a positive Indian Ocean Dipole (IOD) effect would counteract the El Nino to strengthen the monsoon. This turned out to be correct, not only compensating for the slow start to the season but leading to extremely heavy rainfall particularly across central India. This positive Indian Ocean Dipole event (also known as the Indian Nino) was one of the strongest ever on record. Briefly, this involves irregular oscillations of sea surface temperatures in which the western part of the Indian Ocean becomes alternately warmer (positive phase) and colder (negative phase) than the eastern part.[18]

Although its margin of error in monsoon forecasting has decreased over the past decade, the IMD faces continuous criticism from the general public for its supposed wrong forecasting. According to a 2019 report, in the last eleven years, the actual rainfall matched the forecast only half of the time. This is due to the inherent uncertainty of climate modelling. It is no surprise

[17] The total rainfall in the sub-district of Tarana where my field village was located was 2029mm for the 2019 season. This was a more than double was the previous year's (2018) rainfall level of 981mm.
[18] The same 2019 dipole is regarded as the cause of floods in East Africa and extreme dry weather and bushfires in Australia later that year, signaling the inter-continental and inter-oceanic reach of this weather phenomenon.

then, as Renzo Taddei (2012) writes, that distrust of forecasters is fairly common, with popular revolts against priests in the wake of droughts in ninth-century Mexico and even physical assaults against meteorologists in contemporary Brazil. In my field sites, there was a more complex attitude toward meteorological predictions – most people were aware of and referred to weather forecasts, though there were varying degrees of cynicism regarding the truth value of these prognostications. One man joked about scientists, "When they say it will rain, the sun shines bright. When they say it won't rain, the streams overflow".

I had a debate with a young farmer about this. He questioned the veracity of the forecast, saying that it was rarely accurate. This did not mean that he didn't believe in meteorological forecasting – he recounted watching a cricket match played in England on TV wherein the prediction of rain was stunningly precise. I insisted that it was only a matter of probability and that this didn't mean the forecast was wrong per se, adding that it was not entirely dissimilar to the uncertainties associated with local divinatory modes of locating groundwater. He countered, then why do you call that superstition and not science? I replied that that these modes of detecting water were indeed scientific in part since they were likely based on experiential knowledge and modes of reasoning.

In a fascinating linguistic analysis of rainfall forecasting in Brazil, Karen Pennesi (2013) shows the overlaps in cultural models of 'predictions' and 'lies' as statements that provide information, but that can both turn out to be inaccurate or false, irrespective of the teller's intent to deceive. Often, forecasters are viewed as liars for various reasons: their statements are viewed as unhelpful when offered, especially when drought is predicted; forecasts are seen as inaccurate in light of the farmer's individual experience and observation (which can be quite different from a regional forecast), and owing to a general mistrust between farmers and government-

sanctioned scientific experts. In Pipliya, some farmers had signed up to receive messages from the agriculture department with monsoon forecasts – but I did not find anyone taking it seriously enough to stop or start sowing solely based on those advisories. It was largely their own first-hand observation and historical knowledge that formed the primary basis of decision-making.

In the introduction to this chapter, I discussed a controversy around the timing of the first heavy rain – a critical moment that shapes the time of sowing. This issue surfaced in the 2019 monsoon as well, although in this case, farmers did not lay any blame at the hands of the meteorological department. Sowing necessitates a tricky balance between wetness and dryness. In order to sow successfully, the soil must be sufficiently damp (at least a palm's length under the ground) but not so wet that the wheels of the tractor can get stuck in the wet mud. Most farmers wait for a few rounds of pre-monsoon showers before the ground is sufficiently moist for sowing (although there is increasingly a rush to sow in order to harvest early and plant a second crop).

After sowing, the rain forecast is perhaps even more important. "Double *boni*", or double sowing, is quite common – nearly every year, some farmers are unlucky enough for heavy rain to fall immediately after sowing, preventing the seed from taking root. Usually, sowing is finished in the morning or early afternoon and if there is a downpour that evening, re-sowing is necessary. Most farmers saw this as par for the course, noting that it was inevitable and unpreventable. It happened to someone or the other nearly every year. When I asked if there was any way to avoid this, they only laughed, insisting that such a fine-grained prediction of rain was quite impossible. The only preparation was to always keep extra seed just in case you had to sow a second time.[19] Indeed, in 2019, some farmers even had to sow a third time. Ultimately, regardless of the

[19] Saving extra seed from the previous harvest is essential since the price of soybean typically rises during sowing season. One quintal, which usually costs Rs. 3000, sells for between Rs. 3500-4500 during this time.

forecast, a farmer must plant. Not doing so or delaying indefinitely is hardly an option. The forecast can, if anything, simply serve as a broad guide.

In general, farmers were less skeptical when it came to the signs of the natural world or the prophesies of local priests and diviners. For instance, they insisted that when the *pandaji* (priest) said it would rain, it *definitely* would. While I was not privy to his predictions in the throes of spirit possession (women generally watched from a distance), I was told that the priest prophesied that it would rain for all the days of Navratri, a Hindu festival spanning nine nights (which it did). For later in the year, he also predicted one bout of *maavta* (post-monsoon winter rain) and a possible hailstorm which could be prevented with prayer. People accounted for the uncertainties and variations of those predictions in a way that they did not do for the meteorological forecasts (even if they might believe in scientific predictions as well). Religious prophesies, as scholars have argued, are inherently non-falsifiable. Indeed, to those predictions in particular, farmers always added certain caveats. For instance, maybe it won't rain *here*, but it *will* rain *somewhere* in the area. Maybe it will only rain *a little bit*, but it *will still rain*.

So too with rainmaking rituals – the village headman insisted to me that when the women of the village went to the temple of Chappan Maharaj to pray for rain, they would never come back empty-handed, rain would always accompany them – even if it was just a few drops. Like Karen Pennesi's (2013) Catholic interlocutors in Brazil, for the devout farmers in Malwa too, "scientists attempting to predict rain are guilty of arrogance because they are claiming to know what only God can know" (778). In part, this has to do with the specific spatialities and temporalities of rainfall and of forecasts which do not always overlap, as I detail in the next section.

1.3 Where did it Rain? Materialities of a "Normal" Monsoon

Quite often, work in agrarian history and anthropology cites 'the failure of the monsoon' as the prelude to a range of events, both mundane and dramatic: debt, farmer suicides, political upheaval, famine. Yet, this framing fails to capture the texture and rhythm of monsoonal landscapes and livelihoods as they take shape during this tumultuous season. The converse is also true as represented by the category of the 'normal monsoon', a definition used by the Indian Meteorological Department. According to this definition, a normal monsoon occurs when the total amount of rainfall between the months of June and September is within ten percent (plus or minus) of the average rainfall. Excess rainfall is therefore when the rainfall is higher than the average by more than ten per cent while deficit is when the rainfall falls below the average by more than ten per cent.[20] Not only is this a large margin that falls within the normal, the size of the country means that a 'normal' season could mean drought in some parts and floods in another.

To speak of either a good monsoon or a poor monsoon in the abstract makes little sense to the average farmer since their experience with the rain is highly variable based on location. Averages also cannot capture the dynamic rhythms of the monsoon since a farmer is also concerned with timing and spread of the rain. Receiving the entire season's rain in the span of one day might bring add up to normal rainfall in abstract numbers but would locally index a calamitous flood-like situation. For most people, rural and urban residents alike, it is not average annual rainfall that matters as much as short-term temporal variations – the breaks in the monsoon that can devastate crops, the intense burst of rain that can cause flooded streets. Even in

[20] Specifically, normal monsoon is considered to be 96-104% of the Long Period Average (LPA) of 89 cm for the entire four-month season. Above normal is between 104-110%, below normal is between 90-96% and drought is below 90%. The LPA is the average rainfall over a fifty-year period from 1951-2000.

'normal' monsoon years, the uneven spatial and temporal distribution of rain is crucial to the dynamics of agricultural life.

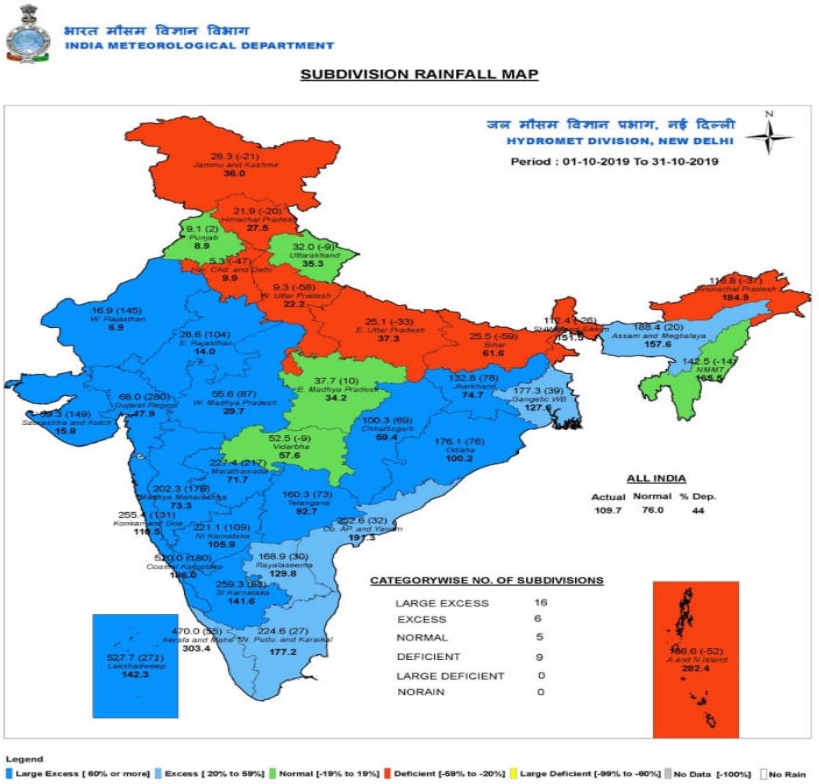


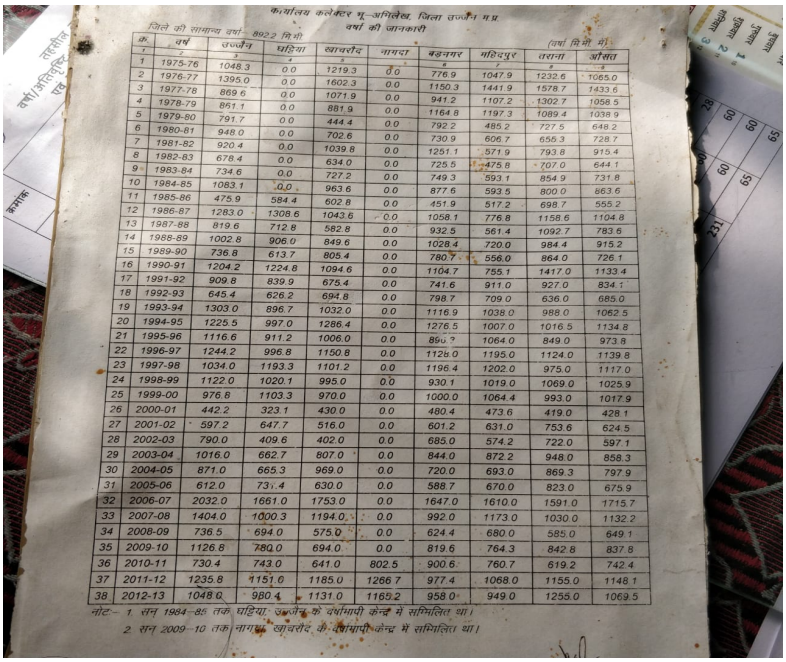
Figure 6: IMD sub-division map depicting cumulative rainfall (between June 1-October 31, 2019)

Of course, there are forecasts made at various scales (including regional sub-divisions) through local weather-stations and computer modelling as well as according to various time frames. However, ecological and topographical diversity across the region as well as the inherent complexity of weather systems makes it difficult to offer fine-grained predictions for the monsoon at a scale relevant to a farmer. Variability in prediction also increases for short-term forecasts and within small geographical areas. Given the number of complex variables involved, "no computer modeling can provide a seasonal climate forecast that is any more than a distribution of probabilities for specific future climate configurations" (Taddei 2012: 257).

However, forecasts are never neutral scientific prognostications but seismic political-economic events – as the monsoon forecasts begin for the year, everyone is paying attention: the farmer, the politician, the futures trader, the CEO. A bad monsoon has ripple effects – on rural consumption, food prices, export policies, transportation loads, and much more. The monsoon and the market are deeply intertwined. Given this significance, forecasts are generally handled with care – predicting a poor monsoon can have ripple effects across the economy.

Therefore, even though the meteorological department makes a range of forecasts based on different temporalities – from the 'now-cast' of four to six hours to the longer seasonal forecast – weather events do not always unfold as predicted. First, the question of scale is crucial since the rain does not fall evenly or predictably. As such, this meant that oftentimes it would rain heavily in people's fields (located at some distance from the village) but not in the village itself. Rain might vary between adjacent villages as well. Second, amounts of rainfall do not mean the same thing everywhere in that its implications for farming depend on factors like elevation and soil type.

The temporality of rain is also crucial, another aspect of the monsoon that is not captured by these aggregate figures. Indeed, rain at the wrong time can be devastating. As the Beed incident recounted earlier shows, farmers tend to sow their crop soon after the pre-monsoon showers (generally lighter rain) hit and the soil is moist. Following this, they hope that it does not rain immediately (this could wash the seed away) but after a day or two. Rain is generally good – but rain at the wrong time can be destructive. Equally, rain should ideally be consistent - as noted earlier, the break in the monsoon for over two weeks means that crop growth stagnates and pests and weeds can proliferate especially since spraying is also dependent on the timing of the rain. Duration and periodicity are crucial.



कार्यालय कलेक्टर भू–अभिलेख, जिला उज्जैन (म.प्र.)
वर्षा की जानकारी

जिले की सामान्य वर्षा – 892.2 मि.मी. (वर्षा मि.मी. में)

क्र.	वर्ष	उज्जैन	घटिया	खाचरौद	नागदा	बड़नगर	महिदपुर	तराना	आँवत
1	1975-76	1048.3	0.0	1219.3	0.0	776.9	1047.9	1232.6	1065.0
2	1976-77	1395.0	0.0	1602.3	0.0	1150.3	1441.9	1578.7	1433.6
3	1977-78	869.6	0.0	1071.9	0.0	941.2	1107.2	1302.7	1058.5
4	1978-79	861.1	0.0	881.9	0.0	1164.8	1197.3	1089.4	1038.9
5	1979-80	791.7	0.0	444.4	0.0	792.2	485.2	727.5	648.2
6	1980-81	948.0	0.0	702.6	0.0	730.9	606.7	655.3	728.7
7	1981-82	920.4	0.0	1039.8	0.0	1251.1	571.9	793.8	915.4
8	1982-83	678.4	0.0	634.0	0.0	725.5	475.8	707.0	644.1
9	1983-84	734.6	0.0	727.2	0.0	749.3	593.1	854.9	731.8
10	1984-85	1083.1	0.0	963.6	0.0	877.6	593.5	800.0	863.6
11	1985-86	475.9	584.4	602.8	0.0	451.9	517.2	698.7	555.2
12	1986-87	1283.0	1308.6	1043.6	0.0	1058.1	776.8	1158.6	1104.8
13	1987-88	819.6	712.8	582.8	0.0	932.5	561.4	1092.7	783.6
14	1988-89	1002.8	906.0	849.6	0.0	1028.4	720.0	984.4	915.2
15	1989-90	736.8	613.7	805.4	0.0	780.7	556.0	864.0	726.1
16	1990-91	1204.2	1224.8	1094.6	0.0	1104.7	755.1	1417.0	1133.4
17	1991-92	909.8	839.9	675.4	0.0	741.6	911.0	927.0	834.1
18	1992-93	645.4	626.2	694.8	0.0	798.7	709.0	636.0	685.0
19	1993-94	1303.0	896.7	1032.0	0.0	1116.9	1038.0	988.0	1062.5
20	1994-95	1225.5	997.0	1286.4	0.0	1276.5	1007.0	1016.5	1134.8
21	1995-96	1116.6	911.2	1006.0	0.0	896.2	1064.0	849.0	973.8
22	1996-97	1244.2	996.8	1150.8	0.0	1126.0	1195.0	1124.0	1139.8
23	1997-98	1034.0	1193.3	1101.2	0.0	1196.4	1202.0	975.0	1117.0
24	1998-99	1122.0	1020.1	995.0	0.0	930.1	1019.0	1069.0	1025.9
25	1999-00	976.8	1103.3	970.0	0.0	1000.0	1064.4	993.0	1017.9
26	2000-01	442.2	323.1	430.0	0.0	480.4	473.6	419.0	428.1
27	2001-02	597.2	647.7	516.0	0.0	601.2	631.0	753.6	624.5
28	2002-03	790.0	409.6	402.0	0.0	685.0	574.2	722.0	597.1
29	2003-04	1016.0	662.7	807.0	0.0	844.0	872.2	948.0	858.3
30	2004-05	871.0	665.3	969.0	0.0	720.0	693.0	869.3	797.9
31	2005-06	612.0	731.4	630.0	0.0	588.7	670.0	823.0	675.9
32	2006-07	2032.0	1661.0	1753.0	0.0	1647.0	1610.0	1591.0	1715.7
33	2007-08	1404.0	1000.3	1194.0	0.0	992.0	1173.0	1030.0	1132.2
34	2008-09	736.5	694.0	575.0	0.0	624.4	680.0	585.0	649.1
35	2009-10	1126.8	780.0	694.0	0.0	819.6	764.3	842.8	837.8
36	2010-11	730.4	743.0	641.0	802.5	900.6	760.7	619.2	742.4
37	2011-12	1235.8	1151.0	1185.0	1266.7	977.4	1068.0	1155.0	1148.1
38	2012-13	1048.0	980.4	1131.0	1165.2	958.0	949.0	1255.0	1069.5

नोट– 1. सन् 1984–85 तक घटिया, उज्जैन के वर्षामापी केन्द्र में सम्मिलित था।
2. सन् 2009–10 तक नागदा, खाचरौद के वर्षामापी केन्द्र में सम्मिलित था।

Figure 7: Record of annual district and sub-district rainfall in Ujjain (1975-2013)

Rainfall is a highly localized phenomenon even though calculations of rainfall data are made at the district and sub-district levels. When I was looking at rainfall records in the Ujjain district collector's office, I could only find data for the tehsil (sub-district) in which my village was situated. Moreover, weather forecasts and agro-met advisories are only issued at the district level even though specific weather conditions can vary enormously within the district. As I painstakingly wrote down the numbers for each day in the season, I was often surprised at the figures I was looking at since they didn't seem to reflect my own observation and memory of the rain in the village itself. While I did not have the tools to take rainfall measurements in the village (and therefore, make a rigorous comparison of observation and record), the limited and partial evidence of an experiential disjuncture between the neat handwritten numbers on the pages of a ledger in the district office and the rhythms of life during my fieldwork suggest this. Experience of 'the rain' is highly differentiated and uneven temporalities, spatialities and topographies – this makes predictions difficult and distrust of forecasts more understandable.

1.4 'An Application to God': Rain Rituals and Political Rituals

Urjani is a rain ritual of the last resort in redressing the misfortune of suspended rain.[21] I had heard about this rite often – ever since the very beginning of my fieldwork whenever I asked the question: what happens when the rain doesn't fall? It is a strange thing to be an anthropologist, being trained in the necessity and value of 'being there', when the 'there' of being there entails an event of loss and tragedy? While I was curious about the ritual and asked people to recount the cycle of events and its meanings, I felt very guilty for even wishing that I could witness it first-hand. Ultimately, I did witness it – the combination of distress and odd luck.

While other rain rituals might be performed prior to the onset of the monsoon, urjani has a distinct temporality, usually performed following a long dry spell, after the sowing has been completed.[22] In July, when the rain ground to a halt, I began to hesitatingly ask people whether there was any thought of performing the ritual. Most dismissed my question, saying that it would rain soon enough. I was told that it was only when it did not rain at all for *at least* fifteen days that the ritual was performed. In the interim though, other prayers were offered at various temples in the village, *bhajans* (devotional hymns) were sung – but to no avail. For twenty days, people in the entire region looked toward the sky, life and livelihoods in a state of suspended animation. A drought seemed likely. By late July, the urjani ritual was being performed in villages across Malwa.

[21] There is a long and rich anthropological tradition of studying rainmaking rites, particularly in eastern and southern Africa, most famously with Isaac Schapera's *Rainmaking Rites of Tswana Tribes* (1971) and Elieen and Jack Krige' *The Realm of the Rain Queen* (1943).

[22] Fluctuations in the monsoon rainfall have been documented by British meteorologists who noted that 'intervals of drought', or what is now called the 'break monsoon', during which large-scale rainfall over the monsoon zone is interrupted during the peak months of July and August (though specific criteria for defining a break varies) (Rajeevan et al. 2010).

At the time, I took a trip to Mumbai to attend a course on the basics of weather dynamics in order to get a better grasp on forecasting models and weather systems. I was initially hesitant to attend the course precisely because of its timing and location – it seemed possible that the ritual would be performed when I was away but also since, in a testament to the unevenness of the monsoon, Mumbai had just witnessed devastating floods. Eventually, I went, returning to the village three days later. As I was trudging through the narrow village streets carrying my backpack and greeting acquaintances, I heard the chowkidar cry out, *Chula mat jalao, kal urjani hai!* (Don't light the hearth, tomorrow is urjani!) He had been sent by the village headman to make the announcement across the village.

The ritual itself is simple, its basic premise is this: nobody must light their kitchen fires that morning. Instead, villagers take their grain and cooking utensils to their individual fields and cook their food there. The preparation for the ritual is far more complex and drawn out than the prayer itself since it involves packing all the necessary items for cooking – utensils, wheat, rice, lentils, oil, matchsticks, incense sticks, sugar crystals, dung cakes, water. The preparation begins in the late morning so it is already sweltering when we reach the field of my host family and even hotter by the time the cooking is finished: dal (lentils), rice and *baati* (balls of baked wheat dough) are made on steel pots fueled by dung cakes. From each plot of land, then, one can see billows of smoke rising to the sky – a plea to Indra, the god of rain, to show mercy on them.

I witness the ritual in my host family's field. Here, Rekha, the eighteen-year old granddaughter of the family, first plants two sticks of *agarbati* (incense) into the dry ground adjacent to the soybean plants. Right next to the sticks, her mother places three mounds of ash (produced by the cakes of dung just used as cooking fuel for the dal). On the ash, the Rekha carefully places sugar crystals (*misri*) as well as grains of cooked rice and crumbled bits of *baati*

as tribute. She gets off her haunches and walks away, her aunt taking her place. Her aunt sits on her haunches and dabs bits of the sugar and wheat on the ash herself. Then the two women –

Figure 8: Performing the rain ritual; smoke billows from the ritual fire/hearth in a neighboring field

Rekha's mother and aunt – call out in near unison, "*Shaam tak pani patki dijo parmeshwara Inder!* (Make it rain by the evening Lord Indra!)", their call bookended by giggles, in part because I was filming their prayer on my phone. Both then lower their heads toward the ground without touching it – they pull the ends of their sari to the ground and then to their foreheads twice. "*Aai jajo accha kato!* (Come nice and hard!)", Rekha's mother prays. As she finishes, looking at the soil, she adds, "*Nattu sukhai giyo*! (It's completely dry!)" Later that afternoon, some claimed a few drops of rain allegedly fell – and those who believed were satisfied that the ritual had in fact worked.

Everyone had their own explanation of the ritual, its specific meaning and significance. Most stated that it was a simple *puja* (prayer) done in the fields to plead with the rain god, Indra. One lady said that the smoke was meant to make Indra angry. A group of men told me half-

jokingly that the act of leaving their homes and cooking in the fields instead was to give the appearance of an empty village, signaling that the lack of rain had driven everyone out of their homes in desperation. It was a way of showing Indra the desperation of the farmer. Analogies to this-worldly pleadings abound. One man, Kishorilal, who was well-known for his knowledge of mythology and religion told me, the *dua* (smoke) from the cooking fires were a sort of notice, an "application" sent to Indra who reigned over the rain. The Rajput headman of the village explained it with a different analogy: when you have a problem, you go to the doctor. This ritual is an instance us going to the biggest doctor of all (god).

The most common mythological story I heard about the ritual's origins went something like this. Earlier, farmers would do a puja to Indra raja (King Indra) every single year to request good rainfall. Then *bhagwan (*god, sometimes narrated as taking the avatar of Krishna, other times taking the form of an ascetic) saw this ritual in progress, and asked the villagers what they were doing and they explained. God, I was told, was upset at this, since farmers had to spend so much money and time every year to do this puja. In response, he turned the fields green and lush even before the rain fell, before the farmers had even sown their crops. Everything was green – even the pastures and wastelands. Indra, the god of rain, wondered why there had been no puja for him that year and came down to the earth to inspect what had happened. He saw that everything was green even without the prayer, without his rainfall, without his benevolence. Needless to say, he was furious and vowed to make it rain so hard and for so long so that the villagers would learn their lesson not to bypass his authority over the clouds. Krishna was now worried about Indra's ire – this rain would wipe out the entire population and destroy the land. He lifted a mountain (*govardhan*) with his little finger and gave all of the creatures of the world shelter and protection under it. The rain poured down, but nobody was harmed. Indra realized

that his plan had not worked. He admitted his mistake and arrogance. Krishna offered a compromise, saying 'If ever there is no rain for a long period of time, then the farmers will offer a puja to you, but not every year. You must try to make sure the rain falls on time.'

There are variations on this basic story: another version includes all the same elements but with a twist. In this version, when Indra sees that the fields are green prior to the monsoon rain, he approaches god and asks how this happened. God responds that he has made it so, and will continue to bring the crops even without the rain. He chides Indra for forcing the poor farmers to do a puja to him every year and vows to put an end to it. Indra became worried – if god made this happen every year, then people would manage without his rain and who would believe in him then? He begged for god to change his mind about this. God reached a settlement with Indra: make it rain on time, and if ever there is a problem (*sankat)* with the rain, only then farmers will offer prayers to you. And so the urjani ritual came into existence in the region.

While some villagers insisted that a few drops of rain fell following the ritual, others were more skeptical. The day after, I went to the home of a Kishorilal, an elderly man who was well-known for his knowledge of mythology and religion, to ask about the previous day's events. As I sat down in their living room, I politely asked how they were doing. His wife, poking her head out from the kitchen, immediately chimed in: "There's been no rain! All the soybean has dried up."

I asked, "Didn't you go to the field yesterday? To cook dal baati?"

She nodded. "Yes. But where is the rain even then?"

"There were a few drops (*chaanta*) that fell, I thought!" comes my reply.

Kishorilal intervened. “That came on its own. It didn’t come from that [the ritual]. *Vohi hoga jo khuda ka manjoor hai… Jitna bhi koshish karo.* (Only what god wills can happen... no matter how hard you try)”.

I continued. “But what about people praying at the shrine of Chhapan Maharaj?

He shook his head. “Yes, but it had no effect. None at all.”

I was confused so he explained. He insisted that the ritual could only be successful under certain conditions. First, expert astrologers and priests had to gather and loudly recite incantations to Indra. Kishorilal lamented that there were no such priests left in the area and nobody wanted to invest the time and money to truly satisfy the gods. Second, and relatedly, it would only work if at least fifteen to twenty villages came together to perform the ritual on the same day. It wouldn’t work if each village performed the ritual separately. The patels and sarpanches (village heads) must come together (*ikatrit hona chahiye*) and perform it collectively.

Kishorilal’s comments and laments point to the ways in which rain – or rather, the lack of it – has always been the site of political and moral critique. Here, too, the inefficacy of the rain ritual was tied, in his mind, to the lack of investment in the ritual itself as well as the absence of sufficient collective force and fervor. Rain-making, after all, is hard work. It requires an investment of time and resources. It requires genuine belief and spirited effort. In this sense, like all religious rituals, it is inherently non-falsifiable in that any failure to produce the intended outcome is always attributed to a failure on the part of the performers themselves – that they did not perform it correctly, they did not truly believe, and so on.

As A.R. Vasavi (1999) has noted, droughts are not just physical but also always moral and political phenomena. As a moral phenomenon, drought is interpreted as *karma*, linking the present to past actions by the village as a whole or members thereof. Writing from her field site

of north Karnataka in southern India in the 1980s, Vasavi argues that drought conditions precipitate the performance of a range of rituals associated with reordering the cosmic universe through appeasement of specific deities. Prophesying and inducing the rain has, across the world, produce a range of rites and rituals which, she argues, constitute a 'total social phenomenon' in that they seek to address the entirely of social, ecological and moral relations within communities.

Similarly, in Ann Grodzins Gold and Bhoju Ram Gujjar's (2002) work in Rajasthan, they recount villagers' vernacular theories of declining rainfall, linking drought to deforestation but also to social and moral decay. Indeed, this connection – of viewing drought and flood as instances of divine retribution – is prominent across geographical and historical sites. As Renzo Taddei so articulately puts it, "We could safely say that the oldest and most deeply rooted meteorological theory in human history is that 'it didn't rain (or rained too much) because of the actions (or sins) of the community (or of specific individuals, e.g. witches, or enemies)'" (2012: 256). When the rains stopped early in the season, people in Malwa lamented that it was the result of village immorality – one elderly lady whispered woefully, "They kill cows in this village, how can there be rain?" Pipliya, a water-poor village owing to its particularly hilly topography, was similarly viewed as such in light of moral evaluations of its residents' alcohol consumption and gambling practices.

These lamentations over inappropriate conduct (of social life in general and the performance of rain rituals in particular) reveal what environmental historian Mark Elvin calls a 'moral meteorology', a logic through which meteorological events are connected to and said to be caused by the moral behaviors of men. In imperial China, weather events were interpreted in

both moral and political terms: “the weather around the Capital was thought to have particular relevance to what Heaven thought of the emperor’s conduct” (Elvin 1998: 213).

Indeed, Kantilal and others complained that nobody truly believed in the ritual anymore nor did they perform it correctly. For instance, the strictures of the ritual dictate that the hearth not be lit in the morning. Since everyone now has a gas connection, they interpreted this rule literally – they did not light the *chula* (stove fuelled by dung cakes) but they still prepared their morning tea on the gas stove instead. Everyone did it, but everyone also lamented it – an index of moral decline and laxity. Of course it will not rain when people can’t even sacrifice their morning chai!

In any case, even though people performed the ritual, Kishorilal castigated his fellow villagers for what he perceived as the absence of true and deep belief in the ritual – they do it, he moaned, but they also joke about it. Moreover, they did not do it collectively – what was the use of each village doing their own ritual separately? What is the point of women singing devotional songs alone in their fields? Equally prominent, however, are environmental theories of declining rainfall that pinned the blame on the cutting of trees – one person said woefully, farmers have abandoned nature, so nature is abandoning him.

Kishorilal’s account, however, went beyond this moral critique. For the ritual to work, not only must there be a coming together across village but there must be a deeper and more transformative coming together of humanity across gender, caste and class. Unlike many other tellings of the ritual, Kishorilal explicitly used the language of the state and politics. As I mentioned briefly earlier, he compared seeking out rain through this prayer to sending an “application” to the Lord Indra, whose “government” (*sasan*) included control of the rain.

Kishorilal continued, "*Dua jo jaye, ni? Vo raja Indra ke paas notice jaye*. (The smoke that rises, no? It is a notice that goes to Lord Indra). It must reach him that people are in distress, that there is no water, everything is destroyed, people have left the village empty because of this, nothing is left. Not even one person should be left in the village. There should be complete silence. There should be no cooking, not even near the village. This is the rule."

Closely following these rules and conducting the ritual together was the only way to build collective strength (*shakti*) vis-à-vis the weather gods. "*Apan ek banna chiye* (we must become one)", everyone across caste should come together as human beings. And they needed to truly believe in it. "Like how Gandiji united all the people in his *andolan* (protest movement), that's how people should believe."

Kantilal's political analogies – comparisons to Gandhi's anti-colonial movement and the process of appealing to state functionaries for favors – were rather apt. As scholars of ritual life have long demonstrated, rituals are sites for the constitution and contestation of power and hierarchy. With this ritual, it is the patel (the village headman) who plays a crucial role. The morning of the urjani, I arose early to take a walk around the village to gauge the local mood. I found the patel walking through the village to oversee household preparations for the ritual. Whenever I asked people how the decision to conduct the ritual was made, they always pointed to him – although when I asked him, he deflected the question back to the village as a while, insisting that he only made decisions in consultation with all the village residents, an index of his democratic ethos and rallying spirit. But now that the decision was made, it was his duty to bring the village together in this moment of potential crisis to assuage their anxiety. When I met him that morning, he proudly recounted how he had spoken to the heads of the area's schools to inform them that students would not be attending that day (primarily since there was no way to

prepare their meals in the morning without breaking ritual norms). Just as we speak, however, a resident comes by on a motorcycle, his two twin sons riding pillion behind him. The man, a local political aspirant, was taking his children to school – in open defiance of village proscriptions and the patel's political authority. He simply shakes his head in disapproval, indicating – not unlike Kishorilal did the next day – that it was precisely this lack of a collective ethos that left the gods dissatisfied and prevented the rain from falling.

Kishorilal called for unity – the coming together of all farmers across caste, across gender, across villages. It was only this joint effort, he argued, that could ensure success in appeasing the heavens. In a time of grave threat to the material and social reproduction of the village (a lack of rain would mean crop failure, indebtedness, out-migration and perhaps hunger), a collective show of strength is critical – ideally, multiple villages in the area should perform the ritual simultaneously; women should sing devotional songs together rather than in their individual fields; every single person in the village should follow the rules strictly. Located at the intersections of social, political and environmental discourse, rainmaking is always intimately tied to community formation and social reproduction. As Paul Landau shows in his analysis of processes of signification in rainmaking in eastern Botswana, "rain apparently fell only on communities of mutual support; and…rainmaking itself propounded the construction of such communities" (1993: 4).

And while A.R. Vasavi (1999) argues that there has been a shift from placating the gods to placating the state for relief from drought and famine, the two are always already intertwined and intersecting. Julie Livingston too makes an argument similar to Vasavi, writing of a move from rainmaking to hydrology, from god to government. Yet, Livingston also emphasizes that "rainmaking was the central technology by which political legitimacy is evaluated and

maintained" (2019: 14). The rich literature on rain-making across the globe but particularly in Africa has shown the political valence of rainfall and its deep imbrication within cosmological and political systems with the power and authority of the chief evaluated in terms of the ability to bring rain. Ultimately, when too much rain fell, as it did later in the season, the applications that were sent went not to the gods but to that other mighty force with immense power over rural lives – the government.

1.5 Monocultures of the Market: The Bean and the Rain

Discussions of rain quickly turn into discussions of soybean, the primary monsoon crop. Over the past forty years, soybean has almost completely replaced previously grown monsoon crops in Malwa: jowar, cotton, sugarcane, tuar, among others. Now only small patches of maize and peanut remain. The rural landscape is overrun by soybean (see Kumar 2016 for a history of the soybean revolution in central India). Having read histories of the government's introduction of soybean to the region as a low-input cash crop, I was surprised to learn that the shift to soybean was interpreted locally in terms of a changing monsoon season. Jowar (sorghum), the primary monsoon crop and chief food grain of the area until the 1970s, is a long-duration crop as compared to soybean, which can be harvested within 80 days or less than three months. I was told that soybean made more sense to farmers now because the monsoon was now far shorter and could not sustain the longer cultivation cycles of sorghum or even cotton. So too with sugarcane, a water-guzzling perennial, there was simply not enough rainfall (and groundwater) to sustain its growth. Soybean, then, was posited as the natural choice of crop suited to a changing climate. Even within soybean, farmers were moving away from longer-duration varieties because of what they perceived to be an ever-shrinking and unreliable season of rain. The season, they reasoned,

lasted only fifty to sixty days now – and even within that period, rain only actually fell for about 10 or 15 days.[23]

In light of these perceived climatic shifts, soybean is generally seen as a hardy crop, one that could withstand both low and excess rainfall, making it all the more suitable to the vagaries of the monsoon. Yet, the monsoon of 2019 reconfigured these assumptions about the relationship between crop and rain. When there was a break in the monsoon – which lasted over two weeks – farmers were especially worried because their soybean crop needed constant light rain *('halka-pulka pani'*), at least every five or six days for at least two months in the crucial stages of growth. The top soil needed to be kept moist since the roots were short and therefore, did not penetrate deep into the ground in order to tap into subsurface water. Long dry spells could therefore be quite harmful. Similarly, excess rainfall can cause waterlogging which damages the soybean crop by reducing growth and therefore, yields.

Anthropologists of water have deftly laid bare the discursive construction and material production of scarcity and excess in particular geographical and historical contexts. Discussing the everyday politics of water in rural Egypt, Jessica Barnes (2014: 39) writes, "Scarcity is relative. For some farmers, it can mean that they are unable to grow any crops at all; for others, it can mean that they are not able to grow their crops of choice…even upstream farmers growing water-intensive crops like rice may consider their water to be scarce". Although Barnes is discussing water as it flows from the Nile through an elaborate system of dams, canals, pipes, and pumps, I want to emphasize that this is also true for rain falling from the sky. Of course, whether the rainfall is deficient or excessive in meteorological terms depends on certain definite

[23] There were other reasons cited for the shift to soybean: the growing number of animals (monkeys, deer, wild boar etc.) who eat the crops; the closure of the sugar mill nearby; the possibility of multiple crop cycles.

criteria, but how it is experienced depends on the specificities of soil, elevation, crop qualities and so on. That some crops are drought-resistant and others are water-guzzling speaks to this.

While the peculiarities of the monsoon damaged the soybean crop because of its need for steady and consistent rainfall, the extent of damage experienced was also shaped by the soybean monoculture that was promoted through state policy over several decades. Farmers were hit hard precisely because they were almost entirely dependent on soybean as the primary crop of the season. The materiality of the rain intersects with the materiality of the crop and the land in specific ways to produce and exacerbate vulnerabilities.

Figure 9: A waterlogged soybean field

This was made clear to me by a state agricultural extension agent. When farmers in the region were protesting for compensation for their soybean crop damaged by the heaviest rainfall in 25 years, I called him to ask about the situation. What had happened to the crop? What were farmers demanding? I asked over the phone. He sighed, telling me, see, this is all due to

monocropping. Monocropping? I was confused. What did that have to do with excess rain? He continued, "We keep telling farmers – don't just grow soybean, you must intersperse your crop with other. But now there is only one crop left." This is unlike some decades ago when longer-duration crops such as sorghum, cotton, sugarcane, and different varieties of lentils. "But they only want a quick return!"

While this agricultural officer blamed farmers for their abandonment of crop diversity, his narrative elides the history of soybean's introduction to the region in the 1970s as part of government policy (see Kumar 2016). It is these policies that brought about this system of monoculture that is now deeply entrenched (soybean also has the advantage of being a short-duration and nitrogen-fixing crop which enables two or three crop cycles in a single year). As political ecologists have long noted, while all farmers are vulnerable to the vagaries of nature, they are not vulnerable in the same way or to the same degree. Indeed, some farmers face fewer risks or are better able to cope with any disasters that may occur. Risk is therefore highly contextual and variable. Moreover, the vulnerabilities faced by farmers in the current moment are not natural, but produced through processes of economic restructuring – the undermining of moral economies by colonial policy, the increasing commercialization of agriculture, as well as ecological degradation and massive indebtedness caused by the promotion of input-intensive cultivation. While farmers are indeed at the mercy of the weather for their livelihood and that this monsoon was an especially tumultuous season, the unpredictable rhythms of the rain combined with the monocultures of the land to produce particularly disastrous outcomes. Again, this is not to argue that other crops were not damaged – they were. However, with the destruction of existing modes of risk management (such as crop diversification) and the state promotion of soybean monocropping across the region, farmers are left especially vulnerable to irregular and

extreme rainfall. There were no 'insurance crops' and certainly none that were hardy enough to weather either drought or waterlogging. Although there were disputes about what exactly caused the poor soybean yields (was it the dry spell? the heavy rainfall? the waterlogged fields? insects? mistimed pesticide application?), it prompted debate about soybean cultivation itself, with many angrily declaring the end of soybean (at least in their fields).

1.6 'Silence in the Market': On Weather and Debt

By the middle of August of 2019, the destruction of the rain was evident – in my field village, everyone agreed that most of the soybean pods were empty – there were no or few beans inside. At the same time, onion prices across the country were skyrocketing. As I explain in greater detail in Chapter 3, this was because heavy rainfall had also damaged the onion crop in the key producer state of Maharashtra, thus delaying the market supply of the fresh harvest. I had gone to the district market to explore the fallout of this sudden rise in prices. As the auctions for the day ended, two men approached me. Looking up from my notebook, I waited for a litany of predictable questions – a young woman at the *mandi* is an anomalous presence and by then, I was quite accustomed to this scrutiny. As I answer a steady stream of questions about what I was doing at the market, more men joined and soon, a crowd has gathered around me. Then the conversation took a somewhat different turn. Why are you in the mandi? they scolded me. If you want to understand farming, go to the farm! I insisted that I did, but they continued. Our soybean has been destroyed. Go to the fields and do a survey there instead! Immediately, each of them pulled out cellphones from their shirt pockets, opening up photos of their damaged crop. Palms holding out browning seeds. Waterlogged fields. Rotting stalks. The anger and distress was palpable as they demanded I bear witness to their devastation. Someone from the crowd shouted,

maybe we can compensate with a good onion price. Others responded, only the big farmers have onions, everyone else has sold. I listen to their frustrated tirade on the rain, prices, traders, and more. There was a dark edge to their banter, paired with a refusal of any invitation to pity. Eventually, I asked, so now what? A young man quips, "*Jo himmatwala hai, vo maata lega. Jo himmatwala nahi hai, vo dawai piyega.*" He repeats this three times, his voice getting louder and more dramatic with each successive telling. "He who has courage will incur debt. He who lacks courage will ingest pesticide".

Debt in this formulation is a form of striving, a courageous and bold stance in the face of adversity but one that looks to the future as a realm of expansive possibility. For most though, debt was hardly a choice – it was vital to continued cultivation. The anticipatory mood that marks the monsoon season continues beyond it, with farmers now focused on the next crop. The rain had failed them as rain – but perhaps it could favor them as groundwater. In this sense, the torrential downpour was certainly more beneficial than cloudless skies and dry weather – even if soybean yields were low, at least the replenished aquifers allowed for the possibility of a second chance, a second crop in the winter season (which needed irrigation).

I do not want to posit a direct causal relationship between weather and debt since debt is an endemic condition of agrarian life regardless of the specificities of weather fluctuations. At the same time, the weather has always been crucial to economic life and certainly to capitalist development, as is clear from the investment in weather science by the state and trading classes. There are more direct relationships as well. Tirthankar Roy (2016) argues, for instance, that part of the reason that indigenous savings and investment in India did not expand despite a growth in the indigenous banking section which fuelled commercial agriculture was precisely the seasonality of the money market. Credit requirements for both farmers and traders were squeezed

into a narrow period around the monsoon sowing and harvest. Historians of South Asia too have documented how patterns of trade and banking were reliant on the monsoon through the 18th and 19th centuries (see Bhattacharya 2018). On this reliance, C.A. Bayly (1983) writes:

> For merchants as much as for peasant farmers, unstable rainfall and the possibility of crop failure posed the greatest threat to survival…Trader-bankers were particularly at risk from the failure of the autumn (kharif) crop. the repayment of installments on loans after the crop had been harvested provided the cash with which to finance the agricultural trade of the busy winter months. For them a failure of the spring harvest was less important since it was followed by five or six months of hot and monsoon weather when trade was sluggish. For retail traders and small commodity traders who sold goods with a high price elasticity of demand, the spring harvest was, however, crucial.

Indeed, not much seemed to have changed since then. During the dry spell in 2019, the headman commented, "*Bazaar me bhi sannat hai* (there is silence in the bazaar)". When I asked why, another man, the former schoolteacher, who was also speaking with us, responded, "Everyone is wondering what will happen now. Even the *sahukar* (moneylender) has stopped giving out money." The usual flurry of customers in the nearby market towns was markedly absent – especially peculiar since a major festival, Raksha Bandhan, was upcoming in mid-August.

Some weeks later when the rain was only just picking up, Karan, who lives in a prosperous village, told me, "*Mazdoor dukhi tho hai, saat ke saat market bhi dukhi hai* (The laborers are unhappy, and alongside the market is also unhappy)." The town, he said (referring to a small market town near his village), looked like a "curfew" had been imposed. There is nobody there other than the shopkeepers themselves. Now they are wondering whether they should even source any goods – will there even be buyers for these commodities? Earlier, we would buy 4 sets of clothes for Rakhi – but now we're thinking of making do with what we already own. The rain may have come now, but it has done its damage already. At this time, there would be at 10-

20 four-wheelers (jeeps) leaving the village, taking people on short trips to nearby states (usually to pilgrimage sites). But now – nothing.

These twenty days have caused so much change? comes my naïve question.

"*Mind pe limits laga di hai. Ki abhi se rok lo*. (It has set limits in one's mind. That you should stop [spending] now.) There's already been at least 20% damage. And who knows if the rain will continue on and how much and for how long? We don't know what will happen."

The reverberations of the rain affect agricultural labor and commercial capital alike, albeit in very different ways. For workers, good rain would mean more work in the winter sowing period while for traders, it would entail greater spending on consumer goods as well as security on their loans. For wealthy farmers with diversified occupations and savings, the monsoon season was a hardship, but one from which they could recover with some prudence and tightfistedness. For the small farmer, it was quite different.

In general, most villagers (especially men) were uncomfortable discussing debt with me (or perhaps it was my discomfort projected onto them). But in the aftermath of the monsoon, everyone was asking for credit. Everyone was also asking *me* for credit, from friends to acquaintances to complete strangers. Across rural India, a key transformation of he past few decades has been what David Hardiman (1996) called the 'Baniyaization of society' – wherein moneylending is no longer associated solely with the Baniya (trader caste) but is now widespread across social strata. Everyone is a moneylender now – the shopkeeper, the school teacher, even the daily wage worker. Traders, big farmers, and jewelers are still the primary lenders for large sums of money – but for smaller sums (in the thousands of rupees), you can borrow from anyone – your friend, your neighbor, your brother. In Pipliya, there were a few well-known moneylenders (belonging to various castes). But no matter whom the lender or the borrower,

interest must be paid. Interest rates, however, are differentiated based on caste, kinship, friendship, reputation, collateral and so on – generally ranging from 2% to 5% per month. If you are viewed as especially unreliable (that is, if you drink alcohol or gamble), the interest rate can go as high as 10%. With the shrinking of subsidized credit availability through state banks, rural residents almost wholly depend on a range of formal and informal loans taken from micro-credit groups and a range of local moneylenders.

The tumultuous season produced a contradiction of sorts: on the one hand, the dry spell and torrential downpours had reduced soybean yields for many (though not all) but on the other hand, the excess rainfall had replenished the water table which, after several years of poor rainfall, enhanced productive possibilities for the coming season. Low yields meant debt or at least limited profits, but the heavy rainfall meant opportunity. Of course, this opportunity also meant, for some, further debt. This is because soybean, the monsoon crop, is seen as the crop without *bachat* (savings), even though it is a low-input crop (see Krishnamurthy 2011). For small farmers at least, one only hopes to cover one's investments in cultivation, pay back debts incurred over the summer months and make a small profit which could be reinvested into the winter crop. The winter crop, whether wheat, gram or vegetables, was the season of savings – the returns from this crop constitute the farmers' real earnings for the year. Without any real earnings from soybean that year, it was difficult to pay off previous debts or find the money to invest in the next crop cycle.

This became clear to me when I met Shanti, a gruff middle-aged Kumar (potter caste) woman, in her field on November afternoon, where she was manually re-sowing some potatoes which had not taken root during the mechanical planting a few days prior. Her household was planting potatoes for the very first time – there was plenty of water available and it had

advantages as a short-duration (90 day) crop in that one could harvest and plant again by the early spring. This would also allow them to pay back their debts sooner. She had just borrowed Rs. 27000 from a self-help group offering micro-credit to women and another Rs. 14000 from her sister who lived in the city. I was taken aback at the amounts and asked if this was all to plant potatoes.

No, not just for this! she retorted, shaking her head at my foolish question. Surely I should know that cash is essential not just for cultivation but for a range of household expenditures. Cultivation is based in the peasant household and therefore, any separation between productive and reproductive work (here and elsewhere) is empirically untenable (see Sethi 2018).

Shanti did not elaborate on this directly, but suggested that these were also debts taken to pay off earlier debts. "You know we have to pay off the tractor, the thresher, laborers. You must have heard people say, 'Soyabean me *daanga*!' (We will give when our soybean comes). For everything you buy [through the monsoon], you say that and they keep adding interest. Now we have to pay them back but there are no savings this season. So we pay some and to the rest we say, we will pay you back from our winter crops."

Debt – and its corollary, credit (Peebles 2010) – is, as Clara Han (2012) argues, deployed by the poor as a resource in the context of economic instability and the privatization of social services, creating networks of dependencies between kin and neighbors. Acts of borrowing, therefore, reshape the temporal rhythms of life in that it offers a 'time of respite', even as "this "made time" rubbed against the temporality of monthly debt repayments and the uncertainty of unstable wages" (Han 2012: 16). Credit created possibilities for Shanti's household – enabling the repayment of earlier debts as well as the planting of a new crop. Potato is expensive to plant

– requiring heavy investments in seed, fertilizer, potato planting machine and so on. What the excess rainfall had taken away in soybean yield, it promised in potential potato yields – by virtue of replenished aquifers. It also meant that they could – for now – hold on to their soybean harvest. Instead, they would sell slowly and gradually, as and when they needed cash, though they hoped that waiting longer would mean getting a higher price.

But credit was not so easily available to everyone in the village. One afternoon, I was sitting with a Rajput (warrior, upper-caste) woman, Laxmibai, as she cut a tall stalk of sugarcane from her small field, peeling off the outer layers with her sickle for me. As we rip off and chew the sweet cane, a man comes by, greeting us and proceeding to squat under a tree at the corner of the field within earshot, smoking his cigarette in silence. Soon after, a woman follows, sickle in hand. They are husband and wife, who own a small plot of land adjacent to Laxmibai's field. The woman looks distraught. Coming up to us, she pleads with Laxmibai, "Lend me 2000 rupees! We had no soybean this year! But I need to buy fertilizer so we can plant some wheat now. Just 2000, that's all! I'll pay it back within the month and with interest too!"

Laxmibai is unrelenting but the woman continues her desperate but insistent pleas. Pointing at the thick silver anklets on her feet, she begs, "You can even keep these! They are 150 grams of silver. Take this now. I will do plenty of daily wage labor (*dhadki*) and return the money."

Laxmibai denies having any money to spare, insisting that even her soybean was damaged this year. The woman turns to me, asking the same questions. But before I can answer, Laxmibai intervenes, "She is a student! Where will she have any money?"

The woman gives up and leaves. Her husband, who has been quietly smoking nearby, follows. As they walk away, Laxmibai whispers to me," I do have money but why should I give it to them? I'll just put it in the bank."

Why not? I ask.

Ha! Why should I give my money and lose it? She goes on to disparage the caste to which the woman belongs to, noting that Bagri people '*sabko dooba dete hai'* (they sink everyone) by borrowing money and never returning it. Not only did they sink others, they sank themselves too – selling off their land in order to pay off debts. Laxmibai has herself just finished paying off a huge loan taken for a gall bladder surgery she had, one of many large informal loans she has taken (others include for her daughter's wedding and to drill a tube-well). For this woman, whose name I never learned, her caste position stymied the possibilities of credit – for 'people like her', Laxmibai whispered, interest rates could go up to 5 or 10% and would only be given with *rakam* (collateral). But she was likely one among many farmers desperately seeking credit that year. As I listened to her distressed pleas, I was reminded of the words of a trader just a few weeks prior. He had said, Mark my words, this year, farmers will have to sell all their *rakam-vakam*, pointing to his wrists and ankles, referring to the gold and silver bangles and anklets given to a new bride by her father as her wealth – to be sold in case of an emergency.

These are common stories among rural communities across the world – the relationship between indebtedness and land loss is a sadly familiar and recognizable historical story. What I hope to highlight through these two narratives – of Shanti and Laxmibai – are the intimate relations between weather and debt in particular. While we are aware of the broad linkages between crop failures (often caused by adverse weather conditions such as drought or flood) and

debt, the specificities of these connections and how people respond to them are perhaps less understood. Moreover, these stories draw attention to instances when the calamity that hits is not a disaster on the scale of a large-scale calamity but a less visible and more mundane one – that of lower yields and lower savings to invest in the next crop. The seasonality of credit and debt is crucial, and much (not all) of it depends on the weather and its effects on crop yields and prices.

1.7 Conclusion

In this chapter, I have traced the tumultuous rhythms of a single season of rainfall from the vantage point of the village of Pipliya. From practices of prediction and anticipation of the rain to modes of coping with its aftermath, this chapter addresses the myriad ways in which farmers engaged the uncertain temporalities and spatialities of rain. Through the lens of one pivotal (and particularly eventful) season, it demonstrates how farmers apprehend the weather through their situated experiences as well as in relation to meteorological sciences, showing that uncertainty is embedded in both forms of knowledge but that farmers often explain away the inconsistencies of local prophesies in a way that they do not do for meteorological forecasts. Then, I examined the various tellings of and performance of a key rain ritual in Malwa known as the urjani, a way to propitiate Indra, the god of rain. Here, I explore how people narrate the ritual in the language of state patronage and show that this ritual – like many rainmaking rites across the world – does the symbolic work of social reproduction of the village unit, even as deviations from its normative performance serve as openings for critiques of degenerating moral values.

Finally, this chapter explores the productive and destructive force of the rain in both destroying the crop and replenishing aquifers. In particular, I examine how the vagaries of the monsoon shaped relations of credit and debt. Lower yields increased farmer indebtedness,

prompting more farmers to take on new loans to invest in the next crop cycle – in the hopes of a good return aided by plentiful supplies of water. However, access to credit is heavily mediated by caste and class location, leaving poor and lower-caste farmers with few options but to take on high-interest loans from village co-residents in order to have another chance at cultivating their fields.

CHAPTER 2
Actuarial Politics: Managing Risk and Making Claims Through Index Insurance

On a warm September afternoon, we join the survey team on a narrow dirt lane flanked on both sides by vast fields of soybean. What were lush and green fields just weeks earlier are now a dull brown, the drying and wilting soybean stalk waiting to be cut, dried and threshed. While the survey team is accustomed to carrying out its work without supervision, today is somewhat different. For the next few weeks, Sunil, the district manager in charge of crop insurance for Integrated Insurance Company (IIC), will travel with the team to monitor regional crop assessments. I join him for the day as does Ravi, a representative of a weather service agency, Mausam, contracted to carry out these assessments alongside local government officials.

Officially known as crop-cutting experiments (CCEs, or locally as 'cuttings'), this process entails sending surveyors to 'randomly selected' fields (four per panchayat (village) area) where a small plot is demarcated, the standing crop cut, threshed, and weighed. Then, through a series of complex calculations, the average weight of the crop from that plot stands in for the average yield in that area, which serves as the unit of insurance.[24] If the yield is lower than the average yield from the previous five years, then payouts are made to farmers based on the difference. The calculation of payouts for crop loss is therefore predicated on the calculation of area-yield. This is the system of assessment on which yield-index insurance for major agricultural crops works through the Pradhan Mantri Fasal Bima Yojana (henceforth PMFBY), Prime Minister's Crop Insurance Scheme, the most recent iteration of agricultural insurance in India, launched in 2016.

[24] Crop-cutting experiments have a long history in India that pre-dates their connection to insurance calculations. Initially devised by statistician P.C. Mahalanobis as a method of calculating district- and state-level crop yields, these assessments now form the basis of yield-index insurance payouts.

Exiting our minivan, I follow Sunil and Ravi as they walk toward the team, comprising government functionaries (the *chowkidar* (village guard), *patwari* (the land revenue official), *gram sewak* (agricultural extension agent)), and company contracted surveyors, a group of three young men. These men – mostly in their early twenties, college-educated, smartly dressed, belonging to wealthy peasant castes and local landowning families – are on contract with the weather agency to 'observe' the CCE and ensure it proceeds according to protocol. In reality, they often conducted the survey themselves while the state officials simply looked on. When Sunil saw the survey team, he immediately expressed his concerns. Soybean yield data coming in from this district show worryingly low figures (which would mean higher insurance payouts). This is especially important because, as Sunil tells me proudly, the district is one of the largest in the state in terms of number of farmers insured and premium amounts collected.[25] There has been no serious calamity this season but for several years now, the rain has been poor, and there are frequent reports of pests and diseases afflicting the standing crop, forcing the insurance company to make large payouts through the scheme.

Sunil laments. "I couldn't sleep last night and woke up at 3'o clock and wondered why. I realized it's because people are sending in measurements of 100 gm yields from this area!" One of the claims adjusters (surveyors) from the team, Pawan, laughs, "Well, then imagine what farmers are going through!"

As we walk toward the specific field selected for the day's survey, Sunil explains how the assessment process work: four plot numbers (from land revenue lists) are selected randomly for each insured unit (usually a village or group of villages). Small sections (five by five feet) of the

[25] One of the reasons that the state of Madhya Pradesh has a large number of insured farmers is the popularity of the Kisan Credit Card (KCC) which offers subsidized government credit to farmers (at an interest rate of 4% per year). As of 2018-19, 130 lakh hectares of crops (across two seasons combined) were insured in the state, accounting for one-fourth of the total area insured in the country covering about 74 lakh farm plots.

standing crop on these plots are cut and weighed. The average area-yield for the insured unit is then calculated based on the yield from these four plots. The process, described quite simply by Sunil, is far longer and more cumbersome than I had imagined – from measuring the precise dimensions of the plot from which crop would be cut to manually cutting and threshing the crop. The pods and leaves are separated out from the seed by a tedious wind filtration process. Finally, the yellow bean is weighed. Almost all of the difficult labor entailed in cutting and threshing is performed by the *chowkidar* (guard), an elderly man wearing a navy blue uniform. The rest of us watch closely and take notes. The surveyors and government officials fill out forms recording the details of the survey, from the plot number to who was present to the name of the farmer whose field it is).

Figure 10: The randomly selected plot is measured with white tape; the cut crop is weighed

But nothing proceeds smoothly: the rope to wrap the bundle of cut crop is missing, there is a hunt for a plastic sheet on which to lay the crop out for threshing, even a search for a small plastic bag in which to place the bean for weighing. The technologies of cutting and weighing – sickle, rope, wind, plastic sheets – stand in sharp contrast with the technologies of monitoring – a stream of photos taking on smart phones, and the uploading of photos and data onto a company app that both verifies the location of surveyors (to make sure they are assessing the crop in the

selected plot) and to ensure the correct procedure is followed. In other fields, more fundamental issues arise. For example, in which part of the field should the experimental plot be demarcated? When the team begins to mark a plot with sticks and measuring tape in a particularly sparse section, Sunil intervenes, insisting that they cut from a dense and lush part of the field where, presumably, the yields will be higher. Elsewhere, we skip entire fields for neighboring ones – the crop has already been cut and the field is empty; the field is not planted with soybean but with maize or peanuts; the company representative believes that the field is too barren or weedy to serve as an 'accurate' sample. Later that day, Sunil tells me: "Sometimes the random plot selected turns out to be a severely damaged field. Once we went to a field which was very neglected and we learnt that the owner lives in the city and he has given his field off to someone else to farm. So I said, 'no, we won't take this field! This is not representative. We have to pick another one'".

Figure 11: The chowkidar begins to thresh the crop; the threshed crop is spread out before weighing

Fortunately for Sunil, the yield turns out to be far higher than initially anticipated, and he seems satisfied that his presence may have made a difference. After closely monitoring a few surveys, he decides to continue on to another set of villages in order to be able to monitor as many such surveys as possible.[26] There is some urgency to finishing these surveys quickly because the standing crop is quickly being cut - and in a few days, all the fields will be cleared. Before we leave, Sunil sternly tells one of the young men from the team to monitor the threshing process carefully in his absence. Annoyed with this command, Pawan jokes again, "*Apke jaane ke baad kuch bhi ho sakta hai!* (After you leave, anything can happen!)". Everyone laughs, so he continues, asking Sunil, "How much profit will you [the company] make? *Kuch to batwara karo na?* (Share some of it, no?)".

On my very first observation of the yield assessment, I was introduced not only to the complex process of measurement, but also to the multiple tensions and contradictions, identities and interests that animate the production of yield data. Both the government and insurance companies are eager to bypass the random survey method through new technologies such as deploying remote sensing data and satellite imagery, crop growth simulation models, and so on. Yet, for now, the crop cutting experiment remains the norm, embedding insurance firmly in the politics of place.[27] These exchanges are significant because they point to contestations around assessment and valuation of crop loss, but also the tensions and contradictions that animate processes of financialization more broadly. Even as agro-ecological risk is increasingly packaged, commodified and transferred through global financial networks, so too is it politicized

[26] Several such surveys are being conducted simultaneously with similar survey teams but there are only a few direct employees of the insurance company to monitor the process across the entire district. In 2018, Sunil was the only permanent company employee in the district, though this changed the following year when a new company hired loss surveyors as regular (not seasonal) employees to man a sub-district office.

[27] A separate weather-index insurance scheme exists for horticultural crops. Under this scheme, payouts are made based on pre-determined thresholds of weather indices as recorded by Automated Weather Stations within a defined insurance unit.

in various ways (Sheth 2017), showing how financialization itself is always a contingent and incomplete process (Fields 2017, Ouma 2014). Crop insurance is operationalized through a range of actors and intermediaries – central and state governments, private and state insurance companies, weather forecasting agencies, contracted loss surveyors, district government officials, agricultural extension agents, village leaders, and farmers themselves – creating a complex and often contradictory set of interests, commitments, and orientations. Therefore, while proponents of crop insurance argue that it is a neat solution to multiple agrarian crises and critics hold that it only serves private insurers at the expense of farmers, I show that the reality is somewhat more complicated. Insurance is marked by persistent and productive tensions clearly evidenced in this encounter between company representative and farmer-surveyor – between accumulation and welfare, between the financialization of risk and the politicization of risk.

This chapter focuses primarily on the process of yield measurement, as depicted in the opening scene, as a productive lens into contestations around valuations of loss and attributions of responsibility in a rapidly transforming countryside. As Rebecca Elliott notes, "insurance acts as a platform through which people negotiate issues of loss: what is fair and valuable, what needs protecting and what should be let go, who deserves assistance and on what terms, and whose expectations of future losses are used to govern the present" (2021: 7). Through an analysis of yield measurement which forms the basis for insurance payouts, I show how insurance creates new uncertainties for farmers even as it also opens up novel avenues for the constitution of rural solidarity and political claim-making. The specific form and mechanics of index insurance as a distinct type of insurance opens up these possibilities. Specifically, I argue that insurance does not individualize risk in any simple way, but rather holds the potential to produce and consolidate new (and existing) socialities and solidarities.

2.1 Transferring Risk, Compensating Loss: A Theory of Insurance

While insurance in varied forms has a long history, there is little anthropological work on its dynamics. In a sense, this is in the nature of insurance itself, lurking as it does as a taken-for-granted – but now often essential – backdrop to exchange and accumulation, surfacing only in times of crisis – a fire, a shipwreck, a death, an illness, a flood, a poor harvest (cf. Dao and Mulligan 2015). A large portion of the literature examines the historical emergence across various forms such as life insurance (Golomski 2014, Ralph 2017, Zelizer 1978), health insurance (Dao and Mulligan 2015), funeral and retirement policies (Bahre 2020), and more recently, flood insurance and catastrophe bonds in the wake of natural disasters (Collier 2014, Johnson 2010, Taylor 2020). Interestingly, although produced as a technology of risk, insurance takes diverse (sometimes unrecognizable) forms in different contexts. In Indonesia, for instance, insurance products are marketed and sold as savings schemes and investment funds (Maurer 2005). As Francois Ewald (1991) put it, the insurance imaginary can be deployed to pursue various goals and within diverse political contexts - there is no inevitability or certainty to its imperatives (cf. Collier et al. 2021).

As a technology of risk transfer, insurance is viewed as a necessary buffer against the possibility of large losses. The essence of modern insurance is based on the following principle: the aim of eliminating the risk of loss for an individual through the combination of a large number of similarly positioned individuals who contribute to a common fund which can then compensate for the loss of any individual in this group. Like other forms of social security, it is "a way of paying in the present to accumulate a credit towards something in the future" (Patel 2007: 101). In the era of climate change, it is increasingly assumed to be the technology to combat the threat of environmental hazards. But this was not always the case: theorists of risk

such as Ulrich Beck and Francois Ewald saw emerging environmental catastrophes (from Chernobyl to climate change) as radically unknowable and unpredictable, thus outside of predictive logics and fundamentally uninsurable. The insurance industry has, however, proved them wrong.

The earliest forms of insurance can be traced to mutual societies and early modern guilds which provided welfare to members through old age, widowhood, burial, and sickness allowances. Modern commercial insurance has its roots in maritime trade in the seventeenth- and eighteenth-centuries, growing from its early development among merchants and traders in Italy in the fifteenth-century. According to Jonathan Levy, the term 'risk' or risqué originally referred to "a financial instrument for coping with the mere possibility of peril, hazard, or danger" (2012: 3), and not to the fear of this event itself. "Risque", the Italian word from which 'risk' originates, means 'reef', signaling an early spatial connection between risk and the sea, in particular, the possibility of shipwreck. Risks were bought and sold among merchants as financial compensation for loss of property, whether owing to a "peril of the sea" or an "act of God" (2012: 21).[28] 'Risk' therefore was made into a commodity in itself, separate from yet connected to the physical goods whose value was being protected. Insurance entailed a double commodification: 'risk' could only exist in relation to a primary, underlying form of property. This risk could be owned and carried by the owner of that asset, or could be 'thrown' to another merchant as insurance. In other words, farmers, merchants, and sailors have always had to grapple with the uncertainties of the weather – deploying a range of strategies to cope with the

[28] There were other collective strategies to deal with the perils of the sea without turning it into a financial commodity. These mechanisms were premised on hierarchical social relations of obligation and duty, such as between master and servant, husbands and wives, masters and seamen. This was reinforced by a belief in divine providence in which paternalistic masters were in charge of caring for servants, wives, and slaves. Even beyond this, seafarers engaged in forms of hedging by dividing cargo across different ships in order to spread their potential losses.

potential losses incurred. Insurance entered this complex landscape through the invention and demarcation of certain classes of risk – and not, as one might assume, through the transformation of risks as already existing things in the world. In other words, "he 'produces risks', he makes risks appear where each person had hitherto felt obliged to submit resignedly to the blows of fortune" (Ewald 1991: 200). Merchants formed social 'risk communities', selling to each other these risks on a range of cargo: rice, cotton, enslaved persons. Marine insurance was developed into its modern liberal forms in and through the Atlantic slave trade.

Insurance therefore entails the calculation and the collectivization of risk, a project that, as Francois Ewald (1991: 207) argues, lies at the heart of liberal government:

> To calculate a risk is to master time, to discipline the future. To conduct one's life in the manner of an enterprise indeed begins in the eighteenth century to be a definition of morality…to provide for the future [means] mathematizing one's commitments. Above all, it means no longer resigning oneself to the decrees of providence and the blows of fate, but instead transforming one's relationships with nature, the world and God so that, even in misfortune, one retains responsibility for one's affairs by possessing the means to repair its effects.

As a technology of distribution – of sharing risks socially – insurance is also implicated in reconfiguring relations of obligation and responsibility. In the Foucauldian tradition, sociologist Francois Ewald notes the centrality of insurance to the rise of the modern welfare state. In the late nineteenth century, there emerged the idea that "the state should underwrite the ensemble of "social risks" incurred by its citizens, ensuring the general social security of its policyholders in the event of economic loss" (Cooper 2020: xxi). Social insurance, therefore, frames relations between citizens and the state, serving as "a terrain of moral struggle over the contours and limitations of mutual aid, compassion, and membership" (Elliott 2021: 25). These transformations occurred in conjunction with the development of probability theory and social statistics through which certain events could be calculated in probabilistic terms. As varied forms

of social and private insurance became more commonplace, risk comes to be shared socially even as individuals are made more accountable for their own risks (cf. Kar 2018).

More recently, scholarship situates the concerted spread of insurance technologies within broader processes of financialization, "a pattern of accumulation in which profits accrue primarily through financial channels", primarily "activities relating to the provision (or transfer of liquid capital in expectation of future interest, dividends, or capital gains" (Krippner 2005: 174-5). These new financialized logics of accumulation meant that "a discourse of property rights and a practice of negotiability has in the late twentieth century shifted to a discourse of risk and practices of insurance and private justice" (Maurer 1999: 365). Within agriculture and nature-based industries more broadly, however, there is a need to attend to both financialization and its limits with "farmland as a weather-dependent, geographically variegated, socioecologically embedded and political resource" (Sheth 2017: 77). Indeed, the diverse, contradictory, and uneven mechanisms and effects of financialization must be explained, not assumed (Ouma 2014). Thus, we must attend to "the modalities, processes, and practices of financial economization that have reworked organizations (such as farms), economic relations, labor and nature in particular geographical contexts and at particular historical conjunctures" (Ouma 2018: 91).

As Lehtonnen and Liukko (2015) argue, insurance is especially interesting to think through because it combines a technical rationality (through measurements of loss and actuarial analysis) while at the same time, is connected to a conception of solidarity. Since insurance operates through the pooling of risks, each insured person is reciprocally responsible for the risks of others. The evolution of insurance into the early twentieth century in countries such as France entailed the alignment of both actuarial logics and solidaristic impulses that congealed in forms

of social insurance associated with the modern welfare state (Ewald 2020 (1986)). These elements continue to inform the workings of insurance in the present.

2.2 Agricultural Insurance in India: A Brief History

Comprising elements of both property insurance and social welfare, agricultural insurance has a long history in South Asia.[29] And yet, despite the clear risks of agriculture, insurance as a mechanism of risk transfer and management, has never quite taken hold – but not for a lack of effort on the part of governments, development planners and economists. Proposals for a rainfall-based insurance program were discussed by economist J.S. Chakravarti as early as 1920. These debates were revived in the 1970s with a legislative push for the introduction of insurance schemes. In 1976, economist V.M. Dandekar outlined the urgent need for crop insurance in India, writing: "In a country where agriculture is at the mercy of the vagaries of the monsoon and other factors beyond the control of the farmer, the importance of crop insurance is not in doubt and needs no emphasis" (1976a: A-61).

One of the first pilot projects in the country was launched in 1972-73 in the state of Gujarat, which was later extended to multiple states and crops. Modelled on federal crop insurance in the United States, the program was financed by the central government, was entirely voluntary, and based on an individual farm approach – but ended up an actuarial failure. Over six years, it covered about 3000 farmers, and faced a high loss ratio – premiums collected amounted to Rs. 4.54 lakhs as against claims of Rs. 37.8 lakhs.[30]

[29] While this chapter focuses on yield-index insurance schemes, there are also separate programs for livestock insurance, rainfall index insurance and weather index insurance which I do not discuss here.

[30] One of the most well-known pilot projects for rainfall insurance in India was the product sold by BASIX, a microfinance group, and underwritten by ICICI Lombard Insurance Co. with assistance from the World Bank in 2003. The pilot operated in two district for two profitable but drought-sensitive crops, castor and groundnut, and operated in three phases through the monsoon season. Simply put, the lower the rainfall below a defined threshold/s

Many schemes later, the National Agricultural Insurance Scheme (NAIS) was introduced in 1999, covering major food grains, oilseed, and agricultural and horticultural crops, with a wide geographical reach. Soon, the scheme came to cover the largest number of farmers in the world. Alongside, in 2002, the government created the Agricultural Insurance Company of India (AIC), which immediately become the world's largest agri-insurer covering about 20 million farmers in the country. However, even the NAIS was said to be "actuarially unsound": loss ratios were high, demand tended to be concentrated in high-risk regions – which were rain-fed, prone to drought and so on; and overall farmer coverage was far lower than anticipated. This was improved upon in the Modified National Agricultural Insurance Scheme (MNAIS) in 2005, which formed the precursor to the Pradhan Mantri Fasal Bima Yojana, which I discuss in detail here.

The proliferation – and continued propagation of – insurance as a solution to agrarian risk does not mean that insurance in India has been a success. Voluntary uptake of insurance is low in most parts of the country, and expansion of insurance can largely be attributed to its mandatory ties with government loan schemes. As Dia da Costa (2013) argues, a paradox exists between the celebration of India as the most 'dynamic' micro-insurance market in the world and the lack of effective demand for insurance among the poor. While it is clear that adverse events (eg: a natural disaster or illness) create significant difficulties for poor and rural households, what is not clear is that insurance is the best way to address this issue. Nonetheless, as Da Costa shows, there are concerted efforts by governments, development organizations, and policy-makers to construct demand discursively and materially in order to shore up the supply of insurance products. That is, it is repeatedly argued that the most effective and rational answer to endemic

the higher the payout. Participation failed to take off for various reasons that still hold today: distrust of insurance products and agents as well as credit constraints.

agricultural risks is insurance, and the lack of effective interest in insurance products is framed in terms of lack of information, the absence of an insurance culture, and low literacy. Company executives I spoke with routinely bemoaned the absence of insurance literacy among farmers who mistakenly interpreted insurance as something akin to a savings scheme to which they were owed regular returns. But in farmers' minds, taking insurance is also a risky proposition, one they could seldom afford, in that it amounted to putting precious cash aside for an event that may or may not occur.[31] Despite the general lack of interest, it has been the concerted task of the government and insurance companies to produce demand, often through continued, improved and often imposed supply.[32]

That insurance uptake is limited among most smallholder farmers certainly doesn't mean that other forms of insurance (in the sense of risk-management mechanisms) are absent in their lives. Cultivators manage and minimize risk in multiple ways – from crop diversification to out-migration. Farmers across the world have a range of coping strategies that are both preventive and adaptive, including state food-for-work programs, public food distribution systems, engaging in additional wage labor, migrating to cities, prayer, changing seed and crop varieties, selling off livestock (cattle, goats), taking on more loans and so on (see Peterson 2012).[33]

In 2016, the central government introduced the Pradhan Mantri Fasal Bima Yojana (Prime Minister's Crop Insurance Scheme), or PMFBY, heralded as a marked improvement over earlier programs. The "insurantial imaginary" (Ewald 1991) undergirding the scheme is this: it

[31] This is contrary to the neoclassical economic model which presumes that more risk-averse households will be more amenable to taking insurance.
[32] This is not a new phenomenon. In the US, life insurance was once viewed as immoral, leading to concerted marketing efforts that instead framed life insurance as a measure of a 'good death'. Now men were judged by their financial foresight in providing for their family's future by taking out insurance policies (Zelizer 1978).
[33] What qualifies as insurance then is far more capacious than we might imagine – take, for instance, James Ferguson's (1994) account of cattle as a crucial store of value for migrant workers in Lesotho. Owing to its cultural value, cattle were not completely fungible and could only be exchanged under specific circumstances, thus functioning as a form of insurance in times of distress.

aims to provide financial support and income stability to farmers in the aftermath of natural calamities, to encourage "innovative and modern" agricultural practices, and to ensure agricultural credit flows. Premiums, highly subsidized by central and state governments, are then collected by insurance companies, who then conduct seasonal crop surveys alongside key state functionaries, and make payouts to farmers based on comparative losses.[34] The PMFBY provides for two distinct types of claims: first, on a notified area basis (usually a village panchayat) covering yield losses and prevented sowing which affects a majority of farmers in that area (also called the *area-approach*), and second, on an individual farm basis which covers post-harvest losses and localized calamities such as hailstorms, landslides, inundation (or the *individual farm approach*).

While this scope is fairly broad, it is premised on numerous elisions and erasures: certain crops cannot be insured at all if they are not 'notified' crops leaving farmers who grow them entirely outside the scheme's purview; certain risks are excluded such as damage caused by frost or by stray and wild animals; certain risks do not apply to certain crops (eg: excessive rain is not a recognized risk for the winter potato crop). Thus, the "gap between real-world dangers on the one hand and insurable risks on the other suggests that risks are partial artifacts, produced by choices of the actors who have the power to shape them" (Aguiton 2019: 285).

[34] There are several differences from previous programs worth mentioning here: first, it is premiums rather that claims that are subsidized by the government, therefore, making the profit potential greater for private insurance companies; second, whereas earlier schemes only insured the loan amount, here the sum insured is equal to the Scale of Finance for that crop, or the finance required for raising a crop per unit of cultivation. To give a sense of the scheme, here is an example: in the kharif (monsoon) season of 2019, a farmer in Ujjain district could insure her soybean crop by paying a premium of Rs. 705 for 1 hectare. The government paid a subsidy of Rs. 4582.5 to the insurance company. The total sum insured (which could be paid in case of 100% loss) is Rs. 35,350.

At the time of conducting fieldwork, the scheme was *mandatory* for farmers with current crop loans.[35] A majority of insured farmers are therefore also what is known as 'loanee' farmers, having received subsidized credit through state banks. All debtors are therefore insured. Owing to this, a majority of farmers in my field sites were insured through a popular government loan scheme known as Kisan Credit Card (Farmer's Credit Card). Credit and insurance have always been linked as a way to collateralize loans (see also Kar 2018: 177). Indeed, this has been a defining principle of crop insurance since its inception. In one of the first reports on the feasibility of crop insurance in India, submitted by the Indian School of Political Economy in 1976, the authors noted that some element of compulsion was necessary in insurance schemes since voluntary collection of premiums is a difficult task. It suggested the tying of insurance to agricultural credit, and envisions its functioning as a crop-loan insurance scheme since the "entire agricultural credit structure is in urgent need of protection from the hazards of agriculture". Importantly, for loanee farmers, banks automatically deduct interest payments on loans from payouts received. Insurance thus becomes a form of risk management not just for crops, but on the capital given out as a crop loan. The primary driver of the insurance push has been therefore the need to stabilize the risk of loan default within India's debt-based agricultural production regime (Sheth 2017). Insurance thus works as collateral - protecting existing loans while also making farmers more creditworthy and enhancing their risk-taking capacities. Indeed, most farmers I met were only insured by virtue of being 'loanee farmers', compulsorily insured by virtue of having taken out government-subsidized crop loans.

[35] Proposed changes to the scheme beginning in June 2020 include making it entirely voluntary. That is, farmers with loans will no longer be mandatorily insured. It remains to be seen how this change will affect the working of the scheme.

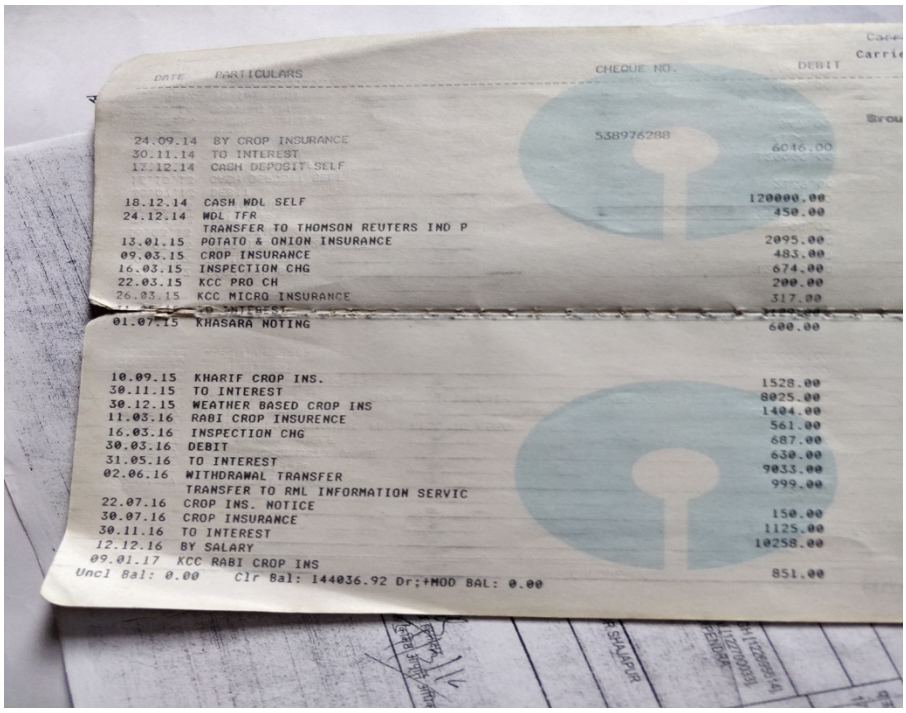


Figure 12: A farmer's bank passbook listing automatic payment of insurance premiums

Insurance now occupies a prime place – about 30% - of the government's annual expenditure on agriculture through premium subsidies paid to insurance companies who then pay out claims to farmers (more on this later). This is a significant shift. Indeed, Alpen Sheth shows how the Indian government has, in recent decades, emphasized "policies expanding subsidized credit circuits and insured territory", what he calls 'riskholding' (2017: 153). But this focus on financial risk was itself propelled by Green Revolution-era policies which pushed cheap credit and input-intensive commercial cultivation onto farmers, eventually resulting in widespread loan defaults. State and central governments thus sought to manage the financial risks from crop failure and rising debts through financialized risk-management mechanisms such as insurance. In doing so, it brought rural small-holders in India into global circuits of finance through insurance and reinsurance markets. Moreover, the expansion of insurance marks a shift from direct state compensation to insurance payouts. This is, in Sohini Kar's words, a case of 'austerity welfare'

whereby welfare does not operate through a direct transfer between citizen and state but through new financial products. This "enables governments to limit direct and redistributive forms of state expenditure by having poor people invest directly in social security through financial products while sustaining new forms of capitalist accumulation" (2017: 12).

What this means concretely is a gradual movement from universal compensation to all landholders to differentiated payouts to insured landholders alone. That is, earlier, farmers might receive compensation through state disaster relief measures in the case of floods or hailstorms which would go to all registered landowners. Now, with the (not always successful) attempt to bypass direct state compensation, it is loanee farmers as well as those who pay for voluntary insurance who can avail of redress in cases of crop loss. In my primary field village, a vast majority of farmers were insured by virtue of having crop loans, but several small and marginal farmers were not insured (although eligible).[36] They simply did not see it as a worthwhile investment of limited cash reserves. In this way, insurance exacerbates existing rural inequalities of caste and class, leaving the most vulnerable outside of the purview of one of the largest state efforts at mitigating agrarian risk.

Critics of the program maintain that it primarily benefits private insurance companies in the name of the farmer. Within this iteration of the scheme, the primary reason for increased participation of private companies is an important shift: while the government earlier subsidized claims to farmers, they would now subsidize *premiums*, thus allowing companies to make far greater profits than previously. Reports from the first two years of the scheme's operation show that private companies amassed over Rs. 15,000 crores amount in profits, sparking massive public outrage. Indeed, many commentators have noted that the scheme represents the massive

[36] Tenant farmers and sharecroppers are also eligible under the scheme but I did not know of anyone who availed of this possibility.

transfer of public wealth to private insurers and reinsurers.[37] Company executives, on the other hand, cite the enormous financial pressure placed on them by global reinsurers (primarily based in western Europe) as well as political pressure from farmers and local leaders. They hope to circumvent these issues in part through the greater use of digital technologies such as remote sensing data and satellite imagery, crop health mapping and so on, as a way to circumvent the messiness of local politicking and field surveys. Several major companies opted out of participation in the scheme from 2019, citing high claims ratios (percentage of claims in relation to premiums collected) in previous seasons.

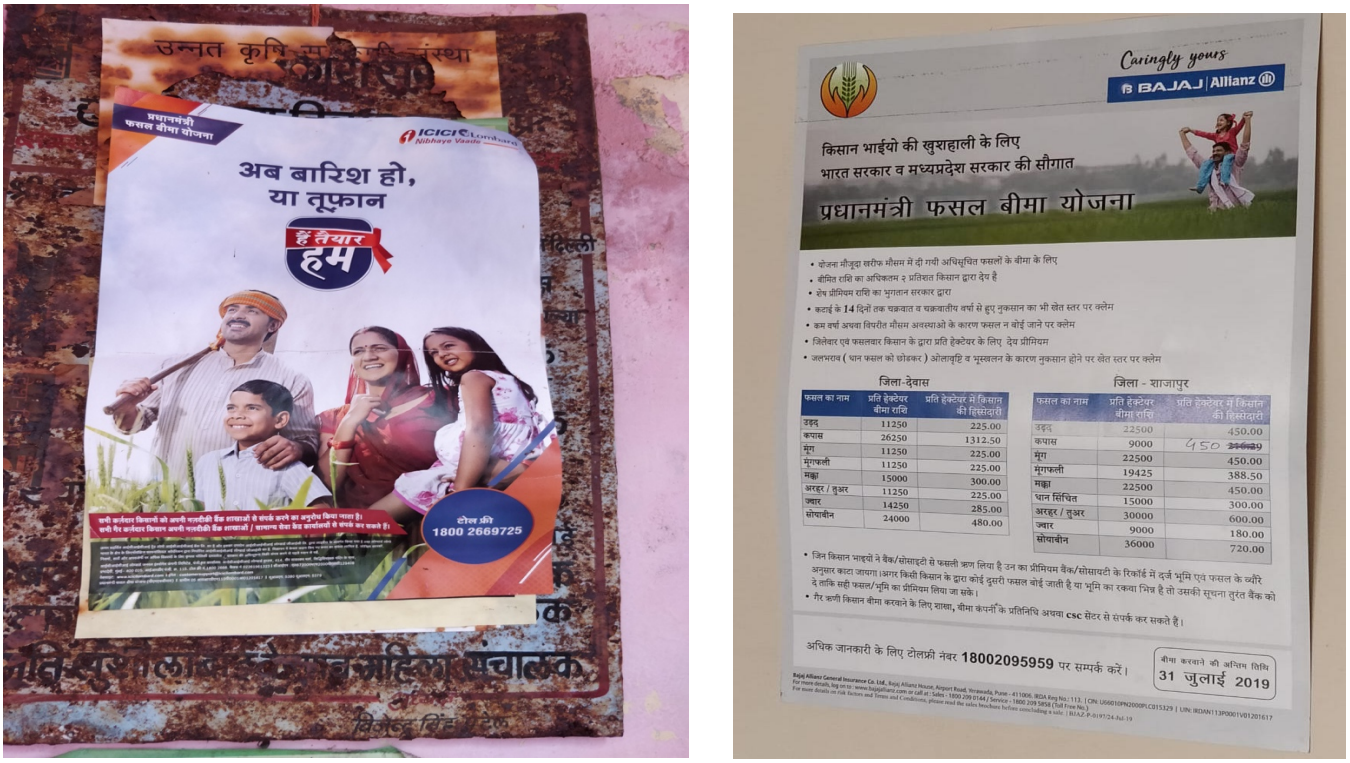


Figure 13: Insurance company posters. The advertisement on the left reads ‘Come rain or storm, we are prepared’.

[37] Agricultural policy-makers have advocated instead for other state-led mechanisms of insurance such as a ‘risk-pooling’ mechanism which gives the government control over pricing of premiums and payouts with companies only responsible for the implementation of the scheme for a fixed fee.

Farmers too were not entirely pleased with the scheme and many noted that they would probably not take out an insurance policy on their own (if it were not mandatory). They complain about the lack of receipts for premium deductions, the poor complaints and grievance redressal mechanism, the lack of transparent information around the scheme. But the biggest issue raised is delayed payouts, often taking over a year on average. This is especially harmful to small farmers who rely exclusively on crop sales to pay off loans and invest in the next crop season. The benefit of insurance as a mode of managing the risks of weather is lost if payouts are delayed.[38] However, in 2021, five years into the implementation of the PMFBY, the Minister for Agriculture called it the only "*suraksha kavach*" (security shield) for farmers against natural disasters and urged more farmers to voluntary enroll. In its annual budget, the central government allotted a total of Rs. 16,000 crores to the scheme for the 2021-22 fiscal year, an increase of Rs. 305 crores from the previous year, signaling its continued commitment to the insurance model of risk management.

2.3 Whose Risk? Attributing Responsibility and Blame

At a broader level, what are the risks against which insurance protects? The way that index insurance is framed as a climate adaptation strategy works not only to delimit the risks covered by insurance but also to naturalize and de-historicize risk itself. As recounted in the previous section, the scheme covers a delimited set of risks such as yield losses, prevented sowing, post-harvest losses and localized calamities. Overall, the risks against which it protects all appear to be naturally occurring events, rather than historical outcomes of socio-natural

[38] This delay is part of the business model of insurance firms which profit from returns of investments of premiums collected.

processes. I too was deeply invested in the idea of insurance as protecting against naturally occurring events. After all, who could really control or even exactly predict the weather?

However, as I write in Chapter 1, the vagaries of the monsoon, while incredibly risky and potentially calamitous, intersect with productivist ideologies and input-intensive monocropping to exacerbate risks and undermine longstanding local risk-management practices. Insurance then becomes a fix for a set of structural and historical problems created by the state and international development agencies. This is even as insurance schemes are often presented as a technical solution to an inherent, timeless and natural problem of "bad weather". Marcus Taylor notes a similar process in his analysis of a livestock insurance scheme for Mongolian pastoralists. There, the World Bank aided the Mongolian government in setting up a livestock insurance scheme for pastoralists, appearing to be a neutral outsider facilitating adaptation to climate risk. Taylor demonstrates, however, that it is their policies of structural adjustment that produced these risks in the first place – through the privatization of herding and the undermining of collective risk pooling institutions. In response, herders increased their livestock population as a mode of survival, which turned out to be disastrous both ecologically and socially, propelling degradation of pastures and decimation of herds by extreme weather. The crisis which the Bank intended to solve with insurance was one partially of their own creation. In light of this history, Taylor argues for the need to "conceptualize risk not as an accidental side-effect but as a strategically produced outcome of capital accumulation" (2016: 262).

As political ecologists have long noted, while all farmers are vulnerable to the vagaries of nature, they are not vulnerable in the same way or to the same degree. The vulnerabilities faced by farmers in the current moment are not natural, but produced through processes of economic restructuring – the undermining of moral economies by state policy, the increasing

commercialization of agriculture, as well as ecological degradation and massive indebtedness caused by the promotion of input-intensive cultivation. More broadly, with the near complete privatization of health and education, the expenses of the rural poor have increased considerably in the past two decades.

And yet, even as insurance is aimed at managing risk (through its transfer), it is by no means a mechanism for mitigating or curbing risk as such. The paradox of insurance under capitalism is that it is both a mode of managing risk and a tool that facilitates risk-taking. Insurance clearly reflects the perceived duality of risk under capitalism - risk as both hazard and opportunity. Indeed, the language of the scheme reflects this – aimed at both protecting farmers from income shocks and encouraging cultivation of high-value, high-risk cash crops. Better risk management is, therefore, associated with growing riskier and more profitable crops. One of the key rationales for introducing insurance to poor households is precisely to encourage entrepreneurialism, and therefore, greater (presumed) profitability. The rationale for the scheme itself is to enhance the risk-taking abilities of farmers by providing a buffer in the event of loss.

Yet, the question of responsibility for these risks remains the subject of contention. This became evident to me one humid August day in 2019 when I rode my motorcycle to the tehsil (sub-district) headquarters to meet Tomarji, head of the agricultural department, who oversaw the work of local agricultural extension agents, locally known as *gram sewaks* (village servants). I was unsure if I would find Tomarji in his office that day – reports of farmer protests were all over the news and the district government was called out to address these concerns through surveys of fields and meetings with farmers. After a long dry spell in July, it had rained heavily for two weeks without any respite. Initially, farmers were delighted with the rain – it came as a relief since many had begun to believe that the dry spell signaled another drought as the soybean

crop began to wilt in the fields. Yet, when they returned to their fields after weeks of continuous rain, they found empty and rotten soybean pods – even though only a month remained until harvest. Farmers were confused – and very angry.

I wanted to speak with him to learn more about why this had happened to the crop and how the local government was responding to the spurt of farmer protests. Tomarji was surprised to see me, mentioning that he had just returned from a field visit – a regular part of his job, but one that had become more urgent under the current circumstances. To my surprise, he began by downplaying the damage that had taken place, insisting that it was still too early to tell what the final yields would be.

But farmers are saying that the crop is *afalan* (without fruit), I countered.

He didn't disagree, but added that he was recommending certain chemicals that might spur crop growth. Moreover, he maintained it was actually the fault of farmers for not following the appropriate seed rate, and instead sowing far more seeds close together within a piece of land than was healthy for the crop. In their greed, farmers did not account for the requisite wind and sunlight essential to crop growth, made worse by the continuous rain. Rather predictably, he complained that, despite his office's guidance, farmers continued to engage in 'unscientific' agricultural practices.[39]

But farmers are quite agitated now, they are doing a *chakka jam* (road blockade) on the main highway.

Tomarji gets more indignant. "They believe that if they just put more "pressure", they will get more money." He emphasized that if you have faced some damage, then you would

[39] These moral valuations (steeped in productivist economic ideologies) are evident in the insurance survey process as well – fields that are weedy and unkempt might be passed over or, if not, then disparaged publicly for this (usually with deeply casteist undertones, particularly in adivasi (tribal) areas).

receive compensation, but that there were some who had faced no losses at all and were still demanding money. Like many government officials whom I spoke, he insisted that this was just *"rajneeti*" (politics). "But, you see, I can't say this in public, because it will appear *ki hum anti [farmer] baat kar rahe hai* (that I am speaking against the farmer)."[40]

सोयाबीन के पौधे लेकर पहुंचे किसान
बोले– सर्वे कराकर मुआवजा दे सरकार

तहसील कार्यालय गुलाना पहुंचकर किसानों ने बताई पीड़ा

गुलाना। नईदुनिया न्यूज

गुलाना, इमलीखेड़ा, धतुरिया, मोचीखेड़ी, जलोदा समेत कई गांव के दर्जनों किसान अपनी बर्बाद सोयाबीन की फसल लेकर गुलाना तहसील पहुंचे। जिम्मेदारों को पौधे दिखाकर हुए सर्वे कराकर मुआवजा देने की मांग की। तहसीलदार डीके वर्मा को ज्ञापन सौंपा।

इन गांवों के किसानों ने सोमवार को अपने खेतों में उगी सोयाबीन की पौधे उखाड़कर देखें तो वास्तविकता में बांझ पाए गए। पौधों में फल नहीं दिखाई दिए। गुलाना के किसान राधेश्याम पाटीदार, मुन्नालाल मेवाड़ा, इंदरसिंह नायक, जलोदा के दिलीपसिंह राजपूत, मोचीखेड़ी के नईम पठान आदि ने बताया कि सोयाबीन दो माह की होने वाली है और उसमें दाने ही नहीं आए हैं। पिछले दिनों से लगातार हुई बारिश के चलते सोयाबीन फसल बांध रह गई। किसानों ने बताया कि सोयाबीन पूर्णताबांज की स्थिति में है। इसकी शिकायत की गई है। कृषक जीवनसिंह मेवाड़ा ने बताया करीब 75 बीघा जमीन में सोयाबीन बोई थी लेकिन पूरी सोयाबीन के पौधों में फल दिखाई नहीं दे रहे हैं। इसलिए उसे उखाड़ने लगे हैं।

तहसील परिसर में ही जमीन पर बैठ गए किसान

सोमवार को बड़ी संख्या में गुलाना तहसील पहुंचे किसान जमीन पर बैठ गए और तहसीलदार वर्मा को ज्ञापन सौंपकर सर्वे की मांग करने लगे। कृषक जगदीश पाटीदार, रामस्वरुप पाटीदार, पवन पाटीदार, अरविंद जोशी, धनसिंह पाटीदार, विष्णु गेहलोत, रामप्रसाद मेवाड़ा, सुभाष पाटीदार, अकबर मंसूरी आदि का कहना है कि प्रधानमंत्री फसल बीमा योजना के तहत फसल का बीमा कराया गया है। कंपनी जल्द ही सर्वे कर नष्ट हुई फसलों का बीमा दें। प्रशासन पटवारी को सर्वे कार्य जल्द पूर्ण करने के निर्देश दें। ताकि किसानों को राहत मिल सकें। इधर, किसानों के साथ पहुंचे अरविंद जोशी ने सरकार को चेतावनी देते हुए कहा कि अगर किसानों को उनकी बांझ रही फसल का उचित मुआवजा नहीं दिया जाता है तो उग्र आंदोलन करेंगे।

कलेक्टर को दिखाई बर्बाद फसल

शाजापुर। सोमवार को ग्राम खेरखेड़ी के एक दर्जन से अधिक किसान अपनी बर्बाद सोयाबीन की फसल लेकर कलेक्टर डॉ. वीरेंद्रसिंह रावत के पास पहुंचे और आवेदन सौंपा। बर्बाद फसल दिखाते हुए किसानों ने कलेक्टर से जल्द सर्वे कराकर मुआवजा एवं बीमा देने की मांग की। कृषक बाबूलाल, ऊंकारसिंह, बलदेवसिंह, रतनसिंह, मानसिंह, गंगाराम, राजेंद्रसिंह गुर्जर, बिहारीलाल, मोड़सिंह, कालूसिंह आदि मौजूद थे।

गुलाना तहसील में तहसीलदार डीके वर्मा को ज्ञापन सौंपते हुए किसान। ● नईदुनिया

Figure 14: A newspaper clipping showing farmers holding their damaged soybean stalks, demanding a survey of their field and compensation from the government

But Tomarji had a deeper critique of the ongoing protests, one that reached at the heart of ongoing debates around risk and responsibility. He continued,

> These are crops. They are dependent on the environment. It's full of risk. Sometimes pests, sometimes drought, sometimes excess rain, sometimes hail. The

[40] This was an unsurprising view. As protest demonstrations grew across the region, district level government representatives maintained that they could only conduct surveys on crop damage but that the question of compensation was simply not in their hands. All of these protests were acts of political showmanship, attempts at putting pressure on the state government to address farmer demands. Tomarji seemed to concur with these assessments. Like others, he too insisted that the damage in this district was nothing in comparison to those whose fields were located in flood plains (*doob kshetra*). But this, too, was a result of farmers' misdeeds – after all, why are they farming in such places? Surely that is not the government's fault. In any case, he repeated, farmers should let the insurance process take its course.

> government can't compensate you for everything. Compensation can be given if there's an accident or something, but not for this.

Here, Tomarji is articulating a curious distinction between 'an accident' (for which a farmer can be compensated) and the broader and endemic risks of cultivation which were, ultimately, the farmer's own responsibility. In his account, agriculture is fraught with risks – sometimes from pests, sometimes from drought, and so on. Given this, it is not the job of the government to compensate farmers for what is the norm in farming. Farmers should instead be entrepreneurial, rather than dependent. As he noted, these were not "accidents" – unexpected and unfortunate events – that could be compensated.

His narrative implicitly frames agrarian risk within a calculus of probability – in other words, risks that can be predicted and managed (through insurance). It is only in the case of completely unforeseen and unpredictable events, the argument goes, should the state step in to offer direct compensation payments. While it isn't clear what would constitute an 'accident', what is certain is that farmers are expected to bear all the endemic risks of agriculture themselves – without the support of either the state or (increasingly attenuated) village and caste-based networks of patronage and obligation.

Risk itself becomes a technology of government, whereby farmers are expected to assume responsibility for their own risks and actively seek out risk-management tools. This expectation links back to the ideals of early liberalism wherein risk is viewed as central to self-ownership, and productive risk-taking the hallmark of 'free men'. Jonathan Levy argues that the downside of risk meant that free men assumed their own risk, but were also entitled to its upside, the reward for risk-taking.[41] Liberal ideals posited the free individual as risk-taker and bearer of

[41] This is starkly evoked in an 1842 Massachusetts Supreme Court decision which ruled that the railroad company was not responsible for damages to a worker injured on duty. The court ruled that the worker was a free man, owner of his own risk, and his wage was the reward for the risk he assumes. Of course, this understanding of self-

his own risks – even as it enabled the transfer of risk to financial institutions. Significantly, in many early legal disputes, insurance liability was limited to unforeseen "acts of God" and differentiated from the "acts of man", thus delimiting the scope of claims based on definitions of human agency (foresight, intention, responsibility).[42] Over time, the procuring of insurance itself came to signal these virtues.

In contemporary rural India, farmers are expected to invest heavily in the upkeep of their fields (against increasingly common pests and diseases, for example) and purchase an insurance policy, rather than expect government support in times of crisis. Even through this socialized and subsidized form of insurance, there is a push toward framing individual farmers as both risk-taking and at-risk subjects (cf. Roy 2010), who should develop an entrepreneurial and forward thinking spirit sans state support. This echoes the recent trend of embracing risk (rather than spreading it). In the words of Tom Baker and Jonathan Simon, "as more of life is understood in terms of risk, taking risks increasingly becomes what one does with risk" (2002: 1).

In this instance, insurance worked to do two things. First, at a broad level, insurance was geared toward the construction of risk-taking subjects, those who could both engage in high-risk cultivation practices but also exhibit foresight in taking out insurance policies – but, in both cases, do so independent of the state. Second, more specifically, the promise of insurance as a technical process that would take its own course served to deflect and defer farmers' questions and protests in the immediate present about the extensive damage to their crops, and

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responsibility shifted over time as can be seen in the landmark 1898 French legislation promising socialized insurance for workers against industrial workplace accidents (Levy 2012).

[42] Levy (2012) discusses the distinction between acts of god and acts of man as they emerged in the infamous case of the *Creole*, a ship carrying enslaved people from Virginia to New Orleans in 1841. When slaves revolted and escaped, enslavers sued their underwriters for compensation for the lost value of their property. This was denied based on the argument that revolt itself involved foresight and volition, showing that the enslaved were not property but human persons who, therefore, owned their own risks. To be unfree was for another person to own your risk, while to be free was to own that risk yourself.

responsibility for the same. That is, government officials would constantly deploy the technical language of insurance as a way to evade accountability.

These debates about responsibility and blame went far beyond the dingy halls of district government. Indeed, this production of risk as a commodity that can be quantified, managed and indeed, capitalized itself posed something of a moral conundrum. Historically, such an act has been viewed as a devilish attempt to supersede the hands of fate. Does protecting oneself against an 'act of the gods' risk further evoking their wrath? In the three years since the scheme began in 2019, the village of Pipliya witnessed two (non-consecutive) years of a poor soybean harvest. We might assume that its residents would then be especially grateful to be insured. Some were, but some were not. In the aftermath of the devastating 2019 monsoon, there were rumblings of a moral critique against insurance itself – now viewed as a blatant and indefensible defiance of the gods.

One evening, as I spoke with her husband about the extent of their crop loss, an elderly woman, Saritabai, cursed: "All of this has happened after insurance came. Ever since we have started getting insurance, we have had bad harvests. We're now being punished for our greed!" The act of circumventing one's fate through insuring against – even profiting off – harm was inviting further harm, even punishment. A few years prior, they were not well-insured – but their crops flourished and they had good yields. Now, they were becoming dependent on the insurance money since disease, dry spells, and excess rain were ruining their land. In Saritabai's mind, they had to be connected. This dilemma is not a new one, but goes to the heart of the risk question – is it moral to profit from risk? Or more centrally, is it proper to evade one's fate? Even as these questions remained unanswered, farmers' actual experience of insurance shows that it was not

quite what it was held up to be, creating new uncertainties and exacerbating existing inequalities, as the next section demonstrates.

2.4 Indexing Loss: On Correlations and Speculations

The PMFBY scheme is premised on an index insurance model, which is quite different from traditional insurance. Index insurance is a peculiar invention. Here, payouts are made not on the basis of actual loss assessment on individual farms, but on a publicly-verifiable index, such as rainfall, temperature, or a crop yield. These indices – and particular thresholds thereof – serve as a *proxy* for crop loss.[43] For instance, in the case of weather index insurance, if the local weather station records that the temperature crosses a given threshold (say, below 5 degrees Celsius), then all insured farmers within that area will receive an automatic payment proportionate to their landholding. Therefore, claims are made to a collective of farmers (based on geographical area), rather than to individuals. The PMFBY is a yield-index scheme wherein payouts are based on threshold yields calculated through the Crop-Cutting Experiment described in the opening scene of the chapter.[44]

This model is viewed favorably by the insurance industry and development planners as an objective and publicly verifiable measure of loss and one which reduces the transaction costs of individually verifying losses in each field. Moreover, index insurance purportedly overcomes the classic insurance problems of moral hazard (whereby people are de-incentivized from guarding against risk because they are protected by insurance) and adverse selection (wherein

[43] Leigh Johnson argues that this makes index insurance more akin to derivatives than to insurance per se.
[44] Another scheme launched alongside PMFBY, Weather-Based Index Insurance Scheme is weather-index based on weather station records, but I do not discuss that scheme much here.

insurance is inordinately purchased by those exposed to greater risks).[45] The individual's behavior becomes irrelevant here because the method of assessing loss is based on randomized samples.

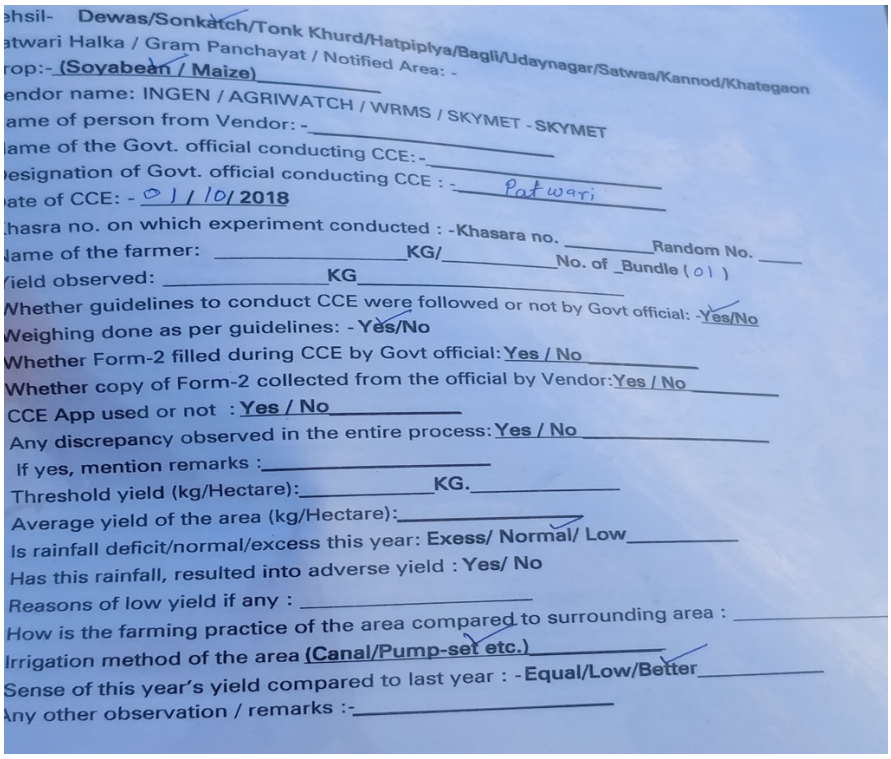
ehsil- Dewas/Sonkatch/Tonk Khurd/Hatpiplya/Bagli/Udaynagar/Satwas/Kannod/Khategaon
atwari Halka / Gram Panchayat / Notified Area: -
rop:- (Soyabean / Maize)
endor name: INGEN / AGRIWATCH / WRMS / SKYMET - SKYMET
ame of person from Vendor: -
ame of the Govt. official conducting CCE: -
esignation of Govt. official conducting CCE : - Patwari
ate of CCE: - 01 / 10/ 2018
hasra no. on which experiment conducted : - Khasara no. _____ Random No. ____
lame of the farmer: _____ KG/_____ No. of _Bundle (01)
ield observed: _____ KG_____
Whether guidelines to conduct CCE were followed or not by Govt official: - Yes/No
Weighing done as per guidelines: - Yes/No
Whether Form-2 filled during CCE by Govt official: Yes / No
Whether copy of Form-2 collected from the official by Vendor: Yes / No
CCE App used or not : Yes / No
Any discrepancy observed in the entire process: Yes / No
If yes, mention remarks :
Threshold yield (kg/Hectare):_____ KG._____
Average yield of the area (kg/Hectare):_____
Is rainfall deficit/normal/excess this year: Exess/ Normal/ Low
Has this rainfall, resulted into adverse yield : Yes/ No
Reasons of low yield if any : _____
How is the farming practice of the area compared to surrounding area : _____
Irrigation method of the area (Canal/Pump-set etc.)
Sense of this year's yield compared to last year : - Equal/Low/Better
Any other observation / remarks :-

Figure 15: A 'witness' form to be filled in by company surveyors

The index is, therefore, assumed to be efficient, accurate as well as actuarially sound. This framing of the index as neutral and objective rests on a faith in technical and standardized assessments of risk and modes of measurement. In 2019, when farmers called for government compensation for crop damage, a land revenue official noted to me that the farmers would simply have to wait for the 'technical' process to be completed. Government officials had indeed visited the fields to assess the damage, but that was only observation 'by eye' (*aankh se*) – it was not, in her view, a scientific and methodical assessment. But, as Rebecca Elliott writes in the

[45] Indeed, insurers note that farmers might be incentivized to take better care of their crop since they could technically have a reasonable harvest and also receive a payment based on the index crossing a certain threshold (for instance, low rainfall).

case of flood insurance, "Claims about flood maps, risk classifications, and the price of premiums, even when couched in a language of scientific "accuracy"… always drew upon an unremarked backdrop of normative commitments about what states, markets, and individuals can or ought to do."

The index too is only a proxy for loss and does not necessarily correspond with actually experienced losses of specific farmers. It is correlated with but not identical to experienced losses. In other words, individual crop losses may be greater or less than what is revealed by the index, but this is irrelevant since everyone receives the same amount per unit of land. The index can be triggered with no negative event occurring, or conversely, it might not be triggered at all even if a negative event occurs. In actuarial vocabulary, this discrepancy between indexed loss and experienced loss is known as 'basis risk', and insured farmers are expected to bear this element of risk themselves. Quite often during fieldwork, farmers would take me to their fields to show me their damaged wheat or gram or soybean, holding out the empty pods or rotting grain for me to take photographs. This damage was visible and tangible to them, and to anyone who visited their field. However, this did not mean they would receive a payout at all or one that accurately reflected their specific loss.[46] This disjuncture only fueled a lack of trust in insurance since farmers came to realize that payouts were often only a vague approximation – if at all – of their lived experience of damage.

Index insurance is therefore a particular construction of risk into commodity form in that it fails to capture the dynamic and variegated bundle of social, economic and ecological risks within which a farmer cultivates their land. Geographer Leigh Johnson writes, "Basis risk is an

[46] Of course, this is also true of traditional insurance. Rebecca Elliot (2021) evocatively shows how flood insurance fails to capture other forms of loss beyond property loss – the loss of home, the loss of security, the loss of social relations with friends and neighbors, and so on.

artifact serving as a constant reminder that weather risk is constructed into a contract form in order to make it exchangeable" (2013: 2675). 'Risk' against which insurance aims to protect is not preexisting but rather produced as a circumscribed commodity through insurance itself. The basis, Johnson notes, reminds us of the construction of risk as the excess which is not packaged into transactable form. Insurance then becomes a new source of uncertainty. One is never entirely sure if payouts will come, or how much they will be. Indeed, even supporters of the concept agree that "With basis risk, payouts become an additional risky prospect" (Carter et al. 2017: 423).[47]

Pawan, the loss surveyor introduced in the opening vignette, explained it to me this way:

> One insurance unit can have as many as 4000 land parcels comprising several villages. Of this, only 4 plots are randomly chosen to calculate average area-yield. It isn't possible for that to accurately reflect the losses faced by farmers even within that social unit. What if I sow early and my crop is destroyed in the cold spell, but my neighbor sows later and his crop is saved because it had not yet borne fruit when the cold spell hit? If his plot gets picked [for the survey], then it won't reflect my loss at all.

Not only does index insurance not account for ecological variations within a single insurance unit – from soil type to water availability to elevation – but it also does not reflect factors such as time of sowing which could produce radically different outcomes, even under identical conditions. Individual fates and fortunes can be both worse and better than what the index depicts. The index is a gross simplification, a way of eliminating the vast heterogeneity of social and ecological conditions of production into a standardized measure of loss.

Insurers, however, argue that the concept of 'basis risk' works both ways. That is, just as the area-yield methodology could potentially lead some to get payouts that are lower than their

[47] This affirms in part Ulrich Beck's theory of the 'risk society' in which forms of risk assessment and management invariably generate new contractions and uncertainties, thus necessitating even more mechanisms of governing risk.

actually experienced loss, it could also lead others to get payouts that are higher than their experienced loss. This was also true – and some farmers earned doubly from this. Their fields were not damaged, but they received substantial payouts nonetheless. Like most aspects of agriculture, insurance also became something of a gamble, which may or may not pay off, a risky investment with uncertain returns. In some cases, when average area-yields were lower than one's own individual yield, it could even trigger payouts without any experienced loss. While this was rare, it was not unknown, and led to forms of petty accumulation by farmers through insurance claims. A wealthy farmer with substantial landholdings bragged that, with certain crops, you could even make a quick profit through insurance claims. For example, he boasted that, with potato, you invest 3000 as premium, and you might get paid as much as Rs. 40,000 in claims if the threshold weather-index is triggered. The crop is damaged, but not so damaged that you could not sell it (even if for a lower price). Plus, you could get insurance money that more than compensated for your losses.

Basis risk, therefore, transforms insurance into a potential object of speculation, giving rise to new uncertainties even as it aimed to curb existing ones. Yet, this stark opposition between insurance (as evidence of prudence) and gambling (as evidence of play) is itself a historical product..[48] The index, therefore, is not a perversion of a more objective or prudential insurance model – rather, it simply foregrounds what is nascent within insurance as a technology of risk for both insurer and insured. In Francois Ewald's (1991: 199) words, "Insurance's general model is the game of chance: a risk, an accident comes up like a roulette number, a card pulled out of the pack. With insurance, gaming becomes a symbol of the world." Indeed, insurance was

[48] In his history of life insurance in eighteenth-century England, Geoffrey Clark (1999) writes that life insurance had roots in speculative practice and was initially associated with gambling. It took concerted government effort to separate these associations – both in the imagination and in practice. Specifically, the clause of 'insurable interest' ensured that purchasers of life insurance policies had a direct financial interest in the lives being insured.

always about both speculation and prudence, "conquering chance and betting on it" (Kar 2018: 172). This legacy endures in the index.

2.5 Getting the Yield Right: The Index and Actuarial Politics

Early on in my fieldwork, I went to visit the house of the village *patel* (ceremonial head), a tall slender moustached Rajput (upper-caste) man. His family was one of the founders of the village, and the title of Patel accrued to him by birth. While he did not host a state-recognized political position, the patel occupies an important role in village disputes and decisions. After I briefly explained my project, he began to extol his own contributions to the village. To the list of achievements, he added, lowering his voice: "I even got everyone insurance last year!" I must have looked puzzled because he went on to explain. He told me that he had set everything up, making sure that the yield was low so that everyone would get a payment. He didn't say more and I didn't probe further simply because I was shocked that he was relaying to *me* – an outsider and stranger – this information during our very first encounter. I was deeply uncomfortable with this knowledge, convinced that I had inadvertently become privy to a corrupt act, the nefarious tampering of yield data to ensure a payout. Surely this was insurance fraud, I thought to myself, unsure about what to make of this newly accrued but unverifiable knowledge.

I struggled – and continue to – with how to make sense of it. Questions swirled through my mind. Was it that the scheme was being subverted by local elites to shore up their political power and networks of patronage? Newspaper reports about local and regional politicians placing pressure on insurance companies to make payouts seemed to confirm this explanation. In an interview, a company executive complained that certain districts were notorious for political pressure tactics and data tampering, which led the company to exit the business altogether in

those regions. But did this also mean that index insurance itself was bound to fail since yield data collected through the random survey method could so easily be tampered with?

Some months later, I spoke to the *chowkidar* (guard) to ask more about his role in the insurance process. He invited me into his home – a mud house with a tin roof – for tea. The roof was low and there was only a tiny window, making it rather dingy. The TV blared a Bollywood movie but nobody seemed to be watching. We sat on a velvet sofa adjacent to a large bed. The chowkidar is a short, emaciated man with sunken cheekbones and blackened teeth from his incessant *beedi* (cigarette) smoking. Elaborating on the patel's brief and cryptic account of the previous year's events, he recounted: "That year, the [yellow mosaic] virus completely destroyed an entire section of the fields [in this village]. Half the village had no crop to speak of. We didn't even know what it was exactly. They [the government] called scientists from the city who came to the fields and took samples from the soil. But even they were not sure about what had happened!"

"But I heard that everyone got *bima* (insurance)?"

He nodded earnestly. "The *patwari* informed us of the selected random plot number ahead of the survey date. One plot selected was located at one end of the village. It had a bumper soybean crop that year. We would have gotten nothing if they had cut from there…So we paid some women to tear off pods and cut off stalks the previous evening to lower the yield."

At first, his account seemed absurd, almost comical, to me. However, in this account of the incident – as a justification perhaps – the guard emphasized that his manipulation was driven by the inequities of the process. *We would have gotten nothing if they had cut from there*. In his words, if he hadn't done so, then perhaps some farmers in his village (including himself) may have received far less money as determined by the logic of area-based insurance calculations.

The 'randomness' of the random sample method and the index as a measure of loss was unlikely, in his mind, to capture the extent of the losses faced by at least half of the village residents. One of the plots selected for the survey was unaffected by the destructive virus, and was likely to skew the yield numbers. While I could not verify the precise details of this account or of the specific plots that were selected for the survey, it was certainly true that all insured farmers in the village received a substantial payout for this season's loss (albeit the payment came nearly one year later).[49]

What this account revealed to me was a fundamental truth about index insurance as a social form and technology. While I had earlier interpreted these actions as a corrupt manipulation of the index (and certainly they were), the village guard's actions illuminated two different aspects of index insurance. First, insurance entered political networks of patronage as multiple state and quasi-state actors – the revenue official, the patel, the guard – attempted to shore up their political clout within the village through acts of benevolence (and manipulation). Insurance inasmuch as it is premised on yield is clearly embedded within a local political and moral calculus. However, this account does not only reveal how insurance is made political by various intermediaries and state functionaries. This account reveals that actuarialism is politics (cf. Elliott 2021) – that is, actuarial logics – the logics of assessing, calculating and modelling risks – evidenced in a supposedly neutral and technical index are always already the product of political choices: erasures, occlusions, simplifications.

The villagers then responded to the index itself as a politically and socially constituted artifact. In particular, the guard saw this action as a corrective to the randomness of the index which, quite often, exacerbated uncertainty for farmers by not fully covering the losses they

[49] Farmers received insurance payouts to the extent of 100% which amounted to Rs. 36,000 per hectare.

experienced. Therefore, it is not that the technical measure of yield *is made* political by farmers and their patrons. Rather, the index itself is already a social and political construction that defines and delimits what risk is, which risks count and which don't, and how it can be measured and managed. As Rebecca Elliott shows for flood maps that form the basis of actuarial rates, "decisions of what and how to simplify, and the effects of doing so, are never socially or politically neutral" (2021: 115). Therefore, rather than interpret this incident solely as a subversion of the insurance principle, resistance to actuarial domination or indeed, as the politicization of finance, it brought to the surface the politics embedded in the index itself – a politics which farmers themselves recognize and respond to in subtle and not-so-subtle ways.

But it is not just farmers who are attempting to get the yield right. In the opening scene with Sunil, I illustrated briefly the many different ways in which representatives of the insurance company are also invested in particular machinations aimed at manipulating yield outcomes: cutting crop from a particularly dense section of a field, ensuring that every single grain is weighed and counted, bypassing fields that are viewed as too weedy or unkempt. For them, 'getting the yield right' means ensuring that yields are high – but never too high, since this would increase the moving average yield for coming years. In other words, it is not simply farmers – nor is it all farmers or all farmers all of the time – who play with the form of the index in these ways. Moreover, while farmers hope to lower the yield (since doing so would make the average yield lower and therefore, trigger a payout), they are only now realizing that a consistently low yield over several years would lower the moving five-year average, and ultimately reduce payouts in the long term.[50] Everyone is invested in the production of yield data since even a

[50] Some farmers surmise that this might be the insurance companies' long game – to allow them to manipulate the yields in the short term by bringing the average yields low, and then intervening with more strict observations and technological monitoring of crop yields which would then ensure lower payouts based on the already low five-year average baseline.

difference in a few grams in weight could potentially lead to a difference of crores of rupees in claims. This makes the crop-cutting experiment an especially vibrant site of claim-making for farmers – making insurance claims and making political claims, as I will now detail.

2.6 Beyond Individualization: Making Claims, Enacting Solidarity

Critics often point out that this push toward insurance represents the financialization of welfare which replaces more socialized forms of support (Kar 2017). Moreover, financial instruments facilitate a shift from *rights-bearing* to *risk-bearing* subjects in the eyes of the state (Maurer 1999). Neoliberal governmentality has financialized the household and "individual subjects are increasingly charged with their own self-care through private market mechanisms" (Johnson 2013: 2667). At the same time, ethnographic research presents a somewhat different story. At a broad level, it must be noted that smallholder farmers in the global south never quite approximated liberal rights-bearing subjects. Nor have informal modes of managing risk disappeared. As proponents of formal insurance for agricultural households themselves note, it is not that poor families are entirely uninsured. As outlined throughout the dissertation, there exist a whole range of risk-sharing and adaptation mechanisms among rural population.[51]

Similarly, local forms of provisioning in times of crisis are common across rural India and village elites are seen as bearing the moral responsibility to make personal sacrifices for the good of the community (see Vasavi 1999). Modes of sharing grain and food during times of crisis are not simply instrumental transactions responding to a risk-laden ecology. Instead, they

[51] In his classic treatise, *The Moral Economy of the Peasant*, James Scott (1976) discusses the various social arrangements that offer peasants some security in the event of a calamity including self help in the form of craft production, petty trade, livestock and land sales, temporary migration, sharing among kin, neighbors, and patrons, state support in the form of welfare, employment, social security, or granaries, famine relief, public works employment.

"relate to the enactment of culturally and morally coded idioms that link the landed, service, ritual, and indigent caste members of a village in relationships of differential resource allocation, skills, power, and status" (Vasavi 1999: 80-1). Forms of exchange such as gifts of grain might be supplemented by monetary loans and labor transfers that operate through existing social networks. Indeed, economists and development planners designing and testing insurance products often view existing group-based risk-sharing measures as a necessary complement to formal insurance, rather than a replacement (see Mobarak and Rosenzweig 2012). Yet, they also note that these informal mechanisms are incomplete and not conducive to capitalist agriculture, leading "exposed farmers to choose low risk and lower yielding production methods, asset portfolios, and crops, instead of riskier but more profitable alternatives" (ibid. 1). These mechanisms still exist in new forms, although farmers have increasingly turned to the state rather than to local elites for aid in times of crisis and want.[52]

More significantly, however, I argue that index insurance does not necessarily individualize risk in the way that critical scholars often posit. Rather, I show that it might open up new avenues of rural solidarity, political contestation and claim-making. In the insurance form, risk is always social, as Francois Ewald has noted. Indeed, as Ewald writes, "Insurance solidarity is an institutionally produced and regulated bond between people" since everyone in the group is affected by what happens to everyone else so there is a fundamental interdependence

[52] While some commentators might look upon these cultural and moral modes of social reproduction in agrarian societies with nostalgia, people in my field village had a rather less rosy view of the past. Whenever I asked about how people would manage if bad weather ruined their crops, I was told that people would simply curb their expenses, take out loans, eat less or engage in some form of labor in return for grain or cash. Village elders recounted that those who had stores of grain would offer loans of grain to those in need – but this needed to be repaid the following year at a twenty-five per cent interest through a system called '*sawaiyaa*' (literally, a quarter). Thus, if you borrowed 100 kilograms of jowar, you would have to repay 125 kilograms in the next year. My inquiry as to whether there were any gifts of grain made to those in need was quickly dismissed. This is not to say that no such gifts were made, but rather to note that such exchanges do not seem to be a strong part of local collective memory in the present. In other words, there is no romantic recollection of a traditional past of patronage ties or collective modes of survival in times of crisis.

and reciprocity within the group, however defined. While theorists have shown that insurance emerged from liberalism's emphasis on individual responsibility and foresight, other scholars argue that this exists in tension with social solidarity among members of a shared risk pool (Lehtonen and Liuko 2015). In other words, as a cooperative mechanism in which a group of people share responsibility for loss, insurance creates a "community of fate" (Elliott 2021: 130).

Moreover, as a state-subsidized program, the PMFBY is an explicitly political technology of risk-management. Writing about the shift from government flood relief to flood insurance in the United States, Stephen Collier (2014) argues that insurance emerged as a political technology of catastrophe in the wake of critiques of government over-expenditure on disaster relief programs. However, this shift was not quite a neat movement from the collective responsibility model of the welfare state to the individualization of risk and responsibility in the neoliberal era. Rather, even flood insurance programs are federally regulated and administered, and represent a form of collective action geared toward the protection of property against floods. That is, while risk was certainly individualized through flood insurance, these programs are an accommodation between the imperatives of government and processes of rationalization.

In the case of index insurance, the solidarity principle is clearer inasmuch as either everyone in the insured pool receives some payment or nobody does. As I discussed in previous sections, this form of insurance is not based on individual losses but on a pre-determined index of loss for a given geographical area, most often a village or group of villages. Moreover, the solidarity principle extends even to loss surveyors who work on behalf of the insurer but whose social moorings and loyalties clearly lie with the farming community. The unit of insurance is therefore not individual, but distinctly social and spatial, mapping onto the existing socio-political unit of the village panchayat. As such, therefore, insurance comes to be imbricated

within existing networks of patronage and brokerage within the village unit. The actions of the village patel and guard recounted earlier attest to these emerging convergences.

Not only are claims made and assessed based on the socio-spatial unit of the village, but they are made through the crop-cutting experiment. Estimating the yield lies at the core of the settling of insurance claims. This one of the few occasions when both local government functionaries and insurance company representatives visit the village. This is a critical moment in the assessment of insurance claims as well as the articulation of political claims. Crop surveys are now widely attended public events – if the field selected for the cutting is located close to the main village settlement, dozens of farmers descend on the field to watch how the process works and, in some cases, to plead with surveyors. Indeed, those working for insurance companies routinely bemoaned the alleged 'intimidation' they faced from farmers, noting that farmers were now fully aware of how the process works and often attempted to manipulate it to their advantage. Although I did not ever personally witness any such direct intimidation, my surveyor interlocutors often commented on the pressures they faced from both the company and farmers, with their own loyalties somewhat torn between the two. On the one hand, all these surveyors come from farming families themselves. They are part of an educated but under-employed aspirational class of rural youth who have managed to find jobs with the insurance company since 2016. Hence, Pawan's jokes at the start of the chapter in which he positions himself on the side of the farmer asking for a share of the company's profits. On the other hand, as precariously positioned company employees, they are under pressure to ensure 'good results' from their districts, failing which they could potentially lose their jobs.

In October of 2019, I travelled with Chirag, previously a seasonal loss surveyor and now a full-time employee of the insurance company, on his surveys. While we are on his motorbike,

he gets a phone call from his company bosses asking about the status of the cutting and the weight. When he gets off the phone, he tells me, “Those were the company people asking what the status is. They want me to make sure the weight is low, but what can I do? In some villages, there is so much *netagiri* (politicking). I am only one person and I am afraid. I mean, who knows what could happen? Nothing ever has but there is a fear. And farmers know that *jab ekta hai tho power bhi hai* (when there is unity, there is also power). Sometimes they will all gather in the field to intimidate you.”

I ask, “But what about the government officials?”

He replies, “They usually stay quiet, they are also scared. They have to work in that village and deal with the people every day. They are worried about their jobs as well. The villagers can get them transferred. But I have to make sure to go to each crop cutting because there is a difference [in weight] between when I go and when I don’t.”

Figure 16: Farmers descend on a field to observe the crop-cutting experiment

Rather than direct pressure or threats, however, I witnessed far more subtle political acts at these surveys – farmers gathering to closely observe the process of crop-cutting, asking probing questions about how insurance worked, pleading with company and state officials to 'show mercy on them', crowding around the survey team to make sure the rules were followed properly, and so on. In most of the surveys I observed, there were no overt manipulations of the yield. But inasmuch as the yield of one plot represented the yield of all plots (in the village/insurance unit), something akin to a coherent social unit was conjured in the field. Numerous farmers descend on the plot to watch, observe, comment, plead, pressure. Once, there were so many people crowding the survey team during a measurement of the gram (chickpea) crop that the company representative joked sarcastically to the crowd, "Are you all owners of this plot?" Thus, the survey itself becomes a site for the coalescence of a highly differentiated and unequal village community in quasi-solidaristic alliance – even if only temporarily.

Simply witnessing this process might have its own effects. Pawan, the surveyor introduced at the beginning of the chapter, insisted, "Farmers have now become very active. I give them the company toll-free number to call if they have questions. Earlier the *patwari* barely came to the village to check yields. Now they see us conducting surveys at least 12 times a year for 3 main insured crops. They ask questions, they see how crop-cutting works. And they know what they are entitled to." These comments suggest that farmers might view insurance as another form of compensation, but one which they are *owed* by the state.

However, insurance creates the potential for solidarities beyond the insurance unit itself. While the sharing of risk and responsibility is clear within the socio-spatial and politico-administrative unit of the village, farmers make claims to and through insurance at broader scales. In 2019, when heavy rainfall inundated fields and damaged the soybean crop across

Malwa, farmers were quickly in the streets demanding government relief. By September, streets and highways across Malwa were lined with these bean-less stalks uprooted from fields and placed there by angry cultivators aiming to demonstrate their plight to passersby (and as a spectacle for the media and government). Nearly every single day for the next month, local newspapers carried front-page reports about farmers delivering a petition to or staging a protest in front of the main tehsil or district office. In response, the government quickly dispatched local revenue officials and agricultural extension agents to fields to conduct site inspections and submit reports estimating the extent of loss to the crop. Opposition parties incorporated this calamity into their political rallies, demanding that the state government pay farmers *muavza* and *bima* – insurance as well as compensation through government natural disaster relief programs.[53]

Insurance had already been incorporated into the political vocabulary of local and regional farmer protests. They demanded insurance payouts as something owed to them by the state, rather than a payment made by companies on the basis of technical measurements and actuarial calculations. Certainly, this was partly due to the marked absence of the insurance company within the local agrarian milieu (although the scheme itself mandates the establishment of offices at the sub-district level). Moreover, since the scheme is run as a social protection program heavily subsidized by the state, farmers expected their needs and demands to be met. Even in the previous winter season, when the gram crop was damaged by successive cold spells, government officials were sent out to villages encourage farmers to enroll in insurance programs. Although the damage occurred in late December, the final date for paying premiums was January 15. A farmer joked, "They're letting us get insurance after the death has taken place!" Although

[53] In December 2019, the Madhya Pradesh government paid out 25% of allotted compensation amounts to farmers across the state to the amount of roughly 800 – 900 rupees per bigha, or Rs. 3200-3600 per hectare. The remaining three installments of the compensation are to be paid out later.

insurance is routed through private companies, the state continues to play a crucial mediating role in shaping the rural financial landscape – even to the contravention of conventional actuarial principles.

The 'social' is however neither cohesive nor is it necessarily progressive. Solidarity is always in formation, never complete or without fissures and frictions. Indeed, this is the 'irony' of insurance, to use Eric Bahre's (2020) formulation, in that it offers care, protection and support in times of adversity while also creating conflict, inequalities and exclusion. Let me offer some examples to explicate this. For instance, when everyone in the village received insurance payouts, there were some rumblings of discontent (never, to my knowledge, erupting publicly) about certain households whose crop was not damaged at all but who nonetheless received a claim by virtue of being part of the given insurance unit. Only those who faced real damage should get compensated, some farmers insisted. The double profit made by certain households, even if 'random', was an affront to a local moral economy in which greed and ill-gotten wealth was, if not, wholly condemned, certainly the object of collective whispers. Beyond this, as explained earlier, some were left out entirely by virtue of being uninsured – and these exclusions were almost wholly along the lines of caste and class.

Apart from these internal fractures within potentially solidaristic insurance unit (the village), the social was also interestingly and alarmingly deployed as a shield against liability by the insurance company. As of 2019, there were at least six cases filed by farmers against an insurance company in the Ujjain district forum of the Madhya Pradesh State Consumer Disputes Redressal Commission. All of these cases were filed in response to a common occurrence – the non-payment of insurance claims to certain farmers. Since premiums and payments are routed through nodal banks on a collective basis (for insured units as a whole), there are several

instances of errors (a misspelled name, an incorrect entry on the insurance portal) that leads to a few farmers left without their rightful claims.[54] When the farmers filed complaints at the consumer forum seeking their claims (as their fellow insured villagers had received), the insurance company deflected responsibility for non-payment to the bank (another party to the case) and the bank back to the insurance company.

In its reply to the complaint filed in the Commission, the company maintained that it did not deal with individual farmers (*vyaktigat kisan*) in any respect – it did not collect premiums nor make payouts to individual farmers and therefore, had no record of individual farmers. It simply transferred claims for the entire insured unit to the bank, which was then responsible for disbursing claims to individual farmers.[55] The company refused to investigate the complaint or compensate the farmer, and instead demanded compensation of Rs. 10,000 from the complainant for their legal expenses.

The socio-spatial unit of insurance allowed the company to evade accountability to individual farmers who were not given their rightful claims. Like the index itself, here too the individual farmer and their loss is elided through reference to simplified categorizations.[56] Risk, therefore, is not necessarily individualized or individualizing. While the socialization of risk carries the potential to produce and consolidate solidarities, it does not necessarily signal the

[54] I heard of one instance of the claims for an entire village being sent to the wrong village since there were two villages in the district which shared the exact same name. The error was eventually corrected.
[55] This is not entirely true since the scheme also covers localized risks on an individual basis including localized calamities and post-harvest losses.
[56] While I was unable to access specific records that show the breakdown of area-based and individual farm-based claims, farmers alerted me to their own anecdotal observation: that while insurers made substantial payouts for group claims based on the yield-index, it was much harder to file a complaint and receive a payment for individualized losses such as inundation of a single field (which was indeed covered as per the scheme's rules). Rumors of corruption abound. As one farmer told me, 'What is it to them [the company] to give a few crores when they know it will mean they can avoid thousands of crores in claims?' Other government officials note that they have received orders from above to ensure losses are recorded above 50%, and thereby that payouts are made to farmers.

democratization of risk. It would seem that socialized risk suited insurers in multiple ways – not only did they receive huge state subsidies on premiums (the only way the business was viable), but 'the social' (unit of insurance) enabled the erasure of individual claims and the deflection of responsibility for clerical errors or unpaid claims. Not only does the index itself completely efface the individual farm/er, the diversity of ecology and idiosyncrasies of cultivation practices, but the area-approach more broadly can work to profit from risk while limiting liability.

2.7 Conclusion

Through the lens of a single insurance program, this chapter addressed questions of emerging moral economies of risk and responsibility between citizens and the state. As a technology of risk, insurance embodies productive tensions between accumulation and welfare, and between individualization and sociality. Rather than argue, as some scholars have, that insurance represents the financialization and individualization of agro-ecological risk, this chapter shows how it is socialized and politicized in its inherent construction as well as its implementation in fields, farms and government offices. This chapter focused on the process of yield assessment as a productive lens into the contestations around valuations of loss and attributions of responsibility in a rapidly transforming countryside. Specifically, I argue that the specific form of yield-index insurance creates new uncertainties and inequalities among farmers, even as it engenders novel possibilities for the articulation of rural solidarities and political claims vis-à-vis the state.

CHAPTER 3
Buying, Selling, Hoarding, Hedging: The Onion as a Speculative Crop

As a small farmer with 2 hectares of land, Krishna Patidar plants onions over two seasons every year. In August of 2019, I noticed some bags of onion still stored in his home. When I asked him why he had stored his onion for over four months, he said, "Chance *le rahe hai* (We are taking a chance)". Some of his relatives, who are agri-commodity traders, told him to hold on to his remaining produce since heavy rainfall had damaged the standing crop in major onion-producing states. Krishna had already sold much of his onion at various prices from Rs. 10 to Rs. 14 per kilogram.[57] But he surmised that it could take another three to five months for the fresh crop to be harvested. The resulting supply shortage would raise prices further, enabling windfall returns for his remaining bags.[58]

When I met Krishna again over a month later, much had changed. Onion prices did indeed rise sharply, just as his kin had predicted. But Krishna did not sell immediately, much to his wife's chagrin. Then the price dropped again, his produce had begun to rot, and he would now have to sell at whatever rate he could get at the market. He told me: "The price would have gone higher than 50 [rupees], I know it! But then the government placed a ban [on exports]. They just don't want us farmers to make any money."[59]

[57] At December 2020 currency conversion rates, one US dollar is worth about 73.80 Indian rupees.
[58] A common strategy of many farmers is to gradually sell their produce over several weeks or even months so as to take advantage of a range of prices. They sell enough of their produce to cover their basic production costs and then store the remaining in the hope of higher prices and profits. This guarantees that they would at least not lose money – anything more they earned would be pure profit.
[59] An export ban has serious effects since over 90 per cent of onions produced in India are exported abroad, making it the world's third largest exporter (in terms of dollar value). Foreign markets are, therefore, crucial to onion farmers. Following this 2019 export ban, the price of onions halved to Rs. 25.

As a commentator once noted: in India, 'to run a government, know your onion'.[60] Indeed, the price of the fabled onion is the subject of national headlines and electoral campaigns – a testament to its political importance. Skyrocketing consumer prices are believed to bring governments to their knees, such is the centrality of the onion to the South Asian diet and to national politics. When prices crash, attention shifts from the consumer to producers. It is not uncommon for irate farmers to dump their onions onto streets as an act of protest against falling prices. For both consumers and producers, the price of an onion is deeply political.[61]

This has much to do with the notorious volatility of prices, fluctuating wildly within the span of a few days – described by traders as a *jhoola* (swing).[62] The extreme variability in onion prices is complex and little understood – a combined product of unpredictable weather, poor storage facilities, the seasonality of cultivation, and hoarding of produce.[63] Indeed, it is this very instability of prices that makes the onion an incredibly lucrative commodity. Farmers and traders alike insist that there is a lot of *fayda* (benefit) to cultivation – most notably, high productivity and high prices (provided things go well). Despite this volatility – or rather, because of it – millions of farmers prepare their fields, transplant seedlings, build warehouses, buy and store produce, hoard, hedge and speculate on onions in order to get the best possible return on their investment. Often, however, their hopes are dashed by unseasonal rains, rotting produce, sudden

[60] Manreet Sodhi Someshwar. 2011. My Empire for an Onion. Opinion, *The New York Times*, January 19. Available at: https://www.nytimes.com/2011/01/20/opinion/20iht-Someshwar20.html

[61] There is a rich literature in anthropology and sociology on price, but this chapter does not delve into the question of price formation per se (see Beckert 2011, Caliskan 2007, Guyer 2009). However, I must note that my interlocutors tended to follow the neoclassical model of demand and supply in their understandings of price formation.

[62] Onions and other vegetables do not fall under the 23 crops assigned with the Minimum Support Price (MSP), a predetermined price at which the central government promises to procure specific crops (primarily, wheat, paddy, cotton and pulses).

[63] This price instability has only increased in recent decades as the effects of anthropogenic climate change are expressed in shifting rainfall patterns across South Asia. As summer months get hotter and rainfall more erratic and torrential, the steady supply of onions is affected, leading to increased price (Rutledge 2020). Even as farmers in some parts suffer from these shifts, others aim to capitalize on this extreme weather.

export restrictions, and storage limits. But in the end, farmers and traders simply throw their card into 'the onion lottery'. And while anyone could technically be a winner, patterns of accumulation largely follow entrenched rural hierarchies of caste and class. There is much to be gained – and lost – from the humble bulb.

In this chapter, I deploy the socio-natural qualities of the onion as a lens into the politics of uncertainty among farmers. These particular material properties have made the onion into a 'speculative crop', one whose cultivation and trade farmers compare to a gamble on the monsoon and the market (Aga 2018). In doing so, I examine the meanings and values associated with onion cultivation, showing how these emerge from the materiality of the crop – from seasonality to storability, productivity to perishability. Furthermore, the material and symbolic importance of the onion to Indian palates and politics means that the Indian government often intervenes in onion markets in multiple ways –to offer support prices to farmers and fair prices to consumers. This conflict between profits to farmers and constrained household budgets of consumers further shapes agrarian uncertainty.

Specifically, I deploy a "vegetal political ecology" approach as a "means of articulating how 'plantiness' – the set of characteristics and capacities specific to plants – shapes political landscapes and transforms political identities" (Fleming 2017: 27). Following the work of Lesley Head and others (2014), I argue that we must pay attention to the 'plantiness' of commodity crops from its conditions of propagation to its growth cycle and harvest. Further, this chapter follows the work of anthropologists and geographers in examining the multiple dimensions of human-plant relations (Besky and Padwe 2016, Chao 2018, Hartigan 2017, Myers, 2015, Tsing 2015) and countering what some have termed the 'plant blindness' of social science literature (Wandersee and Schlusser 2001). Focusing on the onion, I show how this crop creates

possibilities for speculative risk-taking within the agrarian economy. Dwelling on the material politics of the onion, I explore the dreams and desires, the opportunities and risks that circulate around the crop, and how this shapes the ways in which unequally situated farmers make decisions about its cultivation, storage, and sale. In particular, this chapter shifts focus to the heterogeneous and agentive ways in which farmers are responding to – and even profiting off – volatility. In doing so, I argue that the onion has come to typify the precarity and possibilities of agriculture in the current moment.[64]

This chapter begins with a brief overview of the conceptual framework I draw upon to understand the onion as a speculative crop. Then, I provide a detailed overview of the specific socio-natural properties that shape the onion's speculative potential. Next, I lay out the symbolic and political salience of the onion to the Indian state, showing how this ironically adds a further layer of uncertainty to its cultivation and trade. Following this, I examine the onion as an aspirational crop, describing the meanings imbued in the bulb as farmers pin their hopes of upward mobility onto it. Finally, I examine strategies of speculation deployed by farmers, arguing that speculation emerges both as a mode of survival and accumulation in this era of shrinking land parcels, declining water tables and shifting aspirations for the future.

3.1 Political Crops, Speculative Crops

In his book *Against the Grain*, James Scott writes that "the "aboveground" simultaneous ripening of cereal grains has the inestimable advantage of being legible and assessable by the state tax collectors", making cereal grains the paradigmatic 'political crops' (2017: 237). Key

[64] In focusing on this one crop, I do not want to posit an 'onion exceptionalism' or to argue that other crops do not offer speculative potential in other ways. Rather, my point is simply that attention to its specific socio-material and political qualities offers insights into contemporary agrarian speculation.

traits of cereal grains – visibility, divisibility, simultaneous ripening, transportability – were honed and cultivated to aid the formation of early states. Scott's provocative text highlights the material qualities of crops and the ways in which these qualities have shaped political processes for much of human history. This chapter extends these concerns to a different context and commodity to show how socio-natural properties of crops and their cultivation create distinct economic possibilities for growers and marketers in contemporary India. In doing so, this research joins the burgeoning scholarship in agrarian studies that centers the qualities of particular crops and explores the relationship between crops, capital, technology, and farming communities (Besky 2016, Kumar 2016, Münster 2015, Puri 2020, Sinha, 2020).

Figure 17: Traders gather for a *puja* (prayer) is conducted to inaugurate the first onion sale for the season

It also joins intersecting scholarly debates on financial speculation and agrarian studies , exemplified by empirical work on the global land rush and the financialization of farmland (Fairbairn 2014, Ofstehage 2018, Ouma 2016). This work productively engages crop attributes

through the concept of 'flex' crops and commodities, referring to the flexible uses of particular crops such as soy, corn, sugarcane, and oil palm which can be used as food, fuel, fiber, and so on (Borras et al. 2016). In the wake of the 2008 financial crisis, financial capital has been attracted to land and flex crops because these "have the potential to mitigate risk on investments while maximizing returns" (2016: 103).

While certain flex crops might allow financiers to diversify risk, these flexible uses might also create opportunities for temporary profit-making or "speculative flexing" as is the case of Vietnamese star anise used in Tamiflu medicine (Turner et al. 2019: 279). In the case of star anise, the materiality of the trees – requiring over a decade to bear fruit – means that it is smallholder farmers bear the risks of volatile markets, even as they grow the trees as a long-term investment in a stable income and safety-net for future generations (ibid.). The specific materiality of this crop, therefore, shapes how farmers approach its cultivation, and the meanings and futures attached to it. Writing about ginger cultivation in south India, Daniel Münster also argues that the "speculative economy of the ginger boom is coproduced by the biology of the rhizome and seasonal domestic market for ginger" (2015: 105). For instance, since ginger rhizomes can be kept dormant in the soil for up to one year from maturation, the 'season of speculation' can be long and volatile, filled with risks of disease and price drops (see also Li 2014). In north-west India, when the price of *guar* (a seed now used in the hydraulic fracturing process) spiked, farmers began to stock and hoard the seed, a practice made possible by its long-term storability and the perception of it as 'money in the bank' (Puri 2020). In contrast, research on maize in south India (Jakobsen 2019) shows that cultivation is predicated on its short duration, multiple uses, and limited labor needs – making it a less risky crop. Each of these

studies thus show how the materialities of crops shape social relations and processes of capital accumulation.

Moreover, these examples highlight the agentive capacities of farmers as they manipulate the socio-natural qualities of crops and the gyrations of the market to enhance their social and economic position. For farmers and traders in India, the qualities of the onion (among many other crops) are the grounds upon which visions and instantiations of upward mobility come to be pinned. Specifically, they mobilize and deploy crop qualities at various stages – from sowing to storage – in order to enhance possibilities for profiteering. In labelling the onion a 'speculative crop', I build on the work of anthropologists Daniel Münster (2015) and Stine Simonesen Puri (2020) who, studying ginger and guar cultivation respectively, show how Indian farmers are increasingly becoming speculators in agricultural markets.

In rural central India, onion cultivation and trade is emblematic of this speculative enterprise. Bad weather or sudden price crashes can be particularly devastating. Planting onions is distinct from growing staple food crops. Even if the price of wheat is low, it is never worthless – it can be stored to satiate hungry stomachs for a few years. Onion cultivation, however, entails a significant capital investment with uncertain returns. The future value of onions is dependent on a range of unpredictable factors: the duration and intensity of the monsoon rain, the Indian government's import and export policies, global onion markets, and so on. And yet, when yields are good or prices are high, the returns can be phenomenal. In many ways, speculative crops are imbued with anticipatory meaning and value quite similar to rushes for land in Special Economic Zones (Cross 2015) or offshore oil (Weszkalnys 2008). They are, as Cross notes, "uniquely charged objects of conviction and anxiety about the capitalist future" (2015: 424). In the next section, I outline how the crop-specific properties of onions shape its speculative potential.

3.2 Political Materialities of the Onion

Currently, India is the second largest producer of onions in the world (after China) and is the world's largest exporter. Indeed, production has expanded significantly, growing annually since 2002-03. In part, this was spurred by the National Horticulture Mission (NHM), launched in 2005-06, which promotes the cultivation of high-value fruits and vegetables through information about and subsidies for seeds, greenhouses, irrigation systems, and so on. Indeed, it is through the NHM that the central government made a strong push for horticultural growth as a mechanism to improve productivity, generate employment and provide income support to farmers. As more urban and middle-class Indians consume expensive fruits and vegetables on a daily basis, the demand for these crops is increasing, and farmers are now encouraged to shift from staple grain crops to horticulture. In the state of Madhya Pradesh, where I conducted fieldwork, onion production increased from 9.2 lakh tons to 3.2 million tons between 2010 and 2017. It is now the one of the largest producer states in India.

In this section, I discuss the following socio-natural properties and relations that shape its speculative potential,: investment, seasonality, storability, and productivity.[65] Onion cultivation requires considerable monetary investment in seeds, fertilizer and pesticide, far more than most other staple crops grown here such as soybean and wheat. The average expenditure on one hectare of onion cultivation is nearly one lakh rupees (roughly $1370) – including seeds, pesticides, fertilizers, labor, and water. It is also highly labor intensive, from the transplanting seedlings to sorting and grading the bulb in preparation for its sale – all of which is tedious and painstaking work done by hand, and primarily by women (both from the household and hired

[65] None of these properties are 'natural' or timeless in any way, but rather "relational to time and place, situated" in ways that make the onion a particular kind of 'socio-natural commodity' with specific affordances in the contemporary Indian context (Peluso 2012: 99).

labor). This means that not all farmers are able to garner the resources to engage in onion cultivation. Instead, smaller farmers might plant one or two bighas (less than half a hectare) – a size of plot that is commensurate with their investment capacities. As Sita, an elderly farmer told me, pointing to the field in front of us, "In that one field, you can make a lakh [rupees] off onion, as much as all our fields of wheat. *Par aage ka paise chahiye* (But you need money upfront)." The initial investment is a major deterrent to small and marginal farmers who either do not grow onions at all or plant it only on small plots of land. Indeed, even most larger farmers rarely grow more than two to three hectares of the crop because of the heavy capital investment involved.

Yet, returns on investment can be high if the yield is good. Herein lies one of the onion's most magical qualities. The onion, as many farmers note, is a bountiful crop. Even on small areas of land, production can be quite high under the right conditions and care. For example, on one bigha of land (one-fourth of a hectare), the yield can be anywhere between 50 to 100 quintals of onion (1 quintal is 100 kilograms or 220 pounds), depending on soil type, irrigation, and fertilizer use. By contrast, even the best variety of wheat can yield as much as 20 quintals while soybean yields an average of 2-5 quintals (per bigha).[66] Under normal circumstances, even a yield at the lower end of the spectrum can – if sold at a medium range price – can cover all investment costs and garner a small profit for farmers. In a country where the average farm size is about one hectare (about four bighas), this is of no small import. As landholdings get smaller and more fragmented with each generation, cultivators are shifting toward high-value and high-yielding varieties and crops (see Mohanty, 2016 for an all-India perspective on this phenomenon). More is expected from less and less land. As I will discuss later, this is also

[66] Onion yields can, of course, be much lower if not irrigated properly or if attacked by pests and disease, which occurs often.

intimately tied to productivist logics within which yield has become the primary (and often sole) focus of government policy and subsequently, of dominant agricultural ideologies and practice.

Figure 18: Laboring in onion fields. A farmer sorts onions (left) and farmers transplant seedlings (right)

The seasonality of onion cultivation is especially significant here – it is grown in three seasons which allows for year-round availability in kitchens across the globe. These three sowing seasons are: the early *kharif* (planted between June-August and harvested in September-December); late *kharif* (planted between October-November and harvested in January-March); and *rabi* (planted between December-January and harvested in March-May). The *rabi* (winter) crop accounts for about 70 per cent of production.[67] While supply of the winter onion is more abundant during harvest season in April-May (suggesting a price slump), the profit potential of this seasonal variety is greater since it can be stored. That is, while the monsoon onion must be sold almost immediately, the winter onion can be stored for several months. So, farmers might store their May harvest right up until October. At this time, stocks of older onion have largely

[67] Locally, farmers refer to the bright red onions of the monsoon as 'Nasik' (after the Nasik onion-producing region) and the light pink summer onion as 'Nafed' (after the National Agricultural Cooperative Marketing Federation of India).

been sold, while the new monsoon crop is yet to be harvested. It is during this time that a narrow window of opportunity emerges – ranging from a few days to a few weeks, depending on the status of the monsoon harvest. If the monsoon harvest in one region is late or damaged, this can send onion prices soaring. The reverse is also true: if the harvest is early and plentiful, the price of the older stored crop can fall quickly and dramatically.

Yet, this storability is critical, because this opens up speculative possibilities for farmers. However, while this potential exists for all prospective cultivators, in actual practice, it is quite sharply divided along overlapping lines of class and caste. It is only few farmers that can afford to store onions until this period of intense profitability. First, this requires holding off sales for up to six months, which only wealthier farmers with cash reserves are able to do. Second, it requires ample space with shade, cool air, as well as some light. Some farmers keep their onions stacked in their fields under the shade of a tree over the summer, while others have built private warehouses installed with lights and fans to ensure that it stays fresh. In addition, the onions need to be regularly sifted and sorted to remove rotting bulbs from the stack to prevent spoiling.

One of the biggest major reasons for the supply crunch that occurs every few years is the absence of public storage infrastructure. The private home is now at the heart of the agrarian infrastructure of accumulation. This is in stark contrast to the immediate postcolonial period when the construction of storage infrastructure was pivotal to nation-building projects. For instance, historian of architecture Ateya Khorakiwala argues that grain silos, first gifted by the United States to India, were crucial to the storage of buffer stocks of wheat, thus serving as a corrective to potential instabilities of market price. Khorakiwala (2016) writes that the silo formed a "quantitative architecture" defined as a "a calculable infrastructure deployed against the incalculability of weather and hoarding, absorbing surpluses and augmenting shortages to

manipulate the market in wheat". This was a crucial biopolitical imperative of the newly created postcolonial state, particularly in the wake of devastating famines that ravaged the region during the British colonial period. Storage facilities expanded further as Green Revolution technologies dramatically increased productivity, creating a surplus stock of grain. This formed what Khorakiwala calls a 'biopolitical apparatus' that mediated exchanges and flows of grain not only across space but also across time. Unlike public storage facilities and procurement systems for grains such as wheat and rice, horticultural crops such as onions are largely stored in private warehouses and individual homes.

Figure 19: A farmer sits atop a sack of onions in his small private onion storehouse

Thus, while there are warehouses in the district and farmers can apply to receive state subsidies to build storage units, storage infrastructure is largely private. It is wealthy farmers

with storage facilities who can keep their onions for long periods of time. This storage across homes and private warehouses suggests a certain invisibility to the state. While large warehouses rented or owned by onions traders were raided by tax officials during the 2019 supply shortage, the state has little ability to track onion storage in every village and field. Therefore, a definitive calculation of stored (and hoarded) produce is difficult to make – further adding to speculation on supply and price and thereby, the volatility of the onion market.

At the same time, storability does not imply durability. Farmers and traders describe the onion as a *kacchi fasal* (raw crop), one that requires constant attention and vigilance because it is easily spoilt. Unlike grains, it can be stocked only up to a point – at most a few months. Even then, storage is precarious since a rot in a single onion can quickly spread across entire warehouses. Ensuring the health of this *kacchi fasal* is time-consuming work, replete with uncertainties. "Sometimes you lose, sometimes you gain. There is nothing fixed in this trade. If there is just one bag of poor quality, a whole truck of onions can rot. You can make money or lose money, there is no guarantee of anything" were the words of a trader as he deftly extracted a blackening bulb from a sack of onions he had just purchased. This leads traders to refer to their profession as '*kaccha kaam'*, messy work in which nothing is certain. Therefore, even as onions can be stored, this storability is finite and subject to infra/structural and material constraints.

This perishability comes from two of the crop's defining features. First, the onion is composed of almost 90 per cent water: the longer it is stored, the more it gets dehydrated. It shrinks in size and weight (as even Krishna noted in the opening vignette) – simultaneously diminishing in quality and economic value. Second, excessive moisture and light cause onions to sprout and rot – just one rotting onion (mainly caused by highly contagious fungi) can destroy an entire harvest. So while there are important advantages to having the ability to wait, the friction

between storability and its ecological limits is central to its speculative possibilities. Indeed, farmers who did not have this ability often rationalized their compulsion as a wise decision – if the weight of onions halves and the quality deteriorates, then it's all the same to sell early, they reasoned.

And yet, it isn't quite the same. Waiting several months to sell one's produce can lead to both spectacular profits and crushing losses. The onion is a highly price-volatile crop, in part due to these socio-ecological dynamics of seasonality, storability, and perishability. Over the course of one calendar year (January-December 2019), I witnessed wholesale onion prices ranging from Rs. 1 to Rs. 50 per kilogram. The onion market, traders noted, is no different from the *vayda bazaar* (futures market or more aptly, stock market) in its volatility. Onions can, therefore, transform into both gold and garbage. This creates a peculiar and precarious temporality. Farmers and traders alike must tread a fine line between selling too quickly (and thereby, losing out on a potentially higher price) and selling too late (when the onions have spoilt or shrunk, and therefore, sell for a lower price due to deteriorated quality). But even if prices spike due to a supply shortage (or hoarding), the government could intervene in onion markets by imposing export restrictions or bans as well as stock limitations (allowing the government to prevent hoarding and price inflation).[68] It is this political valence that I will now examine.

3.3 Pungent Politics: What is a Fair Price?

At the core of the onion lies a tension between its profit potential to farmers and its political salience to the state. Even within the state, we see that the onion's political significance

[68] Onions were labeled an essential commodity under the Essential Commodities Act 1955 which allowed the government to control supply and impose stock limits to prevent hoarding. Onions have now been removed from this list through the Essential Commodities (Amendment) Bill, 2020.

takes two opposing, contradictory forms: on the one hand, the Indian government is invested in ensuring the stability of consumer prices in staple vegetables, and on the other hand, it is keen on assuaging farmer agitation around price crashes. Nearly every few years, this tension plays itself out. Take the year in which I conducted fieldwork (2018-19). In the early months of 2019, the price of the *kharif* onion hovered around Rs. 5; the price of the freshly harvested summer crop reached Rs. 8 in the summer months; then following heavy rainfall in early-producer regions, the price quickly rose – from Rs. 16 to Rs. 25 and then to Rs. 50 and higher in wholesale markets. By October, retail prices in major cities reached Rs. 100 per kilogram, and widespread uproar ensued in the national media and legislatures. As outrage over the unaffordability of onions swelled, the central government responded – as if often does – with restrictions on stocking, raids on hoarders, and a complete ban on exports.[69] Such is the power of the onion – a sharp rise in consumer price makes national headlines, sparks protests, and is even said to cause the downfall of powerful leaders.

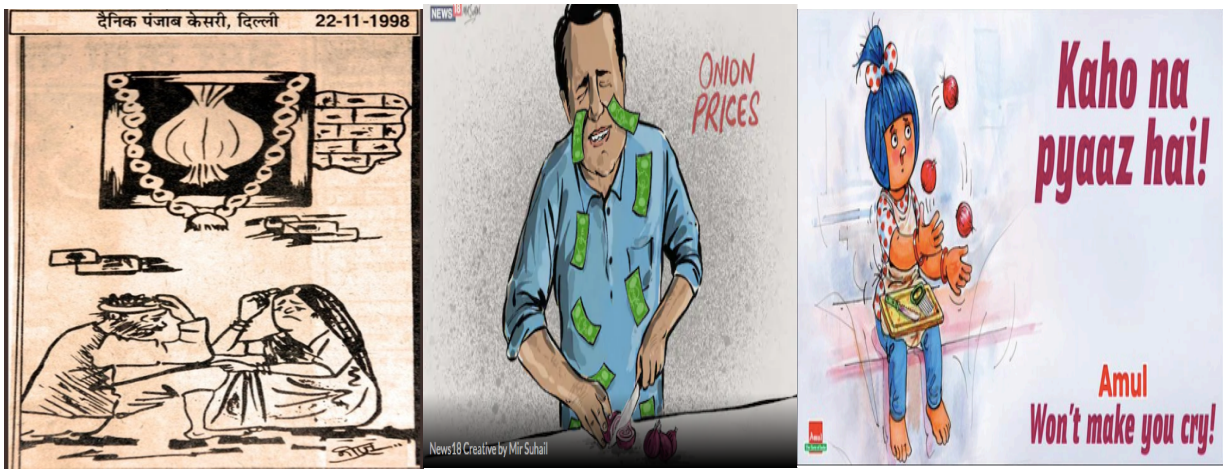

Figure 20: Political cartoons and advertisements referring to the distress to consumers caused by high onion prices

[69] The central government also has the power to increase or decrease the Minimum Export Price of commodities such as onions to satisfy domestic availability (for instance, increasing the price when there is a domestic supply shortage to ensure that less stock leaves the country).

The political salience of the onion does not come from any intrinsic natural qualities of the crop, quite unlike the cereal grains at the center of Scott's analysis. Rather, its import seems to stem from a more diffuse property – the diverse and ubiquitous value of its pungency. The onion is eaten in India in various forms – raw, pickled, cooked. Onions are so central to a large part of the Indian meal – particularly in north, west and central India – that high prices are said to devastate household budgets. It is also consumed across classes, with the onion serving as a key savory for impoverished families. The poorest households eat *roti* (bread) with a single onion (alongside salt and green chilies) to add pungent flavor to an otherwise sparse and unpalatable meal. Its value to the state comes not from its taxability and calculability but from its very prosaicness, its ubiquitous presence in the national diet. Indeed, food has always been a central part of the Indian project of nation-building (Seigel 2018) and food provisioning is key to state legitimacy (Rutledge 2020). The onion is no different.

As a politically sensitive crop, observers note that the onion is now seen as a key metric of inflation and good governance in the country. This legacy is traced to former Prime Minister Indira Gandhi's political comeback in 1980 when a key platform of her electoral bid was high onion prices of the then-Janata coalition government, serving as an index of state apathy and neglect. It was called the "Onion election". Indeed, the onion is invoked and deployed as a potent political symbol – whether it is opposition leaders wearing onion garlands to protest rising prices or farmers throwing their onions onto the streets (or at politicians) to show their ire at falling prices. In India, onion can be political kingmaker.

In late 2019, as consumers protested and parliamentarians debated the soaring prices, the mood at the district market was more muted. The jubilation of an early price surge was tempered by worry and anger that the central government would intervene with price controls and export

restrictions – which it eventually did. Farmers and traders alike were seething. They asked, where was the media when we were throwing our onions onto the street? While the plight of onion farmers is not as widely discussed in the mainstream media, it is not absent either. In both 2018 and 2019, the regional government of Madhya Pradesh instituted a program to subsidize onion prices in a slightly modified version of the Minimum Support Price program for agricultural commodities. Through the month June 2019, agricultural markets across the state implemented the Bhavantar Bhugtan Yojana (Price Difference Payment scheme) under which pre-registered farmers would be paid the difference in price between the predetermined government rate (Rs. 8/kg) and the market rate. That is, if a farmer sold their onions in the market at Rs. 5 per kilogram, they would receive an additional Rs. 3 per kilogram from the government as compensation (amounting to a maximum amount of Rs. 8/kg).[70]

Figure 21: Farmers line up in tractors outside the market to sell onions through the Bhavantar Bhugtan Yojana

[70] In 2017, the government directly procured onions from farmers and planned to sell them, but much of the procured produce rotted due to improper storage, thus leading to huge losses to the state exchequer.

On a scorching day in early June 2019, I reach the Shajapur *sabzi mandi* (vegetable market) to witness the first auctions under the scheme. A large number of farmers had already registered for the scheme, no surprise given the abysmal market prices for onion for several months prior. The market was crowded with farmers patiently waiting in tractors, trolleys and three-wheeler rickshaws to sell their produce. For many, the first weeks of June were their last opportunity to do so – the monsoon rain would arrive soon, and then they would be preoccupied with planting soybean for which they needed immediate cash.

My friend, Lalit Malvi, was one of the farmers who sold under the scheme. A resident of Pipliya, Lalit was a 26-year old Balai (Dalit) man, married with two small children. He manages his family's sizeable fields (40 bighas) almost single-handedly – his grandfather is too old, his father is simply uninterested. Despite their landholdings, his family is surprisingly poor – fellow villagers wondered how they had so much land and yet continued to live in a mud house, saddled with debt. Lalit was almost embarrassed by his onion – when I peeked into his trolley, I saw about twenty sacks, most of it '*golti'* or small onions.[71] He told me sheepishly that he had a problem with water this year ("*paani ki samasya thi*"), which explained his poor yield. He had registered in the hopes of the eight rupees per kilogram promise of the state government.[72] Yet it is not only poor farmers who sold under the scheme – rather, many farmers demand this assured price so they might sell part of their produce at a fixed rate and stock the rest to sell if and when

[71] Indeed, traders believed that farmers were most likely to bring their worst *maal* (produce) to take advantage of the scheme – after all, the government was not concerned with quality of the onions and would give all farmers the equivalent of the base price. This was not quite true. Over the course of the month, I witnessed everything from bright pink bulbs to blackened and rotting sacks.

[72] At the mandi, however, farmers were critical of who really garnered its benefits. I met a young farmer who told me that he had just sold his onion, but not under the scheme. He explained why. "Once they [the traders] learn that you have *punjiyan* (registration under the scheme), they send you to a corner. What should go for 8 rupees will go for 6 – they lower the price by 2-3 rupees since they know the farmer will get the money from the state anyway."

prices rise. In this way, they could receive the assured price for some produce (to cover all the costs of production) and speculate on the rest.

I waited with Lalit all day in the heat as the line of tractors inched along toward the market gate. After hours of tedious anticipation, Lalit's onion was sold in the blink of an eye, much like Pyarelal's produce in the introductory section. The auctioneer quickly glances at Lalit's onions scattered at his feet, calls out a figure, a trader nods. His best onions sell for Rs. 3 per kilogram. The crowd moves to the next pile and Lalit sweeps up the onions on the floor back into the sack. While Lalit received his payment from the trader, I learn later that his subsidy payment from the government never arrived. The government's promise of a good price never came to fruition.

3.4 Bulbous Aspirations: Produce or Perish

Onion yields are bountiful, I was constantly reminded. Its high productivity makes it especially lucrative to smallholder farmers who cultivate small and fragmented parcels of land. Even if the price is not especially high, with good yields, farmers can hope to make a reasonable profit from the crop. Of course, if prices rise (as we shall see in the following section), the profit potential soars, promising incomes that can rarely be gained from other crops. My friend Karan, a young farmer, explained in detail to me the transformative possibilities of the onion. A member of the Patidar caste, Karan is in his mid-twenties, college educated and unmarried.[73] Coming from a farming family, his brother and father largely manage their 30 bighas of land, with Karan

[73] As we shall see in Chapter 5, the most prominent speculators are Patidars, an agrarian caste spread across western and central India. They are primarily farmers but have also diversified into trade and agri-business. They are farmers with capital reserves, private storehouses, and contacts among traders. In other words, these are the groups that control 'the means of speculation' (Bear 2020). These middle-caste groups have benefited most from the liberalization of agrarian markets (see also Aga 2018).

contributing when necessary. His family was fairly prosperous, owners of two houses (one used to store produce), two tractors, and a small car. But Karan insists that their fortunes were not always such, but rather than they changed over time – in no small part because of the onion.

Throughout my fieldwork, I was often regaled with stories about the enormous productivity and profitability of onions. Its possibilities – and perils – were discussed far more than any other crop. When I asked Karan why his household chooses not to grow any wheat, he tells me that they might have grown wheat if they had plentiful land – say, a 100 bighas. But they have limited land (even though their landholding is far above average). He went on, "Maybe if I had 60 bighas of land, growing wheat would be enough. But with 30 bighas, it would take me years to make much profit with wheat. The money I can make with 10 years of growing wheat, I can make just with one good season of onions!" Certainly, onion yields are far higher than those of wheat. This is even though India has one of the lowest rates of productivity for onions in the world (far below the world's leading onion producer, China). In terms of price, wheat can be sold at government procurement centers, making it a safer crop in that it offers a stable and fixed price to farmers. But while its fixed price offers a sense of security especially to small farmers, it does not necessarily satisfy their desire for upward mobility.[74]

Karan explained, "Those who grow wheat will remain where they are. *Vahin pe vahi rahe jayenge.* (They will stay in the same place). They won't move ahead in life. It is like they will be exactly where their forefathers were." In his view, wheat symbolizes stasis – it does not enable upward mobility and progress toward a better life. He continued, "Those farmers are merely breathing, they are not really living." To Karan, those farmers are simply surviving from day to day, from meal to meal. They are not fully living – earning enough to escape poverty, to live a

[74] This is quite different from Sinha's (this issue) discussion of Punjab farmers shifting away from weather-sensitive and price-volatile cotton toward paddy which offers a guaranteed price.

good life, to achieve economic prosperity that surpasses that of generations past. Onions, however, might allow this. When farmers sow the seeds of this crop, what sprouts from the rich black soil is hope for a better life in the material form of thick green stalks.

Although this might be partially true, Karan's perspective reflects the now-dominant obsession with productivity for its own sake, the ideology that more and bigger is always better. It is the ideology of the risk-taking capitalist entrepreneur for whom the cultivation of subsistence crops with a guaranteed price signals a lack of ambition and aspiration – rather than perhaps a pragmatic and carefully considered choice amidst material and social constraints. What is elided in Karan's account is that those who grow wheat are often smallholder farmers belonging to marginalized castes who often lack the ability to invest in cultivation and to tide through potential losses, and also who do not have access the agricultural knowledge and marketing expertise needed to cultivate risky horticultural crops. At the same time, when lower-caste farmers did cultivate these cash-crops (as many did), they were often met with derision. Over the course of my fieldwork, I had grown accustomed to hearing upper-caste farmers bemoan the glut of onions in the market, noting that "Even Harijans have started to grow onions!"[75]

Certainly, onions also embody the aspirations of Dalit (so-called 'Harijan'/'lower caste'/formerly 'untouchable') farmers. In Malwa, there are several Dalit (primarily from Balai and Bagri castes) farmers who grow onions – many quite successfully. In 2018, when I first came to the village, I found an onion craze – I was told by my host family that far more households were planting onions this year, largely due to the lure of high prices from the previous year. This "*dekha dekhi*" (imitation), as one farmer put it, made everybody – including

[75] The term Harijan literally means 'children of god', but it a problematic term used mainly by upper-castes to refer to Dalit communities.

those who did not have the "*kshamta*" (ability) – try their hand at onion cultivation. Those without ample water supply, without large landholdings, without cash reserves or non-farm incomes were taking greater risks, especially given the enormous price volatility of onions. Indeed, many Dalit farmers stated they had trying growing onions but stopped after one season since they could not bear the potential losses. Yet the onion remained a symbol of hope. Bhanu, the twenty-year old grandson and only male heir of my host family spoke often with pomp and flair about the promise of onion. The family is poor and own little land, having tried and failed to find groundwater. He told me, "When I'm in charge, I'll find water and then we'll only grow onion!" Just as campesinos in Paraguay speak of soy as a crop of annihilation (of a rural way of life) (Hetherington 2020), farmers in Malwa continue to discuss the humble onion as a crop of aspiration, promising a tenuous path out of the subsistence farming of the past.

3.5 Accumulation by Speculation: The Farmer as Trader

In the opening section, we were introduced to Krishna's strategy of onion storage and sales. He grows onions in two seasons, but always stores some of his winter onion in the hope of a better price. He speculates on the possibility of a higher and higher price – sometimes gaining huge profits, sometimes severe losses. Krishna is not a particularly wealthy or large landowner. Like many other farmers, he adopts a careful strategy – selling more than half his onions as soon as the price crosses Rs. 10, and then stocking the rest in the hope that the price might rise five-fold – or more – over the coming months. This is the stock set aside for a sort of gamble on the market. One hopes for a windfall profit but must be prepared to throw it all away.

In general, the "season of speculation" (Münster 2015:105) for onions is fairly narrow. There is no prolonged boom and bust period. Instead, the period of heightened profitability can

range from merely a few days to a few months.[76] As farmers well know, timing is everything. The primary opening for speculation emerges from the seasonality of domestic onion production. As discussed above, farmers hope to capitalize on the gap between the dwindling summer stocks and the new monsoon harvest. In 2019, waterlogging from torrential rain destroyed the bulb, which grows close to the surface. Farmers were forced to replant, which delayed the harvest by two to three months, thereby extending the speculative season for those with stocks. However, strategies of accumulation among farmers are never purely speculative – most farmers saw waiting as a calculated risk. They knew that prices were likely to rise sometime between August and November – the uncertainty lay in how long this price rise would last and how high the price would go. Even farmers who 'wait' make calculated decisions about when and how much to sell.

Pradip Patidar, who runs a successful agro-chemical shop, explained his household's strategy: "We started selling when the price hit 25 rupees [per kg]. We sent some produce everyday to the Indore market – a truck goes from the village carrying onions from several homes. The price fluctuates daily. We've gotten 25, 28, 30, 35, 40, 50 [rupees per kilogram]. By selling at all these prices, we get a good average rate. And then at least we can say, we sold at 50 [rupees] too!" Pradip is describing a common approach of waiting until the price reaches a particular threshold, then selling small amounts regularly to mitigate the risks of daily price fluctuations. These narratives of speculative profit-making "reproduce ideologies of choice, autonomy, and individual success and lure cultivators and white-collar workers alike to engage in high-risk styles of production" (Münster 2015: 101).

Stories of failure circulate as much as stories of success. Onion's dire effects were the stuff of idle gossip and cautionary tales. In the market, every story about riches from the crop

[76] This season begins in mid-August, after the festival of *Raksha Bandhan* and following the month of *Sawan* in the Hindu calendar (when devout Hindus engage in multiple fasts and refrain from eating onions and garlic).

would often be followed with bitter laughter: “but a lot of land has been sold because of the onion too”, implying that farmers lost their land in order to pay off onion-related debts in the face of crushing losses. But stories – and memories – of windfall profits are often too alluring to ignore. Indeed, farmers justified their speculations on the premise that they were merely ‘chasing losses’ from previous years (Puri 2020) – that is, farmers felt they deserved this windfall profit precisely because it came only once every few years.

The temporality of production cycles offers other speculative possibilities. By October, it seemed likely that the supply shortage would be prolonged and prices would remain inflated for longer than usual. Savvy farmers took note. For instance, Jivan Patidar travelled to the neighboring state of Maharashtra along with two friends to purchase onion seedlings to plant in his fields. Rather than having to sow seeds and wait over a month to transplant the seedlings, buying seedlings directly would put him ahead of the curve. He could still gain from this ‘gap’ since his onions would be harvested early – before the harvest of a majority of local farmers who would have to re/sow onion seeds since they couldn’t directly buy expensive seedlings. Jivan’s strategy was a gamble – he was counting on the supply crunch lasting at least two more months (when his crop would be ready for harvest). This was a risky decision, but he was fairly confident. But this confidence was rooted in his ability to make this risky investment (travelling to another state, buying expensive seedlings). The winners in this ‘game’ are always those who can invest the most, plant the earliest, store the longest, and harvest the quickest.

But Jivan had another strategy as well. He grows onions but also buys and stores onion (and potatoes) from other (smaller) farmers who needed to sell quickly. From them, he bought onions at about Rs.5 per kg in May, stored it, and then sold at Rs. 25 per kg when the price went up in September. In doing so, he made a five-fold profit on his investment. A number of farmers

across the region have entered petty trading – not just wealthy farmers, but also those without large landholdings who diversify into trade to supplement their farm incomes. An *arhatiya* (commission agent) at the the Indore market elucidated the changing dynamics of the market to me, "*Kuch kisan game khelte hai* (some farmers play the game). They are farmers, but they are now also traders. They keep stocks just like us." This refers to both the stocking their own harvest and buying up the harvests of smaller farmers. Jivan does exactly this. His path to wealth lies less in farming itself and more in speculative trading. As Jivan's father explained to me: "*Kheti karne se bangla nahi banaya hai!* (Agriculture did not build these bungalows)." I look puzzled so he continued, "they were made by stocking – buying cheap, selling high. If you do this for a few years with success, you can make a fortune. *Paise se paisa ban gaya* (Money becomes more money)". Farmers too have become traders – buying produce for cheap, stocking it in warehouses, and selling when the price rises.

Figure 22: An arhatiya stands atop a sack of onion as the produce is auctioned

It is now farmers themselves who have become middlemen traders – buying up produce directly from fields, storing and selling when prices rise. The speculative market is not solely driven by outside traders, but also by farmers – usually wealthy and landed, belonging to upwardly mobile peasant castes (such as Patidars, Khatis, Jats) – who see speculative accumulation as a key path toward economic and social mobility. Indeed, the category of the 'farmer' is itself highly differentiated, so much so that some farmers are traders and speculators themselves, and engaged in exploitative relations of extraction from poorer farmers. Upward mobility for some farmers is, therefore, often premised on the forced stasis of others.

3.6 Conclusion

Despite the debacle with his onion sales under the government scheme, my friend Lalit remained optimistic. One bright August morning, he told me, "I just need to sort out this water situation. If I find water. I can grow anything." When I spoke to him one year later, long after I had returned from fieldwork, I learned that he had grown 2 bighas of onions since there was plenty of water from the heavy monsoon rain. While he still grew wheat and gram on most of his land, he made about Rs. 80,000 from his onions alone. He was thrilled – this was far higher than he expected and far more than his previous year's earnings. While Lalit did not engage in high-risk speculation on his sales, his venture was still considerably risky given his economic position. And yet, it yielded profitable returns, at least this time.

Building on James Scott's concept of 'political crops', this chapter has argued that the socio-material properties of onion cultivation combine with the rising economic aspirations of farmers and the political calculations of the state to make it a risky venture. Specifically, I develop the concept of 'speculative crops' to account for the ways that the socio-ecological

qualities of the crop interact with class aspirations, structural inequalities and state policies to exacerbate agrarian uncertainty. While the onion's qualities do not make it visible and taxable in the same way as wheat or rice (quintessential political crops), its centrality to the Indian diet – and therefore, to food security – makes its price of crucial importance to state legitimacy. Moreover, the volatility of supply which shapes the unpredictability of price makes the onion an object of political concern vis-à-vis farmers. From the perspective of farmers themselves, these entangled uncertainties – from the weather to state policy – make the onion a particularly risky crop.

Moreover, I have demonstrated how farmers pin their economic aspirations and anxieties onto these material properties. For instance, it is the seasonality of production combined with the limits on storability that account for its profit potential. But it is these very same qualities that could lead to crushing losses. Focusing on the dynamics of cultivation, harvesting and storage, I have highlighted the "coproduction of economic and ecological exchange" (Münster 2015: 111) such that the material-biological properties of the crop intersect with capital investment, knowledge networks, rainfall patterns and market practices to shape its speculative potential. These properties and affordances are dynamic and specific, and therefore, amenable to a different sort of material politics. Yet, situated within the contemporary agrarian political economy, these qualities offer a novel entry-point into understanding processes of accumulation and differentiation in the Indian countryside.

Further, it expands literature on financialization and farmland beyond a singular focus on land as a commodity and on high finance actors such as corporations and hedge funds. Instead, it examines how farmers in rural India themselves engaged in practices of hoarding, speculation and trade as both a mode of accumulation and a means of survival. Indeed, "social life is being

lived in a climate of speculation" such that farmers are now taking out loans to invest in production and then betting on the weather and global commodity prices to yield returns (Gupta 2017: 15). As such, this chapter shows that speculation is rife in the agri-commodity markets of rural India (cf. Bear et al.: 2015). More specifically, it points to the materiality of speculation, grounding practices of market anticipation in the specific ecological properties of a single crop. While farmers speculate on a number of crops, I argue that the temporal and material specificities of the onion make its production a uniquely speculative enterprise inasmuch as the risks of loss are extraordinarily high. However, existing hierarchies of caste and class – manifested in unequal access to agricultural and marketing expertise, capital, and storage – mean that it is (largely) a certain group of big farmers who successfully capitalize on these qualities.

A wealthy farmer once noted to me: the small farmers are dying and the rest of us are playing *satta* (gambling). The possibility of winning big exists, but one must also be prepared to lose everything. As a speculative crop, the onion therefore has come to typify contemporary commercial agriculture in India marked by the near complete individualization of risk (Vasavi 2012). The financialization of agriculture means that farmers themselves insist that speculative trade is the only thing that makes farming today profitable. Thus, through close attention to the political-ecological qualities and meanings of the onion, this chapter has shed light on the aspirations and anxieties of farmers in rural India. Despite the risks of onion production, farmers continue to capitalize on its potentialities, stocking, sorting and waiting for the right time to sell, all in the hope of a good price and indeed, the good life.

CHAPTER 4
A Well of One's Own: Fate, Fortune, and the Possibilities of Groundwater

On a cool October morning, after several failed attempts at trying to speak with him when he was either going to his other fields or heading to the market to sell vegetables, I finally get a hold of Babu. The monsoon rain is finally abating but I am ankle deep in wet mud as I make my way through neat rows of soybean to reach his field. I am meeting Babu at his small patch of land, located at a slight elevation on rocky soil, close to the main road that runs through the village. His family has been leasing this plot from a elderly widow for two years now to supplement their cultivation on another small plot which they own. A marginal landholder, he belongs to the Bagri caste, a Dalit (low caste or formerly 'untouchable' community) which was classified by the British colonial government as a 'nomadic tribe'. The sum of money for the lease is substantial, but the land comes with a tube-well which provides plentiful water and is conveniently located. He leased out this patch mainly to grow vegetables which his wife then sells at weekly *haats* (markets) in nearby towns. When I reach the plot, his wife is picking *bhindi* (okra) from a small patch, deftly tossing them into a green tub that she holds against her hip. Five other women - her daughters-in-law and local agricultural laborers - squat in the coriander patch, picking out the weeds that have mushroomed around the short stalks. Their field is a lush patchwork of different vegetables – okra, coriander, green chilies, zucchini, and green beans.

Babu is standing in a corner, smoking a *beedi* (cigarette) as he often does, wearing his standard outfit of a muddied white *kurta* (long shirt) and *dhoti* tied up around his knees. He spreads a tarpaulin sheet across a clear patch of ground and we sit cross-legged facing each other. His three-year old grandson sits restlessly in his lap. As we chat about his day, he tells me that vegetable prices are quite good now - primarily because of the severe damage caused by the

heavy rainfall to crops across the region. Tragically, however, much of his soybean crop is destroyed - this year's yield, he rues, is only 1 quintal (as against 3-4 quintals in other years). But it is not just him - many of the country's farmers, particularly in central India, are reeling from the devastation for the year's prolonged and intense rainy season.

Babu is falling on hard times. Many of his vegetables were also damaged by the rain and he is now short on cash to pay the labor needed to weed his field. His (illegal) trade in sandalwood was recently curbed by the police, and his son is out of work. The last time I met him - a few days earlier - the electricity connection to his tube-well had burnt out, making it impossible for him to irrigate his thirsty crops. The problem had now been fixed and he could finally turn on the pump.

Our conversation that day meanders into a discussion of his experience with growing vegetables. Knowing that it requires a regular water supply, which is often lacking in the area, I asked him about irrigation facilities in his two fields. Ujjain district, located within the Ganga basin, has several rivers traversing its boundaries (primarily the Chambal, with tributaries Kshipra, Kalinsindh, Gambhir and Chamla) but surface irrigation is minimal in the district where the primary source of water is underground aquifers. These are tapped through traditional dug-wells but more often, through tube-wells drilled deep into the subsurface. Presently, much of the district is classified by the government as 'over-exploited' in terms of its groundwater extraction.

"Did you always have enough water for this?" I inquire.

Babu nods vigorously. "There is water in my other field too! Some from my house (tube well)...But I have drilled fourteen wells!", he says, much to my shock. Fourteen tube-wells is not a small number - each tube-well, depending on its depth (which can range from fifty to a thousand feet), costs on an average between Rs. 50,000 and 100,000 ($800-1200). He chuckles at

my horrified expression, saying, "This is why I'm in this position, why I have to lease out this patch of land!"

And yet, despite the obvious debt he is likely to have gone into to do so (although he does not mention debt specifically), his tone is full of pride in describing the events that led him to drill as many as fourteen tube-wells, noting that he was the first in his *mohalla* (caste-based neighborhood) to do so. The obvious question that followed was: why fourteen? With his exaggerated flair, he tells me that he simply did not find water in each but kept the machine going. He drilled nearly ten holes in the span of a week, and then also continued this drilling for his home. This continued until he found some water.

"So how do you decide at which spot to drill the well?"

"*Marji se* (it is your choice). There is no one way, you just decide where you want to put and you do so. But you have to have *bharosa* (belief)".

The women working nearby laugh at my question. One of them shouts out: "Just say you want to put it where you are sitting right now, and you believe, and then it will happen."

But Babu continues, "You will find water only if it is in your *kismat* (fate). If it is not, then you will not find anything…You have been living in this village for a year now, haven't you? You have seen everything here. You know this: the household with the most land, 40-50 bighas, has no sons, but the household with no land has healthy children. The man with lots of land has no water, the man with 1 bigha has enough water for everything. And it's not just in this village but everywhere. See, it is all about fate."

Babu was proud that he had found ample water, and that his wells did not run dry (yet) – not even in the hot summer months. He extolled the freedom this water brought him and his family. Prior to the well, he engaged in a series of odd jobs – at one point, he sold sandalwood

until he was caught by the police (since this is illegal); he used to make sugarcane juice at a street stall but then sugarcane cultivation declined. So now he has taken to growing vegetables, which water makes possible. Poignantly, he insists to me, "At least with the hole [well], we can be independent. We don't have to go to someone else's field to work, at least my wife can work in our own field. At least when we want to rest, we can."

Babu's story was one I encountered several times during fieldwork – almost exclusively among low-caste families. Farmers from the Bagri and Balai castes (the formerly 'untouchable' and officially classified Scheduled Castes residing in my field village) in particular narrated the shift in their economic and social position over time in relation to water. While they recounted various elements tied to upward mobility – from the expansion of the rural service sector to state schemes – water always figured prominently in these accounts. This chapter examines the phenomenon of groundwater extraction – largely through tube-wells, now ubiquitous across the Indian countryside – and the ways in which the materiality and meanings of water shape understandings of and responses to uncertainty. Drilling into the ground in search of water is an incredibly risky enterprise – not only is there uncertainty regarding the location of subsurface aquifers, but doing so is also expensive and often financed by debt. If you are able to find plentiful water, the well is a good investment. If you do not, it is quite literally money sunk into the ground. Indeed, tube-well construction is often cited as one of the key expenditures driving rural indebtedness across India. Yet, as with many other forms of debt, it is viewed by farmers as a necessary path out of poverty, a prerequisite to upward social mobility. Indeed, for farmers in Pipliya too, the tubewell was a technology of possibility, opening up the potential for entry into commercial cultivation and out of dependence on upper-caste landlords. As A.R. Vasavi writes,

"To own a tube well or have one on your land is a sign of upward mobility and demonstrates that you have stepped out of and away from subsistence agriculture" (2020: 436).

At the same time, as the largest consumer of groundwater in the world (over a quarter of the global total), India is also facing serious issues of groundwater depletion even as more wells are dug deeper into the ground. Mining the subsurface for water continues at a pace greater than the potential recharge of aquifers, leading to many wells going dry. This also deepens existing inequalities as those with greater access to land and capital can drill more and deeper wells and thereby, gain greater access to groundwater to the detriment of small and landless farmers. The relentless quest for groundwater has also led to a shift in cropping patterns in favor of more water-intensive crops. The tube-well, therefore, has produced a range of deleterious environmental and social consequences.

Figure 23: A dug-well (left) and a tube-well (right)

Moreover, there are ecological and economic limits to accumulation of and through groundwater.[77] The topography of Malwa (including the village of Pipliya) consists of undulating hills and valleys, and it is the upper-castes who generally own much of the most fertile land in the valleys while the lower-caste groups own land in the rocky, hilly areas. This unevenness in access to land has implications for access to water as well since groundwater availability is likely far less in the hilly regions. This ecological limitation further exacerbates the uncertainty of locating groundwater for lower-caste farmers. Moreover, even if one does find water, the decline in groundwater levels means that deepening of wells is essential – another investment burden that wealthier and upper-caste farmers can more easily bear.

Water scarcity is also an issue of grave concern. Pipliya is known to be a particularly water-poor village.[78] In the summer of 2019, the public water line went dry and the families in my neighborhood would collect water from a single private tube-well which the owner would run for about twenty minutes in the morning and evening. The government had installed a pipeline to each house but water only rarely flowed from it (all through the year) – so much so that the tap was left open permanently. Men would often fill barrels of water from tube-wells located in their fields which were still running and then carry the water back to their homes on motorbikes. In other villages, I heard that farmers with plentiful water would fill water tankers and then sell water to neighboring villages or even co-residents in the same village. In Pipliya, hwoever, it was generally considered immoral to sell water for household use – although it was not uncommon to sell water to neighbors for irrigation purposes.

[77] I am grateful to Prof. Amita Baviskar for emphasizing this point to me.
[78] As with the rain, the limited supply of groundwater (which in turn stymied agricultural development) was also explained in moral terms. Water was the lens through which caste-inflected moral ideals were articulated. I was told by a man from a neighboring village, "They don't have any water there. How could they – when they are all opening the [liquor] bottle after dark?"

I travelled to conduct fieldwork armed with these distressing tales of scarcity, debt and depletion. Across Malwa, however, what I heard were stories of possibility. Water, as a key factor of agricultural production, is essential to cultivation. Without water, farmers are restricted to cultivation of one crop (soybean) in the monsoon season. With access to water, however, the possibilities for cultivation grow – wheat and gram in the winter alongside a range of green vegetables throughout the year. As farmers stated to me, you can find land anywhere, there's lots of people willing to lease or rent out land. But water! If you find water, you can do anything. While South Asian societies have long tapped into groundwater through various means, tube-well technology marks an important shift since they are far cheaper and quicker to construct than traditional dug-wells, acting as a (potentially) equalizing and income-generating force (Shah 2009). Of course, the possibilities they offer are premised on environmental and economic depletions, and are ultimately unsustainable in the long-term. In the absence of public irrigation systems (there are no dams or canals bringing water to this village, although these exist in neighboring villages), farmers are entirely dependent on the private tube-well for their water needs.

For many farmers, however, the process of locating and accessing water is an arduous, expensive and precarious one. Like Babu, the spatial uncertainty of groundwater and the question of where to drill your well makes this a speculative venture. In this chapter, I show how farmers grapple with the uncertainties of subsurface water – invisible and largely unknown – through varied practices of water divination. Moreover, I show that farmers interpret the successful location of water in terms of discourses of fate and fortune. I argue that these discourses work as explanations for uncertainty as well as subtle critiques of the violent hierarchies of caste. As I soon discovered, farmers interpreted the scarcity of water not as a

matter of lack but as a matter of luck. Akin to Gisa Weszkalnys' account of the discovery of 'first oil', finding water too is a "protracted and precarious achievement based on a speculative epistemology" (2015: 612).

Building from the narratives and experiences of Dalit (low caste) farming households specifically, I explore how groundwater extraction is tied to ongoing trajectories and emerging aspirations for a better future. This is clear is Babu's experience. Although his route to finding water was hardly easy (fourteen holes!), he interpreted the eventual result – of finding plentiful water – as an index of his good fate. If water was indeed in his fate, it was not without some prodding. Moreover, Babu explicitly compared this fate with that of those at the 'top' of the caste hierarchy in the village, particularly Rajputs (warrior castes and former landlords). The reference he made to 'those with no sons' is a reference to the largest landholding family in the village, a Rajput family, whose only son died in an accident some years ago. Indeed, the framing of his narrative – and the place of water in it – suggests that the centering of the perspectives of marginal, lower-caste farmers on the tube-well revolution offers unique insights into the perils and possibilities of groundwater extraction.

4.1 Situating the Tubewell: A Subterranean History

While dams and canals have dominated literature on water in colonial and postcolonial India, the tube-well – a mundane, unmonumental and uninspiring technology – has been less explored. Tube-wells draw water from underground aquifers of varying depths and recharge capacity. They are based on oil well drilling technology and submersible electric pumps. In the Malwa region, the depth of the wells can range from 50 feet to 1000 feet. Anthony Acciavatti writes that "The tubewell is an inversion of the canal – the thinnest, most inconspicuous structure

to mark a site", writing a few sentences later that it "is the antithesis of a monument" (2017: 207). Despite its relative invisibility (compared to big dams), many scholars argue that it is the true protagonist of India's Green Revolution story. Historian Kapil Subramanian (2015) writes that it is not high-yielding varieties of seeds that drove the rise in food production in the 1960s and 70s – rather, it was the spread of irrigation facilities through private tube-wells that allowed for this transformation. While the story of high-yielding varieties is well known, these seeds would hardly bear fruit without regular irrigation which largely came from these private wells. While the Nehruvian period of the 1950s was marked by an emphasis on big dams and public irrigation systems, from the 1960s onward, there was "an emphasis on the private tube-well, based on a vision of the peasant as a rational profit-maximizing being who was in conflict with public irrigation systems and their equity objectives" (Subramanian 2015: 3). A slew of cheap loans to farmers – funded by the central government and the World Bank – aided this rapid expansion, as did the burgeoning of rural electrification projects. Presently, it is small-scale groundwater irrigation, rather than large-scale surface irrigation systems, that dominates the Indian agrarian landscape, accounting for about two-thirds of irrigation capacity.

Groundwater has always been crucial for social production and reproduction across South Asia. There is a long pre-colonial history of groundwater lifting technologies in the sub-continent (such as the Persian wheel). Tube-wells, however, can be traced back to the colonial period – their rapid expansion is owed to British efforts at stimulating food production during the war years by cheaply tapping into groundwater reserves. Acciavatti writes that Sir William Stampe, an irrigation engineer in British colonial India "reimagined agrarian space in vertical section as opposed to horizontal plan: a decisive victory against the realities of gravity and centralized planning" (Acciavatti 2017: 214). In 1947, Stampe (1947: 97) wrote:

> It is a strange anomaly that whilst men are about to die in scores of thousands from hunger and the health of millions more be ruined by malnutrition, the silent Saraswati (the hidden river of Hindu mythology) flows on through the dark sands, unconscious equally of the administrative boundaries above it, as of racial creeds, political differences and salutes, only hoping, perhaps, as we do, to "surface" with the aid of co-operative energy, and thus see the light of a brighter economic day.

Following Independence, the government set up tube-well stations across north India to experiment with best practices of technology use in order to enhance efficiency and productivity. The most significant extension of this technology occurred in the 1960s with the shift from publicly- to privately-owned tube-wells. While tube-well expansion in colonial India relied on British expertise in groundwater extraction, it was American knowledge through the US government, the Ford Foundation and the World Bank that undergirded these later projects. Indeed, American advisors believed that the successes of tube-well technology in California made it ripe for experimentation on the subcontinent as well. As international donors pushed for input-intensive high-yielding agriculture (or Green Revolution technologies), they simultaneously advocated against large public irrigation systems in favor of decentralized private ones in the name of efficiency, intensive input application and profit-maximization for the individual farmer. Often, these policies were referring to the rich landowning farmer who could actually afford these large investments. Inequality, Subramanian notes, was not a side-effect of agricultural policies but rather built into the very foundation of particular production technologies.

The tube-well therefore is what historian David Arnold (2013) calls "an everyday technology" that (alongside the bicycle, sewing machines and typewriters) shapes social life in India in profound but often invisible ways. While it might be tempting to read these "small machines" as technologies of subversion and opposition, they might also be viewed as new

technologies of state power. While the tubewell was promoted by the Indian government, it technically insulates the farmer from the oversight of the water bureaucracy. Acciavatti writes that "[t]he tubewell is the great liberator of the topographic surface and symbol of economic liberalization. It is a fantastic technology, precisely because of its differences to a canal: it can be sunk almost anywhere, it is portable, it provides water on demand, it is managed independently, and it is not a monument. It is, in fact, the antithesis of a monument" (2017: 207). Government-subsidized loans intersected with rural electrification projects to democratize access to irrigation - even small and marginal farmers gradually began to drill their own wells (or buy water through village groundwater markets).

The tube-well (known generally as 'hole') was ubiquitous during my fieldwork. Through November and December of 2018, following a below average monsoon in the area, the buzz of the drilling machine ran through the night, and I would ask my host family – with considerable irritation – who was drilling a well now, and more importantly, did they find any water? The grating whir of the machine continued through the winter as farmers tried to find enough water for their wheat crop. Well drilling is highest in the dry years. But every year trucks with drilling machines drive into Malwa between October and January from the southern Indian state of Tamil Nadu (there are very few locally owned drilling machines – though people joked that it was probably the best business in these parched times). Witnessing the proliferation of tube-wells – most with little success – resonated with what I had read about groundwater extraction – drying aquifers, debt burdens, even young children falling in to unmarked and uncovered holes. At an NGO I visited early on in this process, I was told tragi-comic stories of 'tubewell wars', narratives that were repeated to me over and over throughout my research. One NGO worker narrated stories of farmers who drilled deep into the ground, and when that bore no results, they

attached horizontal pipes to the main tube in order to extract water in a sideways direction – thus causing disputes between neighbors (Barnes 2012). While much of this was true, I also uncovered the possibilities that resided in this inscrutable water that lay below the surface. Like finding water itself, it took some digging.

4.2 Sensing the Underground

As a fugitive (non-captive or flowing) and invisible (underground) resource, groundwater is little understood in many parts of India and the world (Kulkarni and Vijay Shankar 2014). Studying groundwater is, therefore, a methodological challenge – it is invisible to the researcher and impossible to really see or observe. It was also invisible to my farmer friends. Indeed, the very materiality of groundwater made it necessary to study it through other means – not through the water itself which I could not see or follow in the way one could with water in a river, lake or canal. The water from underground aquifers would only reach the surface if there was enough to warrant putting in a motor pump to draw it to the surface. In my conversations with farmers, water existed as much in its material form, flowing through pumps into fields, as it did in their imagination (see also Barnes 2012 on pumps as a technology of possibility in desert reclamation). Within this context, "the underground becomes an infrastructural frontier, the location where hope for life can be found against its aboveground fragility" (Ballestero 2019: 28). Not surprisingly then, the materiality of the underground generates debates that are "heavily infused with discursive social imaginaries" (de Rijke et al. 2016: 699).

Aquifers are incredibly complex geological formations. Despite conventional thinking about groundwater, subsurface aquifers are not underground tanks. Rather, as Andrea Ballestero (2019) writes, their form is "playful and irregular" much like sponges. Indeed, as dynamic

structures, they raise many different questions about flow and movement, leakage and recharge. In my field site, the dominant understanding of aquifers was something akin to an underground river system. My interlocutors compared the act of drilling for water underneath the ground to the act of drawing blood from a vein – the doctor has to find the right vein to draw blood; there is hardly any point in jabbing endlessly if there is no vein. The use of this analogy draws in part from the mythical Saraswati river that holds a prominent place in the Hindu religious imagination and which some believe to be still flowing under the ground. In any case, the invisibility of underground water created a great deal of uncertainty – Where is the water? How much is there? At what depth? The geological is rife with uncertainty – from oil exploration to the mapping of seismic faultlines. This very uncertainty also creates a sense of possibility. That is, groundwater was invisible to nearly everyone in the village – across caste, class and gender. In this sense, it was an equalizing force – nobody knew where it was and therefore, in theory, anyone could find water underneath their land (though, as noted earlier, the undulating terrain itself suggests higher probabilities for certain parts of the village).

As Kinchy et al. (2018) note, the underground does not exist a priori but rather comes into being through technoscientific, social and political processes. Certainly, groundwater – invisible to the naked eye – came into view through the imaginaries and practices of farmers as they attempt to predict, detect and extract it. The uncertainty of water's location, quality and quantity was not simply something to be managed or avoided, but was interpreted in socially specific ways. Indeed, its "invisibility to the naked eye makes stark how embedded aquifers are in the specific political and scientific histories through which they become recognizable" (Ballestero 2019: 21). The invisibility of the subsurface creates a particular kind of spatial and material uncertainty where the unknowns are plenty and the risks of failure high. This

uncertainty also emerges as possibility – these unknowns have the potential to – and, more significantly, are *interpreted as* – subverting deeply entrenched social hierarchies of caste and class. Material resources – in this case, water – are not just transformed into economic assets but are imagined to reconfigure social hierarchies and social possibilities.

While groundwater mapping and computer modelling have allowed for deeper insight into subsurface water systems, these are not universal nor complete. It might seem that the limited knowledge of the underground in places such as Malwa is due to the absence of scientific data and mapping technologies or the endurance of traditional ('unscientific') methods of locating water. But this is only partially true. Indeed, hydrogeologists across India are engaged in mapping and modelling groundwater resources. Yet they had little presence in my field area – I did not once encounter a groundwater engineer or hydrogeologist from the irrigation department in any village nor did I hear of any farmers seeking their services of water detection while drilling a well (although they do offer these services for a small fee). In Malwa, a majority of the expertise is held either by farmers or Hindu water diviners. Local water diviners are the primary groundwater experts, relying on astrological charts, soil samples and field maps in order to locate groundwater and suggest specific points for drilling (see also Birkenholtz 2008). While it might be tempting to ascribe this to the persistence of traditional modes of water divination, it is equally true that farmers generally have little trust in state services (see Birkenholtz 2008). At a deeper level, the uncertainties of the underground have not been fully overcome by modern science either.

As Kinchy et al. (2018) write, the question 'Should we dig here?' is one that resonates across the world in relation to mineral deposits, aquifers, shale formations and more. The question then becomes one of how knowledge and expertise are brought to bear on this critical

question. Adrienne Kroepsch (2018) notes that a more expansive view of the underground – whether through seismic mapping or computer modelling – has not necessarily led to an epistemic consensus about the inner workings of the subsurface. Even computer-based modelling (necessary since only partial measurement is possible through borehole sampling) of groundwater dynamics has failed to achieve a common understanding of what lies beneath. In Colorado, for instance, Kroepsch documents continued disagreements regarding the hydraulic connectivity between surface and subsurface water systems (between, say, a groundwater source and a river). The underground, therefore, continues to be a space of contested knowledge with implications for water access and rights (see also Birkenholtz 2008, de Rijke et al. 2016). Andrea Ballestero documents a similar situation in Costa Rica where a water dispute raised the issue of an inadequate 'conceptualization' of an aquifer. Few details were known about the size, movement and qualities of the aquifer itself. In this case, while it was hoped that scientific tools could render the underground knowable, "aquifers can be particularly uncooperative when humans try to clearly delineate them" (2019: 21). This is equally true of petroleum exploration which is also based on "knowledge that is necessarily incomplete, based on uncertain and partially obscured evidence" (Weszkalnys 2015: 613).

These unknowns remain precisely because groundwater systems are not simply invisible but highly heterogeneous and the water itself slow moving. Even in places like California, for instance, which depend heavily on groundwater for agricultural enterprises, hydrogeological data and modelling continue to be uncertain and contested as well as inscrutable to laypeople (Fairbairn et al. 2020). This means that, like several other aspects of agriculture, groundwater extraction too is a site rife with speculation – by scientists and modelers, water diviners and groundwater engineers, priests and farmers. In the words of Kinchy et al (2018: 31), "while

speculation is inherent to scientific practice, it is especially central to any efforts to work underground, given that it cannot be directly visualized, touched, or manipulated outside of excavation or sampling."

The question of how people decided where exactly to drill into the ground was one that fascinated me. In part, it was my naïve shock at the practice of drilling wells without any clarity about a successful outcome that drove this line of questioning. It appeared alarming to me that so many farmers were investing tens of thousands of rupees into drilling wells that might or might not provide them with any water. Didn't they want to be sure? How did they decide where to dig? Weren't they afraid of going into unnecessary debt? These questions stemmed from my own desire for, and indeed belief, in the possibility and necessity of certainty. My questions were indulged, but generally viewed as foolish. Some were reticent, thinking I might question their methods as superstitious and unscientific, while others deployed these conversations as an opportunity to flaunt their good fortune. Still others were exasperated by my inability to wrap my head around one of the most fundamental uncertainties of agrarian life.

Their answers made me curious about different modes of detecting water (there are many) and whether they worked (sometimes they did, sometimes they didn't). With all forms of detection, however, the "inaccessibility of the aquifer to direct sensual perception – to sight, touch and hearing - demands another way of seeing" (Ballestero 2019: 25). There was no single method of detecting water though – there were several, and most farmers settled on one or a combination of several based on a range of (mostly practical) considerations. The most common method, which I witnessed several times, was the dowsing method (common to water diviners or water witches across the world), wherein one walks slowly with an object (this could be a coconut, a forked stick, pendulums, coat hangers, a pair of iron rods) in one or both hands. When

the object moves or tilts, this is believed to index the presence of water below the surface. The *nariyal* (coconut) method was deployed most commonly by both farmers themselves or by priests and water diviners (simply called *pani deknewala*, the one who sees water). The dowsing method is based on the science of gravitational force, and while many agree that it has a scientific basis, hydrogeologists also point out that it is highly likely to find *some* water under the surface almost everywhere and therefore, likely to be successful (though how much water will be found is a more difficult question to answer). In some cases, farmers consulted a *pag-pariya*, person who is breech-born and therefore, able to detect wealth under the ground akin to water diviners.

There were several other methods too – some described being advised on where to dig by spirits or having their decisions affirmed by them; others recollected taking samples of mud from their field or maps of their plots to a priest or astrologer who decided which soil sample or location was most likely to be successful. And yet, even as farmers recited a list of possible methods, all of them insisted that none of these would be effective if it wasn't in your fate. Indeed, it was your destiny that determined whether you would find water on your land, but this was aided by faith (specifically religious belief but also belief in the potentiality of water itself) as well as hard work and diligence. It is to the subject of fate, faith and destiny that I turn next.

4.3 Hydrology is Destiny: On the Necessity of Fate

I met Rajesh Patidar, a wealthy farmer, while on a long three-hour bus ride to the city of Indore, where he was travelling to meet his wife and college-going children, all of whom lived in the city to get a better education. Well-dressed and clearly middle-class, I soon learned that Rajesh was a large landlord (owning 100 bighas of land) but he did not have much interest in

farming. And in any case, as he told me, he did not have enough water. He recounted these water woes to me in great detail. By his own admission, he had wasted a lot of money trying to find water, digging one or two wells every single year. Some of these wells yielded water, some did not. Rajesh never bored too deep into the ground (only going about 200 feet) but even so, he spends at least Rs. 20,000 ($275) every year on these wells. He had even built an artificial lake on his land at a cost of Rs. 6 lakhs (about $8200) which he filled with water from his wells. I ask my standard question: *how do you decide where to drill?* He laughed. "There are so many ways and I have tried everything – you can look at the movement of ants, you can use a stick or what they call the dowsing system, you can ask a *jyotish* (astrologer) too. That is *andh vishwas* (blind faith) in my opinion, but I have tried it anyway". At this point, he looked ashamed but continued. "I have even tried with the scientific way – we got a water detector machine to see what is there underground. It can tell you if there is water, but it can't tell you how much water you will find."

Then he describes his visit to an astrologer. "There are only a few of them who have such deep knowledge and training to be able to tell you where you can find water. You have to make a *naksha* (map) of your field with the *lambai* (length) and *chudai* (breadth), and show it to him, and he will be able to tell you where you can find water." Rajesh even visited a priest – but in his self-described greed, when he located some water, he rushed to install a motor and pipe. Alas, in just a few days, the water dried up. "So that failed too!" With more circumspection, Rajesh then solemnly summed up what he had learned from these failures. "See, the priest can tell you where the water is but that prediction has to meet your *kismat* (fate). He mimics drawing two perpendicular lines that meet on the leather seat in front of us. If it is not in your *kismat*, then it will not happen." [79]

[79] Interestingly, the words used by these primarily Hindu (and often Hindu nationalist) farmers were kismat and naseeb, both Arabic words drawn from Islamic theology. None used the Sanskrit terms for fate, other than

The uncertainty of detecting groundwater meant that farmers often tried every method available to them, whether or not they believed in its efficacy. But Rajesh's narrative points less at quaint rituals and traditional beliefs, and more to the practical impetus that drives people. After all, none seemed to be foolproof. Even science could fail. There were certainly many farmers I met who did truly believe in forms of divination as a means of detecting water, but there were many others, like Rajesh, who simply tried every method they could access and afford.

The ultimate arbiter, according to many, was one's good fate and fortune. No method could work without it. Indeed, Rajesh also wondered if his greed itself – in trying everything without truly believing in its efficacy – was the cause of his poor luck in finding water. As many farmers repeated to me, 'You can drill as many wells as you want to. If it is not in your fate, you will never find it (water).' For farmers, destiny shapes hydrology in that fate determines one's ability to locate water even as hydrology is destiny in that access to water can potentially reshape one's life trajectory.

Nearly every coincidence and happenstance is explained in this idiom of fate – from an illness to a poor yield, from a good marriage to a fortuitous meeting. When I arrived in someone's field just as they were making afternoon tea, they commented that hot tea was in my *kismat*! But it was also deployed to explain structural inequalities. For instance, people routinely commented that it was my good fate to be born into such privilege, that I was able to get an education and live an independent life with little want. Given this ubiquitous and even offhand use in everyday conversation, I do not wish to read too much into the invocation of fate as explanation – it is so common that it would be inaccurate to attribute too much meaning to this

occasionally using the term 'bhagya', also meaning fate. Fate, or kismet, is a term that is liberally used in everyday talk.

framing of the uncertainties (and inequalities) of the world.[80] After some time living in the village, I too began to speak in this idiom in an unthinking manner, even though I did not believe much in it. At the same time, given its pervasiveness, the vocabulary of fate is also impossible to ignore.[81]

In part, this belief is tied to the doctrine of *karma* in the Hindu faith which maintains that good deeds ensure a good fate. Coupled with the belief in reincarnation, presumably, one's low birth in this life is due to bad deeds committed in one's previous life. What was striking, however, was the way that narratives of fate were deployed by farmers who were at the bottom of the caste and class hierarchy. While the discourse of fate was deployed by all my interlocutors across caste, class and gender, it was lower-caste farmers – like Babu introduced at the beginning of the chapter – who emphasized their good fate most prominently. This is, of course, not to say that poor, lower-caste farmers had greater access to water (this is not the case at all) or that all of them had access to some water (many did not). This emphasis on fate, and explicit comparison with the fate of upper-castes and landed elites, offers insights into the ways that the uncertainties of the subsurface are drawn into enduring social fissures and contestations, albeit only subtly. The uncertainties of the underground became an avenue for the articulation of subtle modes of critique of caste hierarchies. It is to the violent historical relationship between caste and water that I turn to next.

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[80] Indeed, some farmers joked that when something good happens, people are quick to attribute it to their own hard work and intelligence, but then when something bad occurs, they are quick to blame fate. However, this wasn't quite true, since both unfortunate and fortunate occurrences were explained through the idiom of kismet and naseeb.

[81] It isn't surprising that discourse of luck have been described as commonplace among others who engage with the underground such as artisanal diamond miners. Since diamonds are hidden and unevenly spread under the surface, the vocabulary of luck is often used to explain why you might dig many pits and find nothing, but your neighbor might dig only one pit and find a large diamond quite quickly (D'Angelo 2015). So too with water. That subsurface water is not evenly distributed and aquifers as geological formations are complex amalgamations of rock and water makes it quite possible that neighbors have very different experiences of accessing water through drilled wells.

4.4 The Caste of Water: Contested Rights and Resources

The social order of water in South Asia is shaped heavily by caste. Indeed, caste has been at the forefront of struggles over natural resources, although is rarely discussed in these terms. Dr. B.R. Ambedkar's 1927 Mahad Satyagraha was launched to demand Dalit use of a public water tank and for water rights more broadly. Water is central to distinctions of purity-pollution and sacred-profane, shaping the marginalization of Dalit communities for millennia. The divide between those castes from which you can accept drinking water and those castes from which you cannot (from the upper-caste standpoint) continues to be sharp. While environmentalists in India have often lauded traditional water management systems and spiritual connections to water in the Hindu faith, scholar Mukul Sharma (2017) rightly argues that most of these accounts fail to account for Dalit experiences of water – experiences marked by inequality, oppression and humiliation.

Indeed, scholars often lament the loss of reverence for water across the agrarian landscape, noting that reconfiguration of pre-capitalist relations with water. For instance, A.R. Vasavi writes, "water, which has long been a key source and symbol of sacrality, is at the center of many Hindu rituals. Water from wells and open sources is treated with reverence and considered to be akin to water from the sacred Ganges River. But water pumped out of tube wells receives no such sacred status and is treated like an inexhaustible commodity" (2020: 437). It is not my intention to argue for the commodification of water or to deny the harm caused by the proliferation of tube-wells, but these accounts fail to adequately consider the relationship of low-caste communities to water or more basically, to account for how the sacrality of water within Hinduism is premised on the exclusion of those considered 'profane' or 'impure', evidenced in the segregation of public wells and even the demarcation of river banks along caste

lines.

The significance of caste in debates around water extraction has been noted by other researchers as well. In the neighboring state of Rajasthan, Trevor Birkenholtz (2008) found that upper-caste Hindu farmers were in favor of licensing and quotas as a way for the state to regulate and thereby, conserve groundwater. He reads this as a way for upper-caste farmers to retain their control over groundwater resources and prevent the further expansion of irrigation facilities among poor, lower-caste farmers. These poorer farmers, on the other hand, believed that licensing would only mean larger bribes to water bureaucrats, thereby further restricting water access to richer farmers. In general, since it is upper-caste groups who control a majority of the land, they also own more wells and have far greater access to water. Licensing and quotas would only exacerbate these existing inequalities. This violent history of Dalit relationships with water (particularly, but not exclusively, drinking water) makes the promise of groundwater all the more interesting and important to consider. That is, if water has always been fundamental to ideologies of im/purity and material practices of subjugation, what does the (partial) democratization of access mean to low-caste farmers, both materially and symbolically?

The coming of the tube-well to Pipliya testifies to its emancipatory *potential*. When I first inquired into who had drilled the first tube-well in the village, I had expected to hear the name of wealthy Rajput landlords. I was quite surprised to hear that it was actually four Dalit households, including my host family.[82] The story, as told to me by various people, went something like this: there was a very kind Father (a Catholic priest, referred to only as Fatherji, but who I later learned was named Father George) who had arrived in the area in the 1980s. The church he was

[82] Some upper caste families I spoke with, however, insisted that it was the largest Rajput landholder who had drilled the first well. Prior to this, it was primarily Rajputs and Sutar (carpenter caste) who owned dug wells and were able to grow small quantities of winter wheat.

affiliated with, the Ujjain diocese of the Syro-Malabar Catholic Church, was carrying out philanthropic work in the area, including setting up a school (which still exists). Everyone I spoke with remembered the Father as a kind and gentle man, eager to help the most marginalized villagers. He came to Pipliya through one of its residents, a Dalit man who had converted to Christianity. Here, he asked some of the poorest households what they needed and what would improve their lives and allow them to become self-sufficient. At the time, many of these households – although they owned small parcels of land – were working for upper-caste landlords as *bandhva mazdoor* (bonded labor) or grazing cattle in order to earn small cash incomes or to pay off debts to landlords. Without water, they could only grow jowar (sorghum) which was enough grain for their household consumption but afforded little else. Fatherji believed that irrigation could allow them to escape this life of crushing poverty and dependence on upper-caste landlords.

With funding from a German Catholic social organization named after German priest Adolph Kolping, Fatherji chose four of the poorest Dalit households in the village and drilled tube-wells for them free of cost.[83] All of these tube-wells are still in use today, several decades later. Although Father George had retired from the church by the time of my research, I spoke to his colleague, another priest, who remained at the diocese in the town of Ujjain. He recounted that the intention of the priest was to make Dalit farmers self-sufficient, independent and autonomous producers. That is, rather than run charitable programs which perpetuate 'dependence' (on the church and on charity more broadly), the goal was to provide farmers with an inter-generational infrastructure of re/production that would enable cultivation across the

[83] Missionary involvement in tubewell promotion has a long history, including in central-west India. Trevor Birkenholtz reports of the work of the Scottish Mission in India drilling as many as 500,000 tube-wells in Rajputana by 1905.

seasons. The ethos of the Indian state, international donors and Christian missionaries thus came together in the tube-well as a technology of individual self-sufficiency and rational productivity.

While I heard this story early on in fieldwork and was intrigued by its import, it was only during a conversation with Kantibai, mother of three and grandmother of one, that I understood the significance of groundwater to Dalit smallholders. Since I became close friends with her younger son, Viru, I would often spend time at her home, chatting or helping out as she carried on with her household tasks. I knew Viru through my neighbors and had been accompanying him and his mother to the weekly market, where they sold cauliflower from their tiny 1 bigha farm plot. Viru's father owned a small pickup truck which he used to transport produce and grain for farmers to the nearby markets. Viru himself had recently found work as a painter at an agricultural equipment shop, and his mother and sister frequently did daily wage farm work aside from tending to their own field. One afternoon, I was sitting in her small *pucca* (concrete) house, a square plot with four small rooms accommodating their seven-member family. I was asking Kantibai about her life, trying to get at a deeper history of how they came to grow vegetables on their plot. She listed out all of the crops they planted through the year: cauliflower, fenugreek, wheat, eggplant.

I asked when she began to grow these crops. After they drilled a well, came her reply. What about before that? I asked. With an indignant brush of the hand, Kantibai responded: "Don't ask about the time before the tube-well!" Before the tube-well – or "*hole ke pehle*" – was a definitive marker of time, a rupture, for Kantibai as well as many others. When I probed what she and her husband used to do before that (the well is barely two decades old), she told me about the various kinds of work they had to do before. Her husband worked as a *bandhva mazdoor* (bonded laborer) for a landowning family in the village. Then he learned how to drive a

tractor, finally earning enough money to buy his own pickup truck and set up a small transport business. When they were drilled a tube-well, they began to cultivate vegetables, selling them at the weekly markets across the region – a business practice that gave them '*taaja paisa'* (fresh money) every week (unlike long-duration crops which can be harvested only after several months). The tube-well did not save Kantibai and her family from a life of difficult labor: she and her daughter worked as agricultural labor, one son as daily wage worker, another as caretaker in a wealthy farmer's fields. And yet, it offered them a level of autonomy and independence hitherto denied to them.

Figure 24: Kantibai selling fenugreek and cauliflower at the weekly town market

The socially transformative potential of water was further brought to light for me, ironically, in the aftermath of a failed drilling. Gopal is a Dalit man with a marginal landholding. Soon after I moved to the village, I learned that Gopal and his older brother were looking to drill

a new well – offering me the opportunity to witness my first tube-well construction. This was their second attempt in that same year, but they were eager to try again in the hope that water might allow them to at least grow some winter wheat (and possibly even onions) on one of their fields located at a high elevation area on the village periphery. Their efforts did not bear adequate fruit (as I will show later in the chapter).

Gopal's multiple failed attempts to locate water on his land soon became a part of village conversation. Since drilling was most often carried out in the night, news of who had found how much water was the subject of village exchanges the next morning as women went to the common pump to collect water or headed out to the fields to graze animals. Men discussed this over a game of cards or at the tea stall (both exclusively male activities/spaces). The morning after their drilling came up with little water, I was at the tea stall speaking with some other male farmers. The subject of Gopal's well arose. The tea-stall owner shook his head, partly in pity, partly with reproach. As his customers discussed how the family had not found water (yet again), the stall owner, himself an upper-caste Khati man, noted, "*Unki sthithi bhi nahi hai*. (It is not even their place)." In other words, they did not have the economic resources – and I would argue, the social standing – to make so many attempts. It was not their place to do so. Although the man's comment made practical sense – the family indeed did not have the capital to sink into endless wells – his statement offers a broader social commentary on the striving of poor Dalit farmers – even trying to carve out a better life is not quite their 'place'.

While this story only reflects the history of one village, the larger import of this narrative is not simply who was the first to drill, but rather whose lives did it change (and which hierarchies did it unsettle, even if in small ways). The tube-well certainly revolutionized agriculture across South Asia for better and worse, but its emancipatory possibilities have largely

been ignored. I do not intend to argue that it is water alone that offers the path to upward class mobility. In these accounts, there are other crucial elements to their trajectory – most significantly, paid labor outside the village, taking up jobs as drivers for instance. Nor is it my position that water actually offered up secure material prosperity – these farmers were largely still poor by most standards, even compared to many others in the village. Water often promises prosperity and dignity, even as it often delivers debt and depleted aquifers.

Yet, as Mukul Sharma notes, "Water as an important cultural symbol also provides redemptive possibilities whereby Dalits go beyond the oppressive social fabric and develop their own positive association with a natural resource" (2017: 174). The positive association here is not one associated with an egalitarian or sustainable ecological ethic as one might presume or, indeed, hope. It is the complex outcome of the privatization of water infrastructures, unequal distributions of land and systematic state abandonment. In this context, marginalized farmers view water as one of the few routes to economic prosperity, particularly since most did not have large land parcels from which to eke out a living. Finding ample water meant that they could grow at least two crops every year, and often more. Moreover, they could ensure their food security by growing wheat and enable greater participation in the cash economy through growing vegetables that could be sold in weekly markets. For these farmers, the scarcity narrative is reconfigured as a narrative of possibility, one that allowed for a (small) degree of class mobility within a deeply hierarchical social structure and highly commercialized cash economy.[84]

[84] By arguing that groundwater offers potential for small farmers – often lower-caste farmers – to achieve some degree of social mobility, I do not mean to argue that this simultaneously creates solidarity among marginal farmers or a collective identity vis-à-vis upper-caste and wealthy farmers. While small farmers often framed their fate in contrast with the fate of the dominant castes, these did not, in my experience, lead to collective mobilization or political struggles. Their lives were not solely driven by formal aspirational projects articulated through social movements or political recognition. Instead, their hopes for the future are "tightly woven into the local fabric of social value", from providing for their families to getting their daughters married well to being a good farmer (Piliavsky 2021: xxvi-xxvii).

4.5 Faith and Fortune: Supportive Spirits and Divinatory Dreams

Between irrigating his wheat and grazing his goats, Ganesh finds some time to chat. We sit cross-legged at the tree-lined edge of a field he has only recently purchased and where he recently drilled a hole, finding – he recalled with pride – a good amount of water. At an earlier meeting, he informed me of his plans to carry this water by pipe to his inherited fields, which were higher up in the hilly area. At the time, Ganesh regaled me with stories of spirit possession and divinatory dreams. With his flair for storytelling and penchant for the paranormal, he began by telling me about a well-regarded woman who became possessed by a goddess (*devi aati hai*) and made predictions to crowds of people every week. He boasted that he had visited her five times already, noting that "*mann se manta hu*" (he believed in it fully).

Offhandedly, I asked whether others in his family believed in the *devi* as well. Ganesh shook his head. "My father did not have the capacity to do so. He was a laborer who worked in the fields of the Thakurs [Rajputs] of the village. He was a *mahinadar* (bonded servant), earning a mere nine rupees per month. He owned some land but it was *sookhi zameen* (dry land) up on the hill." On that land, his father had drilled two wells but there was no water in either. Gradually, Ganesh was able to improve his lot – he worked as a driver for many years, and then he also got involved in politics with the right-wing Hindu nationalist Bharatiya Janata Party (BJP). In his view, he became wise to the world and more forward-thinking, rising up with god's blessings. Owing to this, he was able to buy the land and waters where we are seated, land that he is quite familiar with – not as an owner but as a worker. It was these same lands, he tells me, on which his father had once worked at a time when it belonged to a Rajput family (who had since sold the land several times over and which was now in Ganesh's name).

All of his life's fortunes, he insisted, were owed to the spirit (*atma*) of a dead ancestor of the same Thakur family – a young boy who died right here in these fields and who continued to roam this space. He would sometimes take the physical form of a ghostly creature, at other times, he would take the human form of people living in the area. If you granted him his desires, he would return the favor to you – granting what you request of him. This is how Ganesh had found water. He recounted the sequence of events to me thus: Ganesh had first called a water diviner to the field. The diviner used a coconut to detect a spot where water could be found. But Ganesh wanted to confirm this with the spirit. So the next day, he asked the spirit for a sign. He explained, "You can ask him a question. Like, should I drill at this spot? And he will give you a sign of affirmation if you should. If you should not, then there will be no sign. He knows that I believe in him, that is why he always helps me…Even when I knew where to drill and was sure of its success, I did not have the money for it. So again I had to ask the spirit for help." Now, the spirit appeared to him in a dream and told him to put in a particular number into the lottery run in the nearby town. Ganesh put in the number first thing the next morning, and by the evening, he came home with enough money for the well.

Ganesh interspersed this account with commentary on his Rajput neighbors – once landlords, chieftains and his employers. Such was Ganesh's faith in this spirit ancestor that he was building a shrine to him – unlike the spirit's own living successors (Rajputs) who had not bothered to do so. When I asked why they had not done so, he shrugged: "Who knows why? They have truly fallen from what they used to be. Once they owned the entire village, and now they are just left with a few bighas of land." As the landlords accumulated debt, they sold their land. Eventually, it reached Ganesh's hands. Once a servant, now owner of their land (even if only a small parcel) and even at one point in the season, selling his newfound water to them,

Ganesh's juxtaposition is telling. While his fortunes have risen (if only marginally), that of his former masters have sunk. While there are many reasons for these shifts – worldly and other-worldly – he speaks with particular pride of the firmness of his spiritual beliefs as crucial to his successes. Much of his upward mobility is owed to his hard work and enterprise, but it is equally the product of his good fortune – fortune bestowed on him by this spirit.

Figure 25: A makeshift shrine set up by Ganesh in honor of the spirit

Ganesh's explanation of his successes is somewhat different from the one offered by Babu at the beginning of this chapter. Ganesh attributed his good fortune to his deep faith and religiosity, and the trust he had built with this ancestral spirit who roams the village fields. Babu too spoke of the strength of belief in being able to correctly detect water, but emphasized that his success was a marker of his good fate. Indeed, nearly everyone I met in the village attributed both their success and failure in finding water to their fate. But as noted earlier, fate is an explanation that is invoked across a variety of situations - from the significant to the mundane.

So too with the subsurface. As Rajesh and many others outlined, you can try all the methods of detecting water under the sun but really, it has to be in your fate. If it is not written, then it simply will not happen.

4.6 Agents of Risk

The immense risks of drilling a well lie predominantly, but not exclusively, on the farmers' shoulders. Risk is (unevenly) distributed across a number of actors through whom groundwater extraction occurs – from the drilling machine operators to the water detectors themselves. In this section, I focus on the ways that specific intermediaries within this water economy take on risk with its attendant possibilities of both profit and loss. While their situation is in no way comparable to the enormous uncertainties faced by farmers, their endeavors point to the ubiquity of risk (and its narration) across the contemporary rural landscape.

The tube-well 'agent' is an important figure in the story of water and risk. The agent is the person who connects farmers with tube-well operators who generally travel up to Malwa following the monsoon season. While there are several local tube-well drilling firms with offices in major towns, it was largely non-local drilling operators at work in my field village. These were largely operators who travelled to the region from the southern Indian state of Tamil Nadu for about eight months every year (November until May). The operator drives his drilling machine to the region, staying at a hotel in a small district town, and responding to calls from these local agents telling him when and where to bring his machine. As Trevor Birkenholtz writes of the western Indian state of Rajasthan, these non-local drilling firms began to arrive during the tube-well boom of the 1990s when extraction was "driven not by easily accessible groundwater but by its absence, which requires farmers to chase the water table downward with new constructions" (2008: 475).

A farmer who wants to drill a well contacts the local agent who will then arrange for the machine to come to their field. To serve as the middle-man, the agent keeps a 10 per cent commission taken from the farmer (or whoever wants to drill the well). For instance, each foot drilled into the earth costs Rs. 100, and of this amount, the agent keeps Rs. 10 and the machine operator keeps Rs. 90. In Pipliya, there were two main tube-well agents, both recent entrants to the business (before which a man from a neighboring village served as the main agent). These agents were young men looking for additional income through operations across several villages in the area. But they understood that this income was not without its own hazards, framing their work in the vocabulary of risk. One of them, Rishabh, a young Rajput man in his early twenties, explained, "*risk rehti hai puri…commission ke hisab se* (You take all the risk on the basis of a commission fee)." The machine operator (usually from outside the state) has no relationship with the farmer – so everything goes through the agent, particularly the payment. If the farmer, for instance, refuses to pay the money, the agent must make the payment himself. The agent also usually pays the operator for his diesel costs (to run the machine) at the start of drilling season, and then pays the rest of the operator's costs at the end of the season. Farmers, however, might sometimes pay the agent much later, particularly if they have good relations with him. The ten per cent commission works, in effect, as a sort of interest payment on a loan taken by the farmer.

The other agent in the village too emphasized the risk involved – "I am responsible for everything", he tells me, including making sure that the farmers pays what he owes. "All the risks are mine. *Police ka risk, gaon ka risk*… (risks of police, risks of the village). The machine operator does not have to deal with any of this. If there are any problems, they call me and I have to deal with the police or angry farmers. *Jitna nuksaan hai, utna fayda bhi* (there is as much benefit as there is loss)." One risk that the agents were not willing to take, however, was the that

of selecting a spot to drill. They did not want to be held responsible for the farmer not finding water (and thus not paying for drilling).

At the peak of the season, usually in January when farmers have planted wheat but are running out of water to irrigate it, each agent might assist in the drilling of three to four wells every day. In January of 2019, following two poor monsoon seasons, the drilling was incessant across the region. But, as one agent told me, the rates of 'success' were quite low – maybe about 20% of the wells are successful. Of course, 'success' is not an objective definition here since each farmers needs from the well might be quite different depending on the soil type, access to other irrigation, crops grown and land area. Although people were finding water at depths of 100-150 feet, there continued to be cases wherein farmers drilled down to 1000 feet below and still could not find any water. Clearly, the issue was not just depth but the structure of the aquifer itself. Yet, these agents were certain that there was more business in this year since it has been two dry years in succession and farmers were desperate for more water. With each passing year, they were helping to drill more and more wells deeper into the ground. Sometimes they keep drilling Although this was not always practical, what choice does a poor farmer have? they asked.

Nearly one year later (December 2019), when I spoke to them again, the situation was somewhat different after the heavy monsoon rain. This time around, there was far less drilling – the monsoon had been abundant and most farmers did not see the need to drill new wells or deepen existing ones. "Business is slow this season ("*season down hai*")", the agent told me, adding, "but it has not stalled". He was sure that work would pick up in a few months when the water levels fall with all the relentless pumping.

As noted earlier, the local groundwater experts are primarily farmers themselves and water diviners. While agents and machine operators simply drilled where you asked them to, it was diviners who detected where the water might be. Many did so for a fee or donation, others might do so for free for a limited number of people. They would be paid regardless of whether water was actually located. There was one exception I encountered – a self-proclaimed 'scientific' water detector who engaged in a particularly high stakes gamble around water exploration on Gopal's field. While everyone insisted his method was distinctive and more reliable, it seemed to be another variation of water dowsing, commonly practiced across the world. The principle of dowsing is similar, whether using iron rods or a coconut. Wearing a bright red cap and holding two L-shaped iron rods (one in each hand) parallel to each other, the diviner walked slowly in a straight line across every inch of the small plot.

Figure 26: A water detector walks through a field with a L-shaped iron rod in each hand

After several hours in the sun, he carved out two potential spots on two different ends of the field and instructed Gopal to mark the spots with chalk. That was where they could find water. Soon after, I learned however that the story did not end there. The water detector made a proposition to Gopal and his brother. It went like this. They had two choices: they could pay him one thousand rupees for his few hours of work and the matter would end there. Alternatively, they could make a high-stakes gamble. Instead of paying him immediately, they could simply call the drilling machine operator and begin drilling a well at the marked spot. If there was no water found there, the detector would pay for the entire operation – the family would lose no money on a useless well. However, if they did find water – meaning that he was right about the spot – not only would they have to pay for the drilling but they would have to pay the detector Rs. 10,000 (instead of the Rs. 1000 paid immediately).

The family thought long and hard about his proposition but ultimately refused the offer, paying him the thousand rupees instead. This seemed like the safest choice. In any case, it wasn't quite clear (at least to me) what finding water really meant – for instance, how much water would count? For how long would it last? Taking the bet would have been a huge gamble – indeed, locating water was a reward in itself, one with considerable economic returns. But they (and I) had heard too many stories of wells that gushed water the first day and then reduced to a trickle the next. The water detector's proposition further compounded an already existing uncertainty of what lay beneath the ground. But perhaps they should have taken the bet. After all, as I noted earlier, Gopal did not find much water. The water diviner was 'wrong'. It was not that there was no water at all, but it was not what they needed or hoped for. Gopal was able to plant a small amount of wheat that winter, but the water that flowed from the well was a slow trickle, meaning that irrigating even the small plot was a long and tedious affair. The limited supply of

water also meant that the wheat yield was only satisfactory, not bountiful. In the meantime, a few days after the well was drilled, Gopal's new motor pump was stolen, leading him to spend his nights in the field through the bitterly cold winter season to ensure no other theft took place.

In highlighting these disparate stories of commission agents, dealers and diviners, this section highlighted the (uneven) distribution of risk across different actors in the groundwater economy, each trying to make a quick profit. As the drilling machines whirred deep into the night, locating enough water became an ever more desperate gamble. Farmers were increasingly throwing caution to the wind, drilling one hole after the other to find more water. Everyone in the village cursed the practice: there's no water under the ground, how will they find any? But everyone tried their luck anyway. At the time, everyone joked, "We should invest in a drilling machine, it's the only profitable business these days!"

4.7 Watery Ties, Fluvial Intimacies

"Water was never in our family's fate", Lata lamented one afternoon when I asked her father, Narenderji, to tell me about their (unsuccessful) attempts at drilling tube-wells. As a lower-caste family with limited land, water was key to their aspirations to upward social mobility but unlike Ganesh and Babu, they did not have much luck finding it. Indeed, this has been the case over three generations. Their family was one of the four households chosen by Father George in the 1980s for the well-drilling project. While the other three households found ample water, the water supply in their tube-well was found wanting, which is why they were not given a free motor pump. Eventually, the family invested in their own pump and managed to extract some water that allowed them to grow wheat.

However, when the two brothers (Narenderji and his older brother) divided up their land into two equal halves, the question of the well arose. After all, how does one divide water? Indeed, wells are usually the most contentious aspects of inheritance disputes. Land can be split into equal parcels, but dividing the water is a more difficult proposition. In this case, the older brother laid claim to the land where the well had been drilled, and therefore, to the well itself and to its water. The tensions between the two brothers – arising in part because they were born to different mothers – came to manifest in the sharing of water. Narenderji did not want to begin a long dispute over the water and therefore, he let the issue go.

Disputes over water-sharing between brothers who own only a single tube-well are quite common, exacerbated when there is limited water available. In another case in the same village, two brothers who were not on good terms continued to share the same tube-well. They created a time-sharing arrangement for irrigating their crops – one brother would use the water for three days, the other brother for the next three days and so on. But this did not mean that disputes were absent. Each brother accused the other of using too much water or of using the water beyond their allotted time period. One brother vowed to drill a new tube-well, one that would be just his own – but until that day, he would have to live with this arrangement.[85]

When I asked him about the division of water, Narenderji sighed. "Fatherji thought that if there was excess water in the wells, then people would share with their neighbors and then everyone could farm more and better. But nobody shared. Everyone kept the water to themselves. Look, even my brother didn't share the water with me."[86]

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[85] In another instance of two warring brothers, I was told that by the wife of one that they had drilled a well and found plentiful water. Then her brother-in-law also tried to drill another well nearby to try to "eat into our [water] vein" but he failed and found nothing.

[86] Yet, elaborate water-sharing arrangements do exist – indeed, it was quite common to enter into agreement on water-sharing for cultivation. While there were some instances of selling (irrigation) water to neighbors, the more common arrangement was of sharing. For instance, if I have some land but no water, and you have less land but

In this section, I trace the intimate life of water through the intersecting stories of a poor Balai (formerly 'untouchable') family – Narenderji, now a great-grandfather, his two sons, one childless and the other with three grown children (two daughters and a son). One daughter was married very young and has two children and a tumultuous marriage, while the son, working as a mechanic apprentice, is yet unmarried and stands to be the sole heir to the family's small landholdings of 2 hectares since his paternal uncle had no children of his own. Relations between the family patriarch and his two sons were tense, in part because his sons accused him of inordinately favoring his two married daughters (their sisters). All of them lived within the same housing compound, although each had their own separate house and kitchen (they did not share the same *chula*, or stove).

"Thinking relationships through water" as Franz Krause and Veronica Strang put it, is crucial because water is "not just the object of social relationships, or merely a natural resource on which claims are made, to which meanings are attached, and over which political conflicts erupt" (2016: 633). Rather, it is "a generative and agentive co-constituent of relationships and meanings in society" (ibid.) Water is not simply an object of extraction or cultural production, but rather the tide upon which social relations are constituted. Although the materiality of subsurface water generates enormous uncertainty (and often increased debt), it is now viewed as vital to the viability of farming as a livelihood itself. Without water, as I noted earlier, one is consigned to cultivating a single monsoon crop. With water, the possibilities are (potentially) endless. As a result, control and access to water can shape intimate relations within and between families – from fraternal ties to marriage proposals. In the stories I narrate below, however, water largely exists on the horizon, as a potentiality rather than an extant reality. It is not materially

plentiful water, we could enter a land-water sharing arrangement wherein I provide the land and you provide the water, and we will divide the harvest equally between us. In some cases, the landowner took two-thirds and the

present (a well has not yet been drilled, a pump has not been installed), but shapes intimate ties through its very absence.

Take for instance, Narenderji's grandson Bhanu. A brusque twenty-year old, Bhanu was still unmarried and his parents were desperate to find him a bride. He worked as an apprentice in a mechanic shop on the highway run by a close family friend and neighbor in the village. He earned a hundred rupees per day (less than two dollars) but his family hoped he would learn the trade and set up a shop of his own. Bhanu was notoriously fussy about a bride – his sisters and aunts told me that he had been introduced to a number of girls but always found some fault with them and refused any offers of marriage. His father made several visits to meet prospective brides while I was doing fieldwork. Sometimes Bhanu would also go along, dressing up smartly in his best shirt and jeans. But inevitably, the search party would return in vain – again, Bhanu did not find the girl suitable to his tastes.

Bhanu's fussiness was the subject of much family talk. Rachna, his paternal aunt, and I discussed his peculiar preferences one morning over hot roasted peanuts. We laughed about his pickiness and made guesses as to what kind of girl he might want. Then Rachna became serious, and shook her head. "See, he can't afford to be so fussy! After all, what does he have to offer a bride?" She opened her palm and began to count on her fingers. "They [his family] only have a mud house. They don't have a motorbike. They have only a few bighas of land. And they don't even have a tube-well! So what can they grow on it? It isn't as if he is from a wealthy family so he can demand the best bride. He should take whatever he gets."

Land is central to marital decisions in rural India. It is perhaps only excusable to be landless if one has a permanent government job with benefits and a guaranteed pension. But even then, land is quite essential (though certainly not mandatory for all castes) as a social safety net.

When Bhanu's father was looking for grooms for his daughter (Bhanu's younger sister), he rejected several boys because, although they had jobs, they did not have land. At least with some land, the logic goes, they will not starve, even if all else fails. Jobs might be lost, businesses can fail – but land offers a form of security, a hedge against starvation and penury. In the current moment of commercial cultivation and aspiration, a tube-well stands alongside land, a motorbike, a concrete house and a toilet as necessary to secure a suitable bride. Access to water is now as crucial as access to land – indeed, land without any water does not yield very much at all.

Bhanu later insisted that he would wait to marry, despite the pressure placed on him by his family. He had big plans for the future – he hoped to set up his own mechanic shop and become more financially secure before he took a bride. While his plans were predicated on non-farm wage employment in the nearby town, agriculture was not entirely absent. He often boasted to me that he would earn enough money to drill another well – and then he would only plant onions (a profitable cash crop). There were many others like him, young men in particular, who insisted that water was the magic ingredient, the singular pathway to prosperity, largely through commercial cultivation of horticultural crops. *Once I get the water situation worked out… Once we drill a hole…* These were orientations to the future shaped by water.

Indeed, contrary to popular assumptions, although finding water is tied up with ideas of fate and predestination, this is not incompatible with practices of aspiration and striving for a better life. That is, although farmers uniformly insisted that both their success and failure in gaining access to water was a matter of fate, this did not preclude material and affective investments in tube-wells. Like Babu, they might even drill and drill and drill until they find water, often going into enormous debt for the same. For every success, there were several

failures. In many fields I visited, there were several closed, dry wells for every well in use. There were very few people who found plentiful water on their first try. After all, if you don't drill, then you can't truly know whether water is in your fate. References to fate signal a life that is already determined but also one whose specific contours are yet unknown. Thus, it did not preclude hard work and toil – though one could not control one's fate or the future, one could certainly do one's best to work toward or improve it. The rest, as they say, is in the hands of god. Striving for water then forms a part of everyday conversation and practice.

One hot summer afternoon, Richa, Lata and I were sprawled out on mats, each of us strategically positioned to receive the cool air and light sprinkles blasting from the water cooler. Richa was visiting with her two children from her husband's village for the summer holidays. Her young son and daughter were busy playing in the village square, giving her some time to rest and chat with her paternal aunt, Lata. As we enjoyed the respite from boisterous children and the blistering sun, Richa discussed her marital woes with her Lata *bua* (father's sister). Her husband was often abusive and unemployed. He worked as a *mistry* (brick layer) but was erratic in his work. Richa contrasted her husband with her brother-in-law, who lived next door to them but was often away. "Look at my brother-in-law! He is barely at home because he works so hard. He sends his children to a private school in the city. He gives his wife some of his earnings every day." Her brother-in-law, I learn, works as a wedding photographer mainly – but does all kinds of other work too. He even bought a white horse to rent out during the wedding season (when grooms often ride horses to the bride's village for the wedding ceremony) and made a huge profit. She continues, "He even drilled a tube-well and has two electric pumps, renting one out".

Their family owned a small plot of land, roughly two bighas for each brother. Richa and her husband plant soybean in the monsoon and then *channa (*gram) in the winter, the latter a crop

which can be cultivated almost entirely without any irrigation. With a tube-well, Richa tells us, much more is possible. Several farmers from her marital village take advantage of their proximity to Ujjain, a temple town and pilgrimage site, and grow small plots of *genda* (marigold, a flower commonly used in Hindu rituals) which they then sell on main road to passerby heading to the temples. "They've made a lot of money. But look at us, without a hole, we can't do anything."

I ask if they have any plans to drill a well.

"For that, you need money!" Lata interjects. "You should have at least Rs. 30,000 in savings that you can invest in the well. You could take a loan for the remaining investment. But it would be foolish to take a loan for the full amount. Then you'll just go into debt."

Richa agrees. "I've been telling him to work more so we can save some money to invest in a well. But he doesn't listen at all! He doesn't learn from his brother. He has neither his [brother's] *lagan* (diligence) nor *laalach* (greed)."

Like Richa, many other farming families across Malwa conceive of the tube-well as a path to upward economic and social mobility. Of course, as the experience of her own paternal family show, there is no certainty of finding water – one might drill endlessly with no success. Yet, one must still try. After all, somewhat paradoxically, you cannot know your fate except in its materialization. In this sense, it is not that farmers see the inability to shore up the capital investment as a marker of fate – one can still work hard, save money and test your fate by drilling a well. That is, the ubiquitous emphasis on fate is not entirely fatalistic. There is a malleability to it in that some things – working hard, saving money, taking loans – are still within your control.

Max Weber demonstrated that a belief in the religious doctrine of predestination did not stall, but rather fuelled, strategic action in the material present. As Paolo Gaibazzi writes of the practices of Gambian hustlers, "invoking 'luck' does not displace toil, endurance and striving" (2015: 229). He continues, "Although 'luck' seemingly strikes randomly, it is not totally unrelated to human effort: fields must still be farmed, diamonds must still be dug out of the 'lucky' pit and visas must still be applied for" (2015: 231). Thus, farmers continue to strive, save and speculative on the subterranean, hoping that their efforts will be matched by their fates.

4.8 Conclusion

In the context of intensifying commercial cultivation and limited public irrigation infrastructures, farmers across Malwa have turned to groundwater aquifers to meet their water needs – to grow wheat, onions, potatoes, garlic and green vegetables. In this chapter, I have explored how the specific materiality of groundwater – as an invisible, subsurface, unpredictable flow – creates new uncertainties for farmers around access to water for irrigation. However, I argue that the unknowability of the underground creates a sense of potentiality, especially for poor and lower-caste farmers with limited access to land.

I outline the various methods farmers detect groundwater – from using methods of dowsing to consulting with priests, astrologers and ancestral spirits (hydrogeologists were, however, rarely consulted here). Moreover, I show that farmers deploy the idiom of fate to make sense of the uncertainties of the underground, explaining both finding water and not finding it in terms of their *kismat.* Moreover, they also emphasized belief and faith as essential to being blessed with water by the gods and divine spirits. While fate was often deployed as an

explanation for groundwater access (among many other things), this was not an understanding fate that produced fatalism and paralysis.

While access to water and discourses of fate, faith and fortune that circulate around it are articulated in relation to individual lives and lands, they are often framed in relation to others who do not have the same fate. That is, in my conversations with lower-caste farmers, I noted a clear distinction between their (good) fate and the (poor) fate of upper-caste and landed farmers as a vindication of their (lower) social standing. Moreover, water shapes social ties in crucial ways as the substance through which kinship relations are forged (or not), whether between brothers, between husbands and wives, or between prospective brides and grooms. The centrality of irrigation to contemporary agriculture means that access to water is as crucial as access to land in shaping livelihoods, with reverberations across the rural social landscape.

For farmers such as Kantibai, Babu and Ganesh, despite its uncertainties, groundwater offered the (tenuous) prospect of upward mobility and dignity within a deeply hierarchical social structure and highly commercialized agrarian economy. A well of one's own contains dreams of abundant water and flourishing crops, the possibility of equality and mobility. Often these dreams are endlessly deferred or thwarted. Water is never found, wells run dry, debts mount, fate is fickle. And yet, farmers continue to strive, save and speculate on the subterranean in the hope that locating water beneath the ground will transform their lives above it.

CHAPTER 5
The Patidar Ethic and the Spirit of Caste: Knowledge, Status, and the Making of Agrarian Entrepreneurs

I first met Karan Patidar when he was working as a contractual surveyor for an insurance company. He had been working this temporary job for two years and the following year, he would be promoted to sub-district manager at another insurance company. Karan was the youngest of three brothers – one primarily handled farming, another worked as a lecturer at a local college. As a college-educated young man (who began but did not complete an MBA degree), Karan was on the lookout for a well-paid job or in lieu of this, eager to start a small business venture. At the time, he was considering opening a shop to sell drip irrigation technology to farmers in the area, but did not have the requisite capital to do so.

A few weeks later, I asked to meet Karan and his friend, Ajit, for an interview. We met at the nearest town and then proceeded on motorbikes to a quiet local temple where we could talk without the loud noise of the market and street. During the conversation, we discussed the advantages and disadvantages of various local crops – the amount of water required, expenditure on fertilizers and pesticides, time to harvest, expected market price, and so on. Eventually, the conversation turned to how, over the past few years, prices of agricultural commodities had become stagnant and their households were unable to make the profits they desired.

"If you aren't getting a good price for your potatoes, then why don't try something else?" I asked them.

"What else? There aren't many options available to us."

I respond, "What about wheat? Won't that be better for you?" I ask about wheat since government procurement of grain provides an assured Minimum Support Price (MSP) to farmers that acts as a buffer against price fluctuations.

Karan scoffs. “Wheat requires four months of water and one hailstorm can ruin the entire crop!”

His friend interjects, “See, with wheat we know that it will sell at anywhere between 1700 and 2000 rupees [per quintal]. So if you harvest about 10-15 quintals then you will make about 30,000 rupees. But with onions and garlic, you could make one and a half lakh rupees [$2000] just on one bigha [of land].… *To ye hai, risk leke chal raha hai.* (So this is it, people are taking risks). What can you do with 30,000 rupees?”

With pride and passion, they proceed to reminisce about the year (2013-14) when the price of onion rose to 80 rupees per kilogram. Karan said that his family made about 15 lakh rupees ($20,000) on the 600 bags they had stored. The price has not risen that high since, but they continue to grow these crops in the hope that it might, indeed it could, happen.

Karan’s friend, Ajit, repeats, “Risk! It is unlikely that we will get those same prices again… But you can never tell. This is the risk!”

I push back. “But doesn’t wheat offer more security?”

Karan disagreed. “You can’t meet your expenses with wheat. And what can you do with security anyway? *Gehu me ghar chala sakte ho, ghar ko bada nahi sakte ho*. (With wheat, you can run a household but you can’t grow your household).”

Ajit adds, “*Risky kaam ho gaya hai. Risk leke chal rahe hai sab*. (It’s become a risky business. Everyone is taking risks).”

Finally, Karan intervenes, saying “*Hamara, madam…sahi bata raha hu… Patidaro me aisa hai ki agar jo gehu channa lagatha hai, to ghar ke baccho ki sagai nahi hoti!*” (With us, madam, I’m telling you the truth. Among Patidars, if you grow wheat and gram, then your children don’t find spouses!). Ajit laughs in agreement. “*Kyuni log sochte hai ki risk lene ki*

capacity nahi hai. Matlab aap aage kuch nahi kar sakte. (Because people think that you don't have risk-taking capacity. Meaning that you can't do much in the future)".

Throughout my fieldwork in Malwa, I often heard the English term 'risk' used by various people to describe various hazards of contemporary life, from agriculture to health to marriage. But nowhere did I hear it more than when I was speaking to members of the Patidar community. As the traditional peasant caste and agricultural pioneers, Patidars are the most prosperous farming community in the region. Often, when I was interviewing farmers, I would be told, 'go study a Patidar village! They will teach you everything you need to know about agriculture!' Although I did not live in a village with *any* Patidar farmers, their presence was evoked constantly in conversations with farmers of all classes and castes. Patidar farmers came to occupy a central place in my research in different ways – both in stories told about them and stories told by them across the Malwa region. My own field village was surrounded by several villages in which Patidars were the dominant caste and I began to make frequent trips to these villages and eventually developed close relationships with farmers there. My trips to the local agricultural markets also allowed me to meet farmers from across the region and of various castes, including Patidars. Even during my observations of insurance company loss assessments, I met several young Patidars working as loss surveyors such as Karan and his friend whose conversation I recount above.

In this conversation, Karan and his friend narrate a perspective that I would hear constantly over the next year – that Patidars practice "*risk-waali khethi*" (risky farming). As the conversation above shows, farmers like Karan understand risk to be fundamental to profitable agriculture, often associated with horticultural crops such as onions, potatoes and garlic which are grown throughout this area. Risk represents both the danger and the possibility of certain

agricultural practices – growing certain crops, stocking them for a long time, and so on. But risk is necessary – it is the only way to achieve prosperity, to grow and expand your household (and its wealth) rather than simply run it in the day to day. Indeed, social reproduction – of the family and the caste group – lies at the heart of this quest for wealth and status through cultivation. Even as Ajit repeatedly noted that all farmers now have to take risks in order to earn enough money to meet daily expenses (they mentioned the high cost of school fees earlier), Karan points to a more fundamental necessity. If you don't take risks (that is, if you cultivate safe crops), then nobody in our community will want to marry your children (or more specifically, your sons). Growing crops such as onion and potatoes indexes your risk-taking capacity, that you are striving toward something bigger and better for yourself and your family. While this statement might certainly be a humorous exaggeration, it nonetheless points to the centrality of risk within the intimate sphere of marriage and family. Risk becomes an essential marker of prosperity and aspiration, shaping the lives of farming families as a whole – from which school your children can attend to whether you will find them a suitable bride. This emphasis is similar to Kristin Peterson's (2014) concept of "derivative life", wherein one's life chances and speculative market practices come to be inseparable.

In this chapter, I argue that risk-taking is a part of Patidar cultural distinction. One of the key aspects of risk-taking is to always grow commercial cash-crops. I was repeatedly told that Patidars only do "*aloo, pyaaz, lasan* (potatoes, onions, garlic)" and that they didn't waste their time with other crops like wheat. Indeed, Patidar farmers insisted that they even buy their wheat from the market – such was their commitment to commercial agriculture, and more importantly, separation from subsistence farming. Not growing wheat is a rarity, since this is the main food grain in the area and central to food security. Insisting that they would rather buy wheat from the

shop signaled a particular investment in cash-cropping. Even those farmers who did plant wheat (often poorer Patidars who owned small plots of land) insisted that they only planted enough for their household needs (and not to sell in the market or at government procurement centers), a strategy that was markedly different from most other farmers across caste and class who preferred to grow wheat as a safety crop.

A Balai (Dalit) man, who worked as a laborer on Patidar farms, attributed the cultivation of high-value crops to their aspirational impulse, bordering on greed. He explained,

> Look at all the other castes – they will happily just sow wheat and gram and be content with that. Patidars are different – they strive for more, they want more. See, there are some people who will look at this house [gestures to the two-room concrete house with a tin roof], and think 'this is enough for me, I don't want more'. They don't think '*double manzil banau'* (build a second floor). Patidars, though, are only thinking of money.

Patidars occupy an almost mythical place in the regional agrarian imaginary – as morally upright and hard-working, but also cunning and predatory. All of these ideas shapes the mythology of Patidars as savvy entrepreneurs who have found profitability in commercial cultivation. This is materially evident when one visits Patidar-dominant villages, with SUVs, palatial houses, and paved roads greeting any visitor. Of course, this is not to argue that all Patidar farmers are successful or wealthy – certainly, there are many who are poor and many Patidar villages which continue to lack basic amenities, let alone luxury goods. Yet, these stories about and by Patidars circulate through the rural landscape, creating a particular mythology of risk-taking. As several Patidars bragged, 'We like taking risks! We aren't even afraid of debt.'

This chapter examines how particular framings of risk (including financial investment, market speculation, and cultivation of high-value crops) comes to be the ground upon which caste identity and social distinction is articulated. As I show, these projects of identity-formation are material, ideological, and fundamentally relational. Deploying narratives about and by

farmers of the Patidar caste, it explores the contours of an entrepreneurial agrarian ethic within which farming is valued not for the subsistence and security it offers, but rather treated as a capitalist enterprise in which profit-making is the sole objective. As such, I follow the 'stories that people tell themselves about themselves' in Geertz's terms. These narratives resemble Sylvia Yanagisako's analysis of origin narratives of family firms in Italy which, she writes, "display the cultural models of personhood, firm, and family through which firm owners interpret their entrepreneurial histories, including where they have come from and where they are going" (2002: 39).

My chapter title references Max Weber's (1905) classic treatise on the Protestant ethic as a framework here not because Patidars are driven by any specific religious motivations or ideas of fate and divine predestination. Rather, I deploy it somewhat loosely to signal a similar preoccupation with capitalist profit – though here, the drive to hard work and discipline is fuelled not by uncertainties around other-worldly salvation but rather by anxieties around social status and masculinity. Specifically, I focus on ideologies and mythologies of risk-taking within and about the community, tracing the ways that risk dovetails with ideas of caste distinction and thereby, conceptions of moral value, masculine prowess and predatory dispossession. I trace narratives about and by Patidars to show how ideologies of risk have become deeply embedded in the Indian countryside. I make three interconnected arguments about the relationship between caste, risk, and knowledge: first, I show that risk-taking is central to the self-identification of Patidars and a locus of caste pride and cultural distinction; second, I argue that the risk-taking capacities of Patidar farmers are tied to the privatization of expertise in the context of neoliberal reorganization of agriculture; and third, that Patidar practices of agrarian accumulation are built on specific modes of land dispossession and systems of labor exploitation.

5.1 The Making of the 'Patidar': Genealogies of a Caste

As a peasant group, the Patidar community originate in the western Indian state of Gujarat where they "are its largest landowning community, having a reputation for hard work and hands-on experience in producing cash crops like cotton, tobacco, and indigo" (Damodaran 2008: 225). The term 'Patidar' itself is said to mean shareholders of the land (usually owned by the king). Historians view the community as a paradigmatic example of the 'invention of tradition' in that this community of agriculturalists – also known in Gujarat as Patels – did not quite coalesce into concrete form as a caste until the late nineteenth century. Community histories note that they belong to the varna of Vaishyas (categorized as traders) and that their ancestors were known as Kanbi or Kurmi (literally "one who cultivates the land"), themselves divided into two groups, Lewa Kanbi and Kadva Kanbi.

Vinay Gidwani argues that the "Patel caste is an overdetermined entity, enabled by historically and geographically contingent articulations of class, gender, political, and religious elements" (2008: 38). 'Patidar' did not quite exist as a caste group, but were internally fragmented classes of agriculturalists, who might be better labeled as kin-based status groups (Bates 1981). In the nineteenth century, there were landholding Patidars and others who derived this status from holding public office, and there were also 'superior' and 'lesser' Patidars, as well as ordinary Kanbi cultivators. David Pocock (1972) writes that the term originally referred to some Kanbi families who had *patidari* rights, or shareholding rights in land. The title of Patidar thus accrued to the descendants of those who had *patidari* rights.

It was the combination of colonial land settlement policies which favored certain groups over others, hypergamous marriage practices, and broader economic and political transformations that produced 'the Patidar caste', an amalgamation of estate-owning shareholder

group of Patidars (a status group) and Lewa Kanbi cultivators who rose in status to claim the label of 'Patidar'. Colonial land settlements distinctly favored the wealthier Patidars, giving them substantial proprietary rights in land. Shareholding (even of small parcels of land) carried higher status which meant that cultivators were eager to have their names listed in the settlement records as occupants of the land, and therefore, as Patidars. This landholding status allowed for better access to credit as well as a good marriage for one's children, both issues of urgent concern to rural householders. A combination of the new distribution of proprietary rights and economic development led to acquisition of land and status with cash (rather than through government allotments). Following this, Patidars, it is said, began to emulate the Baniya (trading class) through the hiring of labor to work the land and the cultivation of 'prestige crops' such as vegetables for personal consumption (Bates 1981).

By the mid-nineteenth century, Patidars were well-known for their cultivation of cash crops such as cotton and tobacco and became an important source of land revenue for the British. As rural hierarchies were reconstituted in the nineteenth century – through agrarian development, colonial revenue systems and so on – it was Patidars who gained considerably, and lesser Patidars and Kanbis rose in the ranks to claim Patidar status. Yet, during the turn of the century agricultural depression and famine, when tenants abandoned their lands, it was the higher Patidars who suffered from a lack of labor and non-repayment of debts, while those Patidars who cultivated their own land endured. In the 1931 census, Kanbis began to report their caste as 'Patidar' and adopted the last name 'Patel'. Indeed, the consolidation of their identity as agrarian entrepreneurs can be traced back to the crystallization of racial logics and typologies under the rule of Maratha kings and British colonizers. Vinay Gidwani recounts that the British regarded the Lewa Kanbis to be skilled and diligent farmers, "the substrate that would provide capitalist

entrepreneurship" (2008: 50) even though other agrarian castes were quite similar in their practices. In this way, agricultural performance and skill was tied – in a deterministic way – to the caste of the cultivator, an equivalence that continues to hold to this day.

In his classic work on Kanbi and Patidar castes of Gujarat, David Pocock (1972) too evokes the mythology around this community. Pocock writes that, until 1931, this group was largely known as Kanbi, with the change of name to Patidar indexing an improved social status for most members of the group.[87] This improved status was accompanied by a shift in customary values, including the prohibition of widow remarriage and a shift from brideprice to dowry. Perhaps due to this origin story of the Patidar caste, it exists both as a name and as an ideal in Pocock's terms. He writes, "But the term Patidar also connotes a state of affairs to be achieved. Patidar society is intensely hierarchical and competitive. It is as though every Patidar were concerned to prove himself a true Patidar" (1972: 15). Historian Crispin Bates argues that their competitive social ethic – including preference for cash crop cultivation, usury, landlordism and support for the Indian nationalist movement – possibly stems from their genesis and transformation as a status group. Moreover, the infiltration of this category by communities 'from below' indicates a high level of social mobility within the caste that is intimately tied to this ideal.

Eventually, Patidars in Gujarat became involved in Indian Ocean trade routes and overseas migration to East Africa, England and North America to set up small business ventures. They are, therefore, part of an affluent and highly mobile global diaspora. In this respect, Patidars in Malwa, where I worked, saw themselves as the poorer and more 'backward' branch

[87] Patidars themselves are not a homogeneous group and are composed of numerous class fractions, most prominently the Lewa Patidar who are wealthier and of higher social status and the Kadva Patidar, who are of lower status.

of the community, given that they were still largely wedded to and gain their status from agriculture (though even here, there are households of all classes within this caste and most have diversified into other occupations and trades).

Without positing a simple and direct connection between the period of Pocock's study (published in 1972) and the period of my study (2018-19) fifty years later in a different region, this argument about Patidar as ideal is productive in making sense of the lore circulating about the community both from within and without. Shaped by over a century of intense commercial cultivation, Patidars are viewed as (and view themselves as) the agrarian entrepreneurial ideal – diligent, hard-working, market-savvy, innovative, calculating. This was an ideal that even those within the community aspired to (even when it was beyond their reach as small farmers lacking capital). And while, long histories of capital accumulation through farming and diversification into allied trades shape this ideal, this history is often elided in favor of a focus on moral and cultural qualities of discipline, hard-work, and family values.

I recount this complex history in simple terms here because this history continues to shape the present in subtle and not-so-subtle ways. In doing so, I build on and extend the insights of Vinay Gidwani's work on the Patidars of Gujarat. In his book, Gidwani argues that the social distinction of this community (and indeed, any upwardly mobile group in an agrarian milieu) is tied to a withdrawal of the family from heavy manual labor. This social distinction is risky, difficult to maintain, exclusive and exclusionary. He writes, "membership in the club is constitutive of self-identity, and preservation of this identity is secured via structural domination" (2008: 169). It was certainly true that disengagement from wage labor is a part of Patidar identity and distinction in Malwa, as I will show below. However, the narratives I heard by and about Patidars emphasized risk far more than labor per se. Thus, I argue that while similar

logics of distinction and boundary-making are forged through agrarian labor relations, attachments to risk-taking and speculation within the sphere of the market are equally crucial to Patidar identity formation. And although the narratives I recount below might give the appearance of an endorsement of essentialized traits, I argue that they outline the exact opposite: showing caste to be a dynamic social process that intersects with class and gender in historically specific ways (Subramanian 2019).

5.2 The Culture of Caste: Morality, Work-Discipline, and Risk

On a thundering monsoon evening, Rachna and I sit cross-legged on the floor looking out at the downpour. The electricity has been cut off, but it isn't dark yet so we open the main doors and enjoy the cool air streaming into her house. As we discuss her natal village, wherein Patidars are the dominant caste, she talks about the Patidar ethic of hard work and care for their fields. To better explain it, she used a comparison from her marital (and my field) village, asking me, "You remember Kamala *bhabhi's* (sister in law's) field?" She was referring to the onion field of a fellow Balai (Dalit) neighbor which Rachna herself labored on.

> They thought that just because they got a good onion crop from the first field that they would do it again. But they didn't harvest even a single onion from that other field! And look at how much money they spent! 1000 rupees for each laborer and there were 12 of us. Then they bought the saplings from another village for 6000 rupees, and then there's the water and fertilizer. But when you went to their field, you couldn't even see the onion there. They didn't give it water on time, the water ran out, they didn't weed on time. They just planted the saplings and then left it like that. Then he [Kamala's husband] went off to drink [alcohol]. What could she do alone when she has to take care of the children and the cows? *Usse nahi banthi hai* (She is not capable of it). They just want to show that they have grown onion, thats all. But they don't put in the effort to take care of it. Look at the Khatis [another peasant caste] and Patidars, do you see even one weed in their field? They go to their fields every day, make sure no [stray] cows come to graze on their crops, make sure they spray pesticide at the right time.

Accounts of farming practice are deeply comparative. In Rachna's view, she could better explain what constituted 'good farming' by comparing it to 'bad farming' – neglect, hubris, amorality. Her account highlights essentialized ideologies of caste that circulate across the countryside. Within this framework, Patidars are often described as hard-working, fearless and virtuous, but also – perhaps contradictorily – as cunning and calculating, as I will show later.[88] These are broad generalizations and stereotypes, but ones with discursive and material force. Such accounts are common in many parts of rural India wherein the unkempt fields or poor harvests of lower-caste farmers are blamed on their laziness (to the occlusion of other critical issues such as access to capital, labor and knowledge, and so on). On the other hand, as Richa Kumar (2016) astutely points out, the same state of the fields of upper-caste farmers is always explained away as a product of the weather or environment, and never attributed to a lack of hard work.

In this section, I describe how intertwined notions of hard work, daring and moral virtue are *made* central to Patidar identity, and that risk-taking itself is a form of cultural distinction, differentiating them from other farming communities. While these are generalizations, even stereotypes, I follow Vinay Gidwani's cue in his discussion of Patel distinction, wherein he notes that his intention is "to underscore the power of the norm in producing regularities in the universe of conduct" (2008: 165). The Patidar work-ethic was frequently commented on, even among those who were deeply critical of Patidar dominance and exploitation. Rachna's brother, who still lived in a prosperous Patidar-dominated village, told me that no matter how wealthy

[88] Other caste groups are also depicted based on these essentialized and deeply casteist understandings of different communities: Khatis are simple and hard-working, Rajputs are exploitative and arrogant, Bagris are thieves, Balais are lazy. These conceptions are also tied into ideas of morality based on meat-eating and drinking alcohol, practices that are predominantly, though not exclusively, associated with upper-caste landed elites and lower-caste laboring groups.

these farmers are, they will still be in their field at 6am every single day. Even if they have a *naukar* (servant), they will still do some of the work themselves if there is a shortage of labor. This ethic, I was often told, extended to Patidar women as well. A man I met at a big agricultural market followed up his impassioned critique of their greed with this statement: "Even their women go to the fields early in the morning! Our [non-Patidar] women – they wake up at 8 [o'clock] and even then, they are reluctant to go to the fields." In reality, most women except those from the wealthiest households go to the fields – indeed, most farm labor is conducted by women across rural India. Yet, this emphasis on the role of Patidar women in particular aims to show that their active role in field labor is not in line with their caste and class status. Women in wealthy and upper-caste households are not *expected* to work outside the home, much less perform grueling labor in the fields.

Of course, all farmers and farm laborers work hard, toiling in the sun and rain to eke out a livelihood from the land. In this respect, Patidars are actually *much less likely* to work the land themselves, often hiring permanent caretakers and daily-wage laborers to do much of the sowing, weeding, spraying, and harvesting work on their fields. Patidars themselves largely play a supervisory role vis-à-vis-farm labor, although they are often ready to step in whenever needed. This assumed ethic of hard work perhaps makes more sense when compared with other dominant caste groups in the area – most prominently, the Rajputs, the former landlords. Unlike Patidars, who have largely earned their wealth through agriculture, the Rajputs (also referred to as Thakurs) represent an extractive feudal elite, who continue to display excessive arrogance and engage in 'wasteful' and 'immoral' consumption. Indeed, Patidar success – in local discourse – is often attributed to their moral virtuosity. When I asked someone whether Patidar wealth could be attributed to their (relatively) large landholdings, I was immediately told that even the Patidar

with 1 bigha of land was a rich man because he sows four crops a year! I was repeatedly informed that, although Patidars may not have as much land as Rajputs, they always make good use of it. Even the smallest landowner has a concrete house, a Bolero [SUV], a tractor.[89]

Work-discipline is central to this ethic – not only of going to one's fields every single day to oversee labor and monitor crop growth, but also to go at the *right time*. As the comment recounted above notes, not only do women go to the field when required, they go early in the day, pointing to their timeliness and punctuality. Being a good farmer necessitates getting to your fields early in the day. If the farm is a stage for the performance of knowledge, discipline and moral worth (Flachs 2019), this was a public performance of good comportment, not entirely unlike the women in Mumbai's settlements who must wash clothes in the morning to perform their social belonging as good neighbors and wives (see Anand 2017).

Karan, introduced in the opening conversation to this chapter, recalled to me what his father would tell him about the Patidar distinction: by the time Yadavs and Rajputs (other caste groups) get to their fields, it is already raining! Karan laughed but I didn't quite understand the joke. He explained: "it rarely rains in the morning, that is why you must get to your field early." After all, since it tends to rain more often and more heavily in the afternoon (during the monsoon season), getting to your field late simply meant that you could get very little work done. "The other castes only reach their fields at 11am. But you have to prepare your field in the morning. You can't use the bhail-gaadi (plough) when it is dark!" In sharing these narratives, I do not

[89] This show of material wealth exists in some tension with the ideal of austerity and economy among Patidars – often deploying family labor, avoiding frivolous expenditures, investing profits wisely. As my (non-Patidar) friends laughed, they have so much money but still they get their children married in a sammelan (joint wedding) – though this is a fairly recent development and hardly universal within the community. Tilche and Simpson (2018) argue that this shift toward a communal wedding funded by a community tax is indicative of the current situation of fewer girls available for marriage and the need to help poorer Patidar families manage the huge costs of weddings.

mean to suggest their truth value but rather, to examine them as circulating discourses that shape the formation of caste and agrarian identities within the rural landscape.

These ideas of discipline and timeliness are deeply moral ideologies that situate particular orientations to work within conceptions of moral virtue and righteousness. In rural Malwa, this was also always tied to strong Brahminical Hindu proscriptions on drinking alcohol and eating meat. In conversation, it was often noted that the landed elites, Rajputs, were too busy drinking (alcohol) and eating (meat) to pay attention to their land. These practices were discursively tied to immorality as well as idleness – qualities that were apparently passed down across generations. For instance, when I inquired with Rachna's brother, Mahesh, whether Patidar economic success could be attributed to their relatively high levels of formal education (most had finished high school and several had college degrees), I was quickly shot down. Mahesh dismissed my question with a wave of his hand, telling me instead:

> There is one type of education which you get at school and another type of education at home, that is *sanskar* (values)! If you see your child doing any *ulta kaam* (wrongdoing), then you must chide him. There is no meat eating, no alcohol, no cigarettes, none of these bad habits. In other castes, not only will the father send the son to go buy him a quart [of alcohol], he will sit his son down, open the bottle, pull out two mugs, and give him some to taste, telling him, try some! That is the difference in how they [Patidars] raise their children.

In this view, it is not the formal education of schooling that enabled the accumulation of wealth. Rather, it is the informal education of the home, a moral training – abstaining from alcohol, cigarettes, meat, gambling – that disciplined Patidar children into the ethic of entrepreneurial agrarianism. One evening, while sitting outside an agri-chemical shop, an acquaintance, belonging to the Patidar caste, was outlining his family's agricultural practices when he pointed to a young boy and his father approaching. The boy was carrying a plastic box on his back connected to a spray – a device used to spray pesticide on fields. Immediately, the he

pointed this out to me, "See, look, in our community, we start to train them young!" indicating that even this young boy – who looked not more than twelve years old – was already acquiring practical knowledge, spraying the fields himself, accompanying his father to the shop to buy chemical inputs. These are not novel tropes. Rather, they can be traced back to colonial-era racial stereotypes that propelled the ossification of caste identities across South Asia. As Gidwani (2008: 176) writes,

> The Lewa Patels' cultivation of managerial reason, and attendant traits such as entrepreneurship (*saahas*), progressiveness (*pragatisheelta*), and accounting ability (*ganatri*), as marks of caste civility and superiority, were remarkably effective in consolidating their economic and social dominance of rural central Gujarat over a period of 150 years.

Not only were Patidars said to exclusively grow horticultural and commercial crops, it was also always emphasized that they did so consistently, year after year, season after season. That is, while other farmers might shy away from growing a particular crop (say, onion) after a poor harvest or a low price, not so with Patidars. One afternoon, I was sitting with a Balai (Dalit) farmer as he watched laborers harvest his onion crop and bemoaned the current prices of onion in the market. He was contacting some Patidar traders to purchase his crop directly from the field, although he was unlikely to get a good price for his produce. Without any further probing, he continued, "*Voh log pyaaz aloo bahut karte hai, mile ya na mile. Is saal tho toot gayi, pura fail hua hai. Par voh log karte hi hai.* (Those people [Patidars] grow a lot of potatoes and onions, whether they get it [a good price] or not. This year the price has fallen, it [my crop] is a total failure. But those people do it no matter what)."

This narrative circulated constantly. Farmers and traders, Patidars and non-Patidars insisted that they were not deterred by things like debt or price crashes – they were invested in commercial cultivation for the long haul, unlike other farmers who might quickly switch to

'safer' crops following a year of losses. Another person explained, "Whether they get the rate or not, they still do it. They may get the rate one year, and even if they don't get it the next year, that's fine. They will still do it [sow] again." Patidars, it was said, are fearless, unbothered by the losses of a single season, sure that they would be able to compensate for the losses in another season or year. This was their business strategy – they were invested in commercial cultivation in the long-term, expecting to make windfall profits once every few years, but continuing to grow the same crops despite the ebbs and flows of the weather and the market. As Caitlin Zaloom puts it, "Risk reaps reward – in money, status, the elaboration of the social spaces of markets, and the construction of a masculine self" (2006: 93).

Other communities might try it one year – if they fail, they immediately stop, getting scared away. While this is framed as an act of fear and cowardice, it is more often a constraint – continuing to grow risky crops without making a profit would be an impractical and potentially devastating decision on the part of smaller farmers without substantial savings or other sources of income. Nonetheless, this *narrative* of masculine daring and bravado remained pervasive. What is elided in these accounts, however, is the extent to which Patidar speculation is itself premised on their diversification into other industries and occupations. Although this risk-taking and investment in commercial cultivation is framed in terms of bravery, in reality, this was only possible because nearly all Patidar households were not solely dependent on agricultural incomes. Instead, they relied on a range of government and private-sector jobs, shops and businesses, trading ventures, and so on, all of which provided crucial income (and capital and protective safety-nets) that allowed for continued risky investments in agriculture.[90]

[90] This apparent affinity for risky crops was often explained to me with a mixture of pride and humor. It was only rarely that I heard any derision of this practice among Patidars themselves beyond some small Patidars farmers who were struggling to keep up with the social pressure of being Patidar, of having to grow certain crops, of having to engage in risky cultivation – often going into debt and selling their land as a result of repeated crop failures.

Yet, when I mentioned to Jitu's father, an elderly Patidar man who claimed to have little interest in farming, that it seemed that it was mainly Patidars who grew horticultural crops, he launched into an animated explanation of why this was. "*Patidar log na – vo jo satta jua khelte hai, koi dar nahi hai. Aaje peeche dekhna waala nahi hai.* (Patidars gamble, they don't have any fear. They don't look this way or that)". He added that their attitude was such that they believed they could grow anything, even if they had to stand knee-deep in the mud. With great pomp and flair, he told me about an uncle of his who, on a whim, decided to cultivate beetroot. Although it was his first time planting the crop, he sowed 10 bighas (a sizeable area), investing 10 lakh rupees ($13,000) on it, although eventually the whole crop rotted. This didn't deter him. He simply shrugged it off and moved on. Jitu's father continued, louder and in a deeper voice, "*Ye game khelne ka bahut vo hai, peecha hatne wala nahi hai…Bahut bada sher hai ye Patidar. Khethi ke mamle me, kharche ke mamle me – hatne wala nahi hai* (He only wants to play the game and is never one to back down. The Patidar is a lion. When it comes to farming, when it comes to spending." When I asked why this was the case, he responds, "*Pata nahi iske blood me kya hai. Game khelna hai, bas.* (Who knows what is in their blood? They just want to play the game)."

Jitu's father was full of awe for what he sees as the Patidar spirit of courage and confidence, an agrarian sportsmanship, if you will. So much so that he naturalized and essentialized these qualities as inhering in the Patidar body, wondering if there is something in the Patidar blood that makes them such brave-hearts, particularly when it comes to agriculture. Discussing the Patels of Gujarat, Gidwani notes a similar pattern of self-narration, writing, "Patels will often describe themselves as a modern (*aadhoonik*) and progressive (*pragatisheel*)

caste, endowed with superior abilities to recognize and take advantage of new economic opportunities. Their bravado can border on cultural arrogance" (2008: 164).

Later in our conversation, however, his tone became more circumspect and sober. This insistence on 'playing the game', he bemoans, is a result of '*dekha-dekhi'* (emulation) which can have debilitating effects since not everyone has the ability to withstand the losses it may bring. A lot of land has been lost because of this, he sighs. Patidars have sold their land and left the village – his village – to go elsewhere work as laborers in order to save face. The game, then, is not without its losers. Physical labor is, in general, viewed as degrading but especially so for upper-caste men. While it was considered a symbol of diligence and duty to work on one's own land, to do so on the land of others for a wage was seen as demeaning.

However, these elements of Patidar identity and identification are clearly not without their contradictions. Their discipline and ethic of hard work might appear to sit uneasily with a seemingly senseless bravado and commitment to market speculation. This recalls the traders in Caitlin Zaloom's (2006) ethnography of the Chicago Board of Exchange who, on the one hand, cultivate disciplinary methods that are the hallmark of a good trader while, on the other hand, also engaging in hypercompetitive masculine showmanship. So too with many Patidars. Moreover, I found that while Patidars themselves lamented that they were prone to social emulation and the display their social status through material goods (as Jitu's father recounted above), people from outside the community frequently commented on their prudence and indeed, their miserliness. I argue, however, that these seemingly divergent aspects of their identity and practices sit alongside each other uncomfortably but not necessarily as contradictions. My interlocutors insisted that their discipline and prudence warranted their speculation and indeed,

undergirded it. Moreover, the comments on Patidar parsimony by other caste groups constituted thinly veiled critiques of their accumulation practices.

How does this 'culture' then shape agriculture? In all of my conversations, the idea of 'business' was evoked as a distinctive Patidar approach to cultivation in the present. As Karan once told me, "if you can't start a business, then why not make agriculture a business instead?" This invocation signaled two distinctions from farming as usual: that farming was primarily geared toward profit-making rather than food security (indexed in their apparent aversion to growing wheat) and that it was to be treated as a profitable business venture requiring investment and innovation.

Another acquaintance, Sanjay Patidar explained to me that you had to treat farming as a business, not just something you do simply because your forefathers did it and you inherited some land. He outlined the approach of Patidar farmers in this way:

> My samaj (*caste*) is very active in these matters, more than anyone else. You have to treat it like a business. *Risk wala kaam banta hai* (It becomes risky work). Like if you are a trader and you buy onions or potatoes, you know there is going to be a change in price but you have to take that risk. If you don't, then you are not going to save anything. You have to be prepared to invest every year and then you will make money one year which will compensate for the loss…The main thing is production – for that you have to invest. If you put in the right thing [input] at the right time, then you can get as much as 100 quintals on 1 bigha. And then even if you get a price of 10 [rupees per kilogram], you can easily cover your costs and make some profit. But you have to be prepared to take on *karz* (debt). Without that, no farming is possible…There is nothing in wheat and gram. Only if you are lazy or you have no capital, you will grow those crops."

In these comments, Suresh made a chain of connections – between business and risk, productivity and profit, investment and debt. In this logic, treating agriculture as a business (as Patidars tend to do) entailed taking risks, treating agriculture akin to the way a trader might approach their work – prepared for the risks of price fluctuations, but consistent in their investment in order to eventually make a profit. This investment is key because it is only with

expenditure on expensive inputs that yields increase (thereby, guaranteeing reasonable returns even when prices are not especially high). And, of course, investment entails debt. Toward the end, Sanjay insisted that there is very little money in the staple food crops of wheat and gram – these do not require much investment, but they offer little by way of profits too. This emphasis on 'business' extended beyond agriculture as well – across class and caste, farmers insisted that agriculture was generally not remunerative enough to rely solely on it. As outlined above, Patidars in particular have diversified into related trades – setting up shops in small towns (often agri-input shops which I will discuss in detail later) or entering the agri-commodity trade as commission agents or buyers. Diversification, as Shreya Sinha (2021) writes, is "a function not simply of distress per se but of the frustration of capitalist farmers regarding expanding accumulation". In the next section, I demonstrate exactly how this diversification is pivotal to their practices of accumulation.

5.3 Caste and/as Knowledge: On the Privatization of Expertise

Sitting on an uncomfortable plastic chair at an arhatiya's (commission agent) shop at the Indore vegetable market, I spoke briefly to traders and farmers as they entered and exited the shop to collect bills, inquire about prices or simply get some respite from the sharp morning sun. At one point, the crowd trickled out and shop became quite empty – barring one farmer who was waiting for his receipt. The farmer, a young man who looked no more than twenty, began speaking to me. Gesturing toward the owner of the commission agency who had just left the room, he leaned forward in his chair, as if he is going to let me in on a secret: "These are all Patidars, you know that?" I nod to indicate that I do. He continues, "These people are very sly. See, I have a neighbor, he's also Patidar. He has all the knowledge about farming. But he will

never share it with me. He hides his knowledge. When he buys pesticide, he transfers it into another bottle – just so I won't see what brand he uses. Look at how sly he is!"

This was a story – an apocryphal one – I heard multiple times during my fieldwork, predictably from farmers belonging to non-Patidar caste groups. Every person who told me this story insisted they had seen this with their very own eyes. Some, like the man above, said it was their neighbor; another man told me that he saw this while working as a laborer for a Patidar man. A similar account was offered to me by a self-described 'active' farmer from the Khati community (another prosperous agricultural caste).[91] He noted, "They [Patidars] put in a lot of effort. And they have the knowledge – one Patidar tells the other and the other, and so on. If you ask them about their farming, if you are a Patidar, they will give you all the information. But if you are not, then they won't tell you or they'll give you false information. At their events and [social] functions, they only talk about farming, and everyone is expected to know something. That is all they talk about. And they help each other out. They have caste unity. Other castes don't have that."[92]

Indeed, as traditional peasant castes, Patidars hold inter-generational knowledge of cultivation that circulates through tight-knit community networks. Many community members proudly told me that while they originally hailed from Gujarat, they were well-known as excellent farmers, having been invited to settle in the Malwa region by its rulers for the sole purpose of developing its vast and fertile agricultural lands. As the region's agricultural pioneers,

[91] Khatis were described to me as the "No. 2 caste in farming", second to Patidars who were more prosperous and advanced.

[92] Not all of this necessarily holds up. For instance, I did know a Khati family who entered onion cultivation on the insistence of a Patidar farmer from a nearby village. The daughter-in-law of that family laughed to me that her father-in-law was quite happy just slowly irrigating his wheat crop – but he was finally convinced by that man to do so. One might even interpret these stories of knowledge hoarding to mere jealousy – other groups were simply envious of their success and therefore,

they insisted that they were the first farmers to cultivate key cash crops, with knowledge of how to cultivate moving quickly within kin networks from its origin in villages around the commercial center of Indore. For example, Krishna, a small farmer in my neighboring village, asserted to me that his father was the first to plant onions in the village – others only started doing so after observing him for some years.

Beyond this historical association with agricultural development in the region, I want to emphasize that this community in particular has access to agricultural knowledge – of seeds and pesticides as well as prices – through extended caste and kinship networks across the Malwa region. It is through these networks that agricultural expertise flows, creating forms of knowledge capital critical to contemporary agrarian life. This, alongside the limited presence of agricultural extension agents and government-run agri-chemical shops, has meant that agricultural expertise has been effectively privatized, circulating through familial networks rather than through publicly accessible channels. Certainly, knowledge has always flowed through these social relationships – but what is perhaps different now is that state extension work is minimal even as more farmers aspire to commercial cultivation. Moreover, state policies have always worked through the mobilization of caste networks – Green Revolution policies were targeted toward wealthy landed farmers with the ability to invest in (albeit subsidized) inputs and irrigation facilities. Theories of diffusion of agricultural knowledge and technological innovations through 'model farmers' fail to account for the circumscription of knowledge flows within caste and class networks as well as the practices and perceptions of concealment and secrecy that fuel distrust between farmers.

When I asked Karan about where he received his information from, he first said: you can go anywhere, the shopkeeper, your neighbor. This was an answer I received many times when I

asked about sources of information – most people gave generic answers at first referring to shopkeepers at agri-input stores or friends and neighbors. I pressed, asking: if you need specific advice like if you're facing some issues with your crop, who do you ask? For immediate knowledge, he said he might go to a nearly input retailer. But he also gets valuable information through kin networks – for instance, when his *maasi*'s son (his mother's sister's son) came to visit recently, he took a tour of the fields and suggested to Karan a different kind of fertilizer to increase his yields.

Caste networks are crucial to every aspect of cultivation – from deciding what seed to buy to deciding when to sell. Though these networks of knowledge and marketing were not exclusively caste-based, caste played a dominant role in shaping these decisions – for instance, a Khati farmer would often sell to a Khati trader from a neighboring village. This is certainly not a fixed rule – but these caste ties signaled a relationship of trust and obligation (for instance, if they are part of close-knit networks, these traders were perhaps less likely to swindle you or give you a bad rate). Even when these interactions occur between caste groups, caste and class intersect to produce closed networks of knowledge transmission. For instance, Patidars are well-known for being entrepreneurial farmers and are often more likely to get loans or informal futures contracts with retailers and traders. They are also known to invest heavily in inputs so retailers are more likely to see them as profitable and long-term customers.

The neoliberalized seed and input market described by Andrew Flachs (2019) testifies to this predicament. Investigating the question of how farmers make seed choices in the southern Indian state of Telangana, Flachs finds that it is social emulation, rumors and advertisements (rather than inter-generational and experiential expertise) that structured their decision-making. Small farmers, for instance, largely follow the practices of large landholding farmers, assuming

that their wealth, high status, and social capital ensure sound knowledge of agricultural inputs. Flachs reports asking a farmer if he trusted the advice of a local shopkeeper, to which the farmers responded that the shopkeeper would not lie to him since they were of the same caste. The reverse is also true. When Flachs accompanies a poor tribal farmer to the inputs shop, the shop owner is reticent in his recommendations of seeds, later commenting to Flachs that such farmers have no knowledge of what they are buying and only want the cheapest seeds. These uneven geographies of knowledge shaped by class, caste and gender also mean that the women who actually work on the fields have little say in decision-making on inputs, which remains the domain of wealthy male landowners, whose practices are then emulated by poorer farmers. However, contrary to Andrew Flachs' (2019) and Glenn Stone's (2007) argument that farmers (including wealthy and upper-caste farmers) are primarily driven by social emulation and ephemeral seed fads, making agricultural decisions almost random and without clear grounding in social networks, my research finds that knowledge and decision-making are deeply structured by caste and class and often subject to practices of concealment and secrecy.

Figure 27: A small agri-input retail shop in a market town selling seed, fertilizer and pesticide

Even as other caste groups enter cash-cropping and attempt to follow Patidar practices of cultivation, they are not always successful. In part, this has to do with access to the economic capital required to ensure good yields, but this is also tied to access to knowledge. Rachna, who earlier derided the state of Kamla bhabhi's onion field, analyzed the situation thus:

> The other castes, they don't know how to do this kind of farming…They [Patidars] take *ruchi* (interest) in this, they always do it well. Now the Rajputs in my village have also started planting these crops, but they still don't have the same methods and knowledge, they just dont know how to do it. And Patidars will not tell them. So they don't put in the *dawai* (pesticide) at the right time, they dont put in the correct *kaad* (fertilizer). If you go to their fields, there will be grass as high as the onion!

While the (relative) success of Patidars in commercial agriculture can be attributed a large number of interrelated social factors, it is agricultural knowledge in particular that shapes these entrepreneurial possibilities. As Rachna and many others noted, others who tried to grow similar crops *just did not know how to do it*. Like other agrarian castes across India, Patidars too have diversified into small agri-business – running agro-chemical shops and working as commission agents and traders at local and regional agricultural markets. In the town closest to my field village, for instance, nearly all the Krishi Seva Kendras (Agriculture Service Centers as many agri-inputs shops are named) were run by Patidars, and the remaining by members of other dominant caste groups (Jat, Rajput and Brahmin). These shops, located in villages and small rural towns, constitute a key node through which the "abstract machine of agribusiness capital is fundamentally driven on the ground" (Aga 2018: 1). As sellers of inputs such as seed, fertilizer, pesticide, fungicide and so on, these shops are a key intermediary between agri-business corporations and farmers. Moreover, these retailers are key figures supplying farmers with requisite knowledge and quick solutions to their cultivation woes. Occasionally, when I would visit these shops in the nearest market town, I witnessed dozens of farmers come by, telling these

retailers what problems they were facing in the field and asking for suggestions on how to address it. The retailers often recommended a specific product and also guided the farmer on how much to apply and for how long.

Aniket Aga (2018) has also illustrated how retailers are the primary source of technical advice for farmers in the context of near complete absence of agricultural extension services. The *gram sewak* (as the extension agent is called) was rarely seen in my primary field village. Moreover, anecdotal evidence suggests that it is largely (though not exclusively) wealthy, upper-caste and 'progressive' farmers who are given advice, inputs, and access to special training workshops and field trips by extension agents. A Dalit man scornfully noted: "Do you think they [shopkeepers] tell us anything? They are all *unchi jaat* (upper caste), they won't share anything with people like us". These accounts pose a critical challenge to developmental programs and policies that often rely on the diffusion of knowledge and expertise from agricultural extension agents to influential farmers who then directly or indirectly persuade other farmers to adopt certain practices or technologies. Given the entrenched and intersecting nature of caste, class and gender hierarchies, it is highly likely that unequal access to knowledge is reproduced, rather than challenged, through these programs.

Moreover, a significant number of traders working at the local markets (ranging from the district markets to the big regional hub of Indore) belonged to the Patidar community. Many, if not most of these business owners, continued to have strong ties to the village and owned farm land themselves (although these were operated and supervised by their brothers and fathers).[93] Market information (including on price, demand and supply) is essential to practices of stocking, hoarding and speculating on price. In my discussion on onions and market speculation (Chapter

[93] In a classic intra-family diversification, it is not uncommon to find one son handling the agricultural land, another son managing a shop or entering trade, and a third working in a stable government job.

3), I opened with an account of Krishna's market practices – he had several trader relatives who keep him apprised of daily price movements in major wholesale markets and in big cities across the country. Another Patidar man, Nikhil, would regularly forward to me What's App messages from one of his relatives who worked as a commission agent in the Indore market – at the end of each day, the agent sent a message detailing the lowest and highest price of each commodity and of different sizes and qualities of the commodities, which Nikhil would then send to me since I was interested in agricultural markets.

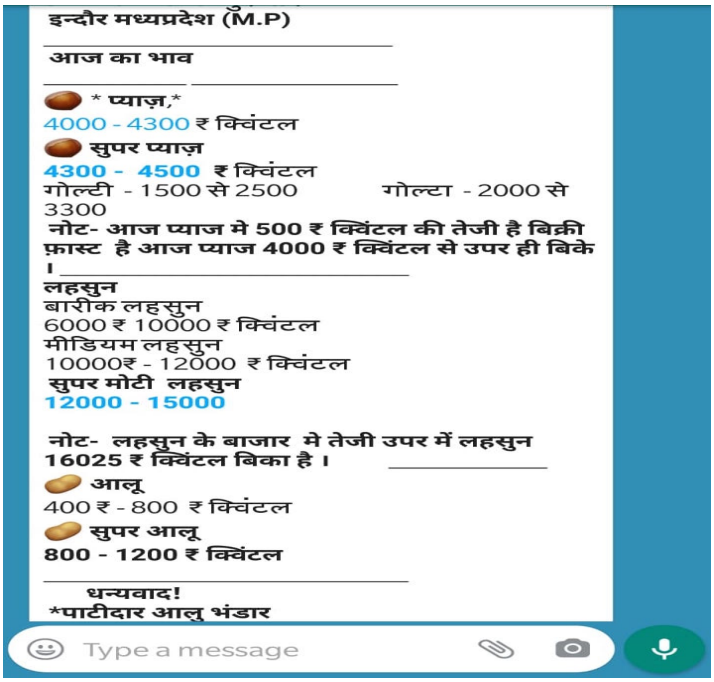

Figure 28: A What's App message detailing the prices of key commodities at the Indore market

While a lot of this information is available on the internet and mobile phones and certainly circulates through other networks, I highlight this here because it offers a glimpse into crucial networks of market information that were central to risk-taking practices. Often, poor and low-caste farmers would ask me for price information since they knew I frequented the local markets. On the other hand, Patidar farmers were almost always hyper-aware of prices, not just

in the district and regional markets but also in more distant commercial centers. I was (perhaps foolishly) surprised to learn about the extended network of contacts that many Patidar farmers had with traders and commission agents in distant market centers from Kanpur in northern India to Nashik (a key onion market) in western India to Bangalore (an important garlic and onion market) in south India. These commercial networks were often built over years, stemming in part from visits these farmers had made to these markets to sell their produce or to buy seed. Indeed, diversification into agriculture-related businesses is also common among peasant castes since they can tap into existing caste and kin networks – predominantly farmers – to attract customers or buy quality produce (Sinha 2021).

These connections became more evident to me on a cold winter day in late 2019 when I visited the home of Ramlal, a Patidar patriarch, in the village of Badgaon. I had first met them several months prior when I visited their home along with two Patidar traders who were scouring their village to buy onions directly from farmers (rather than through regulated markets). That morning, we were interrupted by a visitor – a burly man in a woolen jacket came through the door and was greeted warmly by the family. He was a big trader who had come to settle his dues with farmers in this village (paying them for produce he had purchased earlier). He was also a relative of Ramlal on his maternal side. Soon, several other farmers entered the living room as the trader and his assistant prepared bills and pulled out wads of cash to pay them. Inevitably, the bulk of the conversation was about price – Ramlal and the other farmers made persistent inquiries about the expected rates of various agri-commodities in the coming months and even tried to forge a (informal) futures trade for a set price (the deal did not materialize). Although this is only anecdotal evidence, I deploy these observations to show that spaces of the household and family are always key arenas for the exchange of agricultural knowledge, made all the more

relevant when members work in allied fields and sectors. Of course, this is not to argue simplistically that caste ties are without contention – later, Ramlal commented that traders – even if they were your own relatives – will not give you all the information. Yet, it highlights the significance of caste and kinship in shaping expertise and calls for greater attention to circulations of knowledge beyond formal channels of agricultural extension.

5.4 A Suitable Bride, or Who Wants to Marry a Farmer?

In the opening section of this chapter, Karan insisted that risk-taking was not only essential to profitability but indeed to marriageability. As he put it, those who grow only low-risk, low-value crops like wheat find it difficult to get their children married. This comment – while presented as a joke – stayed with me for months after. In that conversation, he insisted that it was only these cash crops that allowed for profit-making. And yet, as the conversation continued and I pressed him further on the risks of cultivating these crops, Karan insisted it was just about profit per se (of course, it never is). Or rather, accumulation was not simply an end in itself, but foundational to social status, community identity and indeed, caste endogamy. This is not to say that money and wealth are somehow paramount concerns only to this group and not to others. This is certainly not the case – as I have shown in other chapters, the significance of land as well as water to the search for suitors is a cross-caste and class phenomenon. Although young women often prefer marrying men with service sector or government jobs so they will not be required to toil in the fields, land continues to have significant value. Indeed, even as rural residents pursue multiple livelihood strategies – setting up businesses, working in a factory or seeking office jobs – the economic and symbolic value of land endures.

Sarasij Majumder (2012) writes that smallholder farmers in rural Bengal might oppose land acquisition for industry even as they simultaneously make plans to secure jobs in the industry or set up small shops around it. Addressing these seeming contradictions around land and livelihoods, Majumder (2019: 89) argues that their practices highlight the continued value of land for smallholders even as they engage in a range of non-farm work, noting that:

> Ownership of land, no matter how small the plot, represents possibilities for a better future, because land can be leveraged to obtain the resources necessary to enter a nonfarming vocation. It also represents consolation for unfulfilled hopes and desires, because it is a symbolic and material marker of distinction.

Majumder's interlocutors cite the pursuit of varied livelihood strategies as essential because, in one man's words, 'who wants to marry a farmer?' Among my interlocutors in Malwa, similar logics were in play. As noted several times throughout this dissertation, nearly all households engaged in a range of farm and nonfarm work. At the same time, in the face of jobless growth and the dwindling of coveted government jobs, marrying a farmer (here, gendered male) was hardly out of the question. However, not all farmers are the same. The key difference then lies in what *kind* of farmer you marry. Among Patidars, this referred not only to how much land you own, but also what kinds of crops you grow. My Patidar interlocutors insisted that other caste groups were not as status-conscious as they were – as long as you owned a bit of land, that was more than enough. But not so for Patidars. In David Pocock's (1972: 19) insightful framing,

> It was daily obvious to me when I lived among Patidar that whether a man married his daughter well or not, whether he could maintain his dead brother's wife as a widow or marry her himself or to another, were questions tightly related to spoonfuls of sugar, measures of ghi, and heads of millet.

One rainy August afternoon, when I visited the home of a wealthy Patidar man in a neighboring village, I was privy to one such conversation about land, caste, status and marital alliances. Anil, who owned a successful printing press and had a sizeable landholding, invited

three of his friends and co-residents of the village (all from the same caste) to join the conversation. His ageing mother also sat with us in their spacious living room – although she sat on the floor while the men and I were seated on velvet sofas placed against the rooms three adjacent walls. In the course of a long and lively conversation over tea and savory snacks, I asked them why it was that Patidars primarily engaged in intensive commercial cultivation. As each of those present shouted out a barely audible answer, the conversation quickly shifted toward an issue that many interlocutors discussed with me – the difficulty of finding brides. Here too, they insisted on a certain Patidar exceptionalism, arguing that this was a particular problem in their community.

"In our community, you must own land. If you have too little land like 5-10 bighas, nobody will give their daughter to you!" one of the men explained. He pointed to another man sitting next to him. "Look at him! He has only 7 bighas and because of this, he can't find girls for his two sons! They are old and still unmarried". The group insisted that, among their caste, if you did not own enough land, you would be compelled to find a bride from Jhabua [referring to a poor and predominantly tribal district].[94] They laughed nervously at this prospect. "And even then you have to pay them one lakh rupees to send their daughter here. Sometimes they come here, steal all the money in the house, and then run away."

This comment was one of many such deeply prejudiced and casteist comments about *adivasis* among upper-caste groups. Marrying an *adivasi* (tribal) bride is not entirely without

[94] It is acceptable (though not preferable) for a man to marry outside the community since the bride would be incorporated into the caste (unlike the other way around). During fieldwork, it was not uncommon for those who could not find brides for their sons to ask me if I could find a bride from my hometown. One woman in particular, however, was especially insistent, pressing me to find a bride for her brother-in-law. Her husband's younger brother – in his late twenties – was still unmarried. This was somewhat exceptional given the fairly young age of marriage for most in this area.

precedent in this community (and others) but signals a decline in social status. While men can marry outside the caste group and incorporate their wife and children into the caste fold, this carried a certain stigma and lowered social status. Moreover, as this story is meant to highlight, could one really trust a non-Patidar bride? Without social (that is, caste and kin) ties to the family, the bride could easily run away and even steal all of your money. Indeed, given the force of caste endogamy, not marrying a fellow Patidar was also marrying down and marrying outside the region. That is, these brides were lower-caste and from outside the Malwa region. In such cases, it is not the bride's family that pays dowry to the groom's family (as is the present custom) but the groom having to pay the bride to marry him in a clear inversion of gender roles and hierarchies associated with upper-caste patriarchy.

More broadly, what these comments reveal is an anxiety around maintaining caste endogamy in the face of rising aspirations and dwindling landholdings. These comments hint at deeply gendered anxieties around finding a good bride for their sons – unsurprisingly framed around the fussiness of 'girls these days' (who expect a range of facilities such as concrete houses, motorbikes, tube-wells, and toilets) as well as the dearth of well-paid and secure jobs for educated young men outside of agriculture. But, of course, they want these same amenities when looking for grooms for their own daughters. Therefore, "By wanting the best for their daughters they are contributing to the bind of their sons" (Tilche and Simpson 2018: 1534). The predicament of the forever bachelor is worsened by demographic imbalances and skewed sex ratios, the product of son preference, female feticide and the neglect of girl children. These longstanding practices now "intersect with a crisis of agriculture and the devaluation of rural identities" (ibid. 1519) to produce a crisis of biological and social reproduction within the Patidar household.

To make sense of this, I return to David Pocock's study of Patidars in Gujarat conducted in the 1950s. While it is clear that marriage practices have altered considerably over the last 70 years or so, his account of the centrality of marriage practices to Patidar identity and aspiration is especially valuable here. Pocock argues that the core of being a 'true Patidar' is the marriage of one's children and especially one's daughters. The good marriage, he writes, is hypergamous – that is, the brides marries 'up'. It is customary therefore to marry one's daughter to a 'superior' groom, although this too requires wealth, since the dowry given would also be substantial. This places pressure on families of both bride and groom: the bride must secure a proper dowry in order to arrange an eligible match while the groom must be viewed as a desirable match (of higher relative status). This also creates competition for brides and a quest for higher status. However, this practice of hypergamy made the marriage of one's daughters a crucial mechanism of upward social mobility. Thus, if you are a poor Patidar with a small landholding, it becomes difficult to find a bride for your son/s.

While these historical structures and values of hypergamy endure, they are not unchanged. For instance, a study of marriage markets among Patidars in Gujarat found that marrying 'up' in the present was less tied to the value of land and more connected to the possibility of international mobility (if the boy has/can get a foreign visa) (Tilche and Simpson 2018). Those without such prospects found it exceedingly difficult to arrange a suitable bride. In my field area, in the neighboring state of Madhya Pradesh, Patidars are still deeply tied to agriculture and less likely to be international migrants. Here, status is still tied to the land and more specifically, to particular forms of risk-taking. Vinay Gidwani's argument about work and leisure as sites for the articulation of social distinction for Patidars (and others) might be productively supplemented by an argument about the politics of risk, whereby masculinist

engagements with risk within agriculture become (in the absence of worthy alternatives) the grounds for the pursuit of higher social status and distinction even within caste formations. Growing high-risk crops or speculating on price is therefore never simply about production and profiteering, but always already about reproduction of family, household and caste through the hunt for a suitable bride.

5.5 'A Cunning Caste': Dispossessing Land, Controlling Labor

Mahesh came to visit his younger sister, Rachna, the day after Bhai Dhuj, an annual festival in which brothers visit their sisters in their marital homes. He had arrived earlier that evening along with his wife and would stay the night. To celebrate, Rachna prepared a special meal for the occasion - of *puris* (fried bread) and potato curry with her famous *gulab jamun* (milk-based sweet) for dessert. Mahesh finished eating and joined the women – his sister, sister-in-law, and niece – as they chatted in the kitchen. I joined them, sitting on a mat placed on the concrete floor and placing my computer in front of me, hoping to type up my day's field notes while also chatting with the group. But before I could begin to type, Mahesh turned to me and asked, "Did you know I live in a Patidar village?"

The question confused me, but I nod to indicate that I did know. I soon realized, however, it was only a rhetorical question. He hardly expected an answer. Rachna and Mahesh's family belonged to the Balai caste, a former 'untouchable' (Dalit) community. Now their family were Kabir *panthis* (devotees of the saint Kabir) and had improved their status through practices such as abandoning alcohol and meat-eating. Indeed, their lot in life had improved significantly – Rachna's father owned a small shop and her younger brother worked as a laborer in the district

market. Yet, they were still relatively poor and owned no land at all. Instead, Mahesh worked, alongside his wife and mother, as agricultural labor on the fields of Patidar farmers in his village.

Mahesh then went on to describe a story that I had become quite familiar with. Across Malwa, I heard from multiple people about the Patidar cropping pattern, which is built on multiple short-duration commercial crops – soybean, potato, onion, garlic. In many ways, this pattern was beneficial to Mahesh since, as an agricultural worker, his family depended on Patidar cultivation for much of their income. They worked in contracted 'gangs' paid per unit of land harvested, earning several thousand rupees every week during peak harvest season.

But Mahesh's story quickly turned from overwhelming praise of the Patidar work ethic and entrepreneurialism to a more critical account of their practices of accumulation, of they become "worms" (*keede*) when it comes to land. "I'll tell you how they work. They will come to you like they are a friend, speaking to you politely". He throws his hand up to the side as if to imitate grabbing the shoulder of a friend. "He will find that you are in need of money and he'll take you for a walk, make you drink super *chai* (tea), and then he'll say you need some money, here, take one lakh rupees! And you'll think, 'Wow what a good friend!' Then later, he'll send a third person to you to suggest that you pay him back with some of your land [because he doesn't want to be seen doing it himself]. And so then, you will go and tell him, 'Listen I can't pay you the money so take some of my land instead'. That is how they work, and that is how they accumulate more land." By now, everyone is laughing at his imitation of this wiliness.

He imitated one such situation to show how a Rajput man is a victim of his own unsavory habits and is fooled into giving away land - parcel by parcel - to a smarter and savvier Patidar farmer. "There is a Rajput man with 50 bighas . But he still lives in a mud hut. He drinks alcohol all day long and visits his fields only twice in the season – once for the sowing and again at the

time of harvest. *This* is the type of person who goes into deep debt to Patidars and then who is forced to sell land to pay it back".[95] They are, in the words of another interlocutor, "a cunning caste (or *chaalu jat*)".

The narration of a story is as much about the story and its protagonists as it is about the teller. Here, the teller, Mahesh, is a landless Dalit man with a razor-sharp intellect. He worked for Patidar farmers but also associated with them socially (somewhat rare for a man of his position). Moreover, the account illustrates a process of dispossession wherein it is the former landed elite and upper-caste Rajput farmer who is tricked into indebtedness and distress land sales by a middle-caste peasant farmer.[96] While I heard of many similar instances of land dispossession among Dalit and tribal farmers (by Patidars and by other groups), it is interesting that Mahesh chose to recount an episode that involved a commercially-minded peasant farmer dispossessing an arrogant and lazy feudal landlord – through a combination of cunning calculation and moral virtue. His own position is crucial here. He is keenly observing the predatory practices of this Patidar man without sympathy – perhaps with a tinge of delight – since Rajputs are widely known for arrogant adherence to caste hierarchies and for committing atrocities against Dalit communities.[97]

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[95] Vinay Gidwani documents a similar process among the Patidars of Gujarat who have long been accused of coming into possession of vast tracts of land through usurious lending practices and trickery. Gidwani recounts a conversation with an interlocutor who noted - much like my own interlocutors – they had gained control over Rajput land because the latter engaged in wasteful social expenses and indulgences such as alcohol and opium.

[96] There are also many Patidar farmers who became indebted (primarily due to speculation gone awry) and were forced to sell their land and, in some cases, migrate out of their village owing to their loss of social status. I did not know any of these people personally but only heard such stories from others.

[97] There are several Patidar farmers who were moving toward leasing land in the Narmada valley region, an area called Nimar which is predominantly *adivasi* (tribal). The land in the region is water-rich since it lies adjacent to the Narmada river. Thus, a form of water-grabbing seems to undergird this movement of farmers. Given that this is a tribal region, land sales from tribal landowners to non-tribals is prohibited by law, so farmers generally lease vast tracts of land at relatively cheap rates. In this region, Patidars (and some farmers from other castes) grow a range of crops such as onions, corn, and sugarcane. While those whose villages are close to this area simply visit from time to time and hire a local overseer to guard their fields, others travelled considerable distances to spend months in the region and even build small houses near their fields. Although, as I mentioned, buying land in that area is legally untenable, there are worries that this leasing will take the form of de facto dispossession of local adivasis.

Undergirding Mahesh's trenchant critique is also his aspiration for a better life. The next day, when I spoke to his sister-in-law, Lata, about his stories, she explained that he was becoming obsessed with Patidars in part because of his own (stymied) striving. Mahesh worked as an agricultural laborer. That he did this work as a man was quite unusual since much of this labor is considered 'women's work'. In part, this was emasculating but he swallowed his pride and toiled hard in the fields. This hard work certainly reaped benefits, in that his family's economic position had improved considerably. But Mahesh was understandably frustrated, yearning for more. According to Lata, "They have seen poverty but they have worked hard to do well… Now that he has spent time with them and observed their ways, he is both jealous and resentful. But he is stuck in his position."

But Mahesh's insights into Patidar practices penetrated far deeper than an individualist reading of his life trajectory and aspirations for the future. That night, he held forth for hours, explicating every detail of what he had observed to be Patidar character and behavior. Not only did they want to make money, he argued, they also wanted to make sure nobody else did (from other castes). Their wealth was therefore premised on the control of others. He explained, resentfully, "They don't like it if you draw someone away from their bad habits. If you tell someone not to drink alcohol, they will shut you up. Why? Because they want you to stay where you are. They don't want you to improve your position. Otherwise, who will labor in their fields? …You know the *angrej* (the English)? They used to rule over us. That is what the Patidar is now. They rule over us and squeeze us for all we have." Mahesh elaborated what he believed to be the perspective of Patidar landowners "[They think] 'who will work in my fields? Who will plant my onion and harvest my potato? Yes, you should just keep grazing cows, that is your place, and you should not move from there'".

Here, Mahesh's account moves beyond the dispossession of land through debt to a focus on the control over labor.[98] In order to ensure a cheap supply of labor, Patidar landowners actively work against projects of moral self-improvement (such as teetotalism) among lower castes since this could potentially result in material improvements and an exit from agricultural labor. On the one hand, Mahesh extolled the work ethic and crop cycles that gave him year-round work in the fields while on the other hand, he castigated his employers for their active resistance to and suppression of any form of social mobility among the poor. Indian agriculture continues to be dominated by small landholdings and dependent on manual labor performed by low-caste agricultural workers. Control over their labor is critical to the maintenance of regimes of agrarian production.

In this context, Mahesh's account recalls Rupa Viswanath's (2014) forceful analysis of caste as a form of labor control within which the subjugation of Dalit castes could be classified as a form of enslavement even until the mid-twentieth century. While conditions have certainly transformed dramatically for Dalit agricultural laborers who can now be classified as free wage labor, these legacies of caste supremacy and domination over laboring groups endure in the present. Like all capitalist wealth, Patidar accumulation, and indeed, their risk-taking abilities, has been built on the backs of Dalit agricultural workers. This caste oppression is quite different from the open violence of Rajputs against Dalits – it is less focused on overt forms of physical violence and caste segregation, more focused on subtle forms of control and exploitation that are primarily geared to the preservation of a cheap agricultural labor force to tend to their fields.

None of these are novel stories – indeed, historians have documented the relationship between debt, dispossession and forms of labor control across the world, including various parts

[98] It is common for wealthy landowning farmers to berate the unwillingness of agricultural labor work in their fields, citing government schemes that give them "rice for one rupee" which makes them lazy and uninterested in work.

of India. Yet, Mahesh's account is significant for several reasons: first, it offers a counter-narrative to the self-narration of Patidars as embodiments of moral virtue and diligence; second, it highlights the continued significance of quotidian and gradual processes of local land dispossession at a time when there has been a great deal of focus on large-scale dispossession through developmental projects (dams, mines, industries, real-estate); and third, to outline existing forms of moral critique of class and caste relations among agricultural laborers themselves.

5.6 Conclusion

This chapter has examined the sociology and ideology of risk, asking: within the hierarchical agrarian structure of rural India, who takes risks, and why? In answering this question, I explored how ideologies and mythologies of risk-taking are imbricated within discourses of caste difference, cultural distinction, and moral valuation. Specifically, I focus on discourses and practices of the Patidar community, a dominant cultivator caste, whose members rank among the most economically prosperous in the region and are well-known for growing profitable cash crops. As many Patidars told me proudly, "we even buy our wheat", signaling their distance from the subsistence agriculture that still pervades the countryside. Indeed, men from the community proclaim their preference and flair for risky ventures, and emphasize moral virtue, agricultural expertise, and caste ties to explain their market success. They have fully embraced the commercialization of agriculture in post-liberalization India, and position themselves as savvy business-people. While their rise to become the region's agrarian capitalists is not recent or novel, I show how their self-positioning signals the constitution of the 'good farmer' as risk-taking entrepreneur. Further, I show that Patidar economic success is rooted in

caste and kin networks through which expertise travels, signaling the near-complete privatization of agricultural knowledge. Throughout, I track stories about this caste of capitalists - told by Patidars themselves and by others – to reflect on contemporary agrarian accumulation and differentiation beyond the dominant lens of 'rural crisis'. Ultimately, it shows how practices of accumulation and speculation are premised on practices of land dispossession, labor exploitation and knowledge concealment in ways that reproduce entrenched inequalities of caste and class.

CONCLUSION
Other Futures are Possible

"If speculation is indeed our zeitgeist, how can we imagine the future otherwise?"
(Bahng 2018: 7)

"Aspiration implies both a larger, public dream and that there may be possibilities that have not yet been conjured, that start as intimate practices of imagining things otherwise."
(Moodie 2015: 17-18)

In the midst of writing this dissertation, the agrarian unexpectedly came into global view. Farmers in India began to protest the central government's passage of three agricultural marketing laws in September 2020, laws which are poised to transform the face of agriculture.[99] These laws focus on agricultural marketing, only partially addressed in this dissertation – but their reverberations, if implemented, will be felt across the agrarian landscape, heralding the end of state-sanctioned support prices and state regulation of agricultural markets while enabling the expansion of corporate agribusiness and contract farming, and more.

As soon as these bills were announced, as early as June 2020, farmers began a still-ongoing protest and blockade in the northern Indian states of Punjab and Haryana, then proceeding to the capital city of Delhi and in towns and cities around India and the world. Powerful scenes of farmer-worker (*kisan-mazdoor*) solidarity, the support of trade-unions, and the strong participation of women and youth in this movement have been especially inspiring. While the protests have drawn the greatest support from the northern states where farmers are most dependent on the existing system of agricultural marketing and fixed prices for wheat and paddy, resistance to these laws is a national affair. A friend from my field village sent me a short

[99] Each of these laws seeks to de-regulate agricultural markets in multiple ways: the first creates unregulated trade spaces outside of state-regulated markets; the second creates a framework for contract farming, again with little regulation, oversight and possibilities for legal redress; the third eliminates storage limits for essential commodities previously set by the government to control food prices, thus potentially allowing for hoarding and price inflation.

video depicting his participation in a tractor rally in the town of Ujjain to protest the laws. But Malwa is a somewhat different place – landholdings are smaller, support for the ruling Hindu nationalist party is strong, caste segregation and violence are normalized, patriarchal rules are strictly maintained. .

However, these protests – drawing over 300,000 people to the capital city – are evidence of continued investments in agriculture – that millions of farmers continue to be invested in a life on the land, in some form. At the same time, these protests show that there is much at stake in the battle against these laws – not just prices and markets, but also food security, land ownership, livelihood autonomy, nutritional value, collective responsibility, corporate accountability, ecological sustainability, caste equality and more. These are weighty issues, ones that weigh heavily on the present. Even if these laws are not passed (which seems increasingly unlikely), Indian agriculture remains at an impasse with farmers trapped within intersecting social, ecological and economic crises.

But there are many possible alternative futures – some that have been already imagined and articulated, some that are yet to be dreamed up. There are innumerable practical and radical solutions offered by farmers themselves alongside scholars, activists and policy-makers – changing licensing requirements to increase market buyers, creating farmer producer cooperatives, improving market infrastructure, promoting drought-resistant, locally appropriate and nutritious crops, setting up local processing units, redistributing land to the landless, strengthening insurance mechanisms, and most importantly, revaluing agriculture itself as a viable and sustainable livelihood, one that does not simply signal a past of poverty and want but rather promises a future of dignity and security.

While this dissertation does not claim to offer any neat solutions to an incredibly sociologically complex and geographical diverse agricultural crisis, I hope that it has drawn attention to the imaginations and practices of my farmer interlocutors as they attempt to better their lives and conjure other worlds on the land in the face of the stark injustices of the present and uncertainties of the future.

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