

The Journal of Peasant Studies

ISSN: 0306-6150 (Print) 1743-9361 (Online) Journal homepage: www.tandfonline.com/journals/fjps20

Playing with time: the temporalities of agrarian intensification under climatic instability

Marcus Taylor & Suhas Bhasme

To cite this article: Marcus Taylor & Suhas Bhasme (28 May 2026): Playing with time: the temporalities of agrarian intensification under climatic instability, The Journal of Peasant Studies, DOI: 10.1080/03066150.2026.2674708

To link to this article: https://doi.org/10.1080/03066150.2026.2674708

© 2026 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

Published online: 28 May 2026.

Submit your article to this journal

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=fjps20

THE JOURNAL OF PEASANT STUDIES
https://doi.org/10.1080/03066150.2026.2674708

Routledge
Taylor & Francis Group

OPEN ACCESS Check for updates

Playing with time: the temporalities of agrarian intensification under climatic instability

Marcus Taylor [a] and Suhas Bhasme [b]

[a]Global Development Studies, Queen's University, Kingston, Canada; [b]Tata Institute of Social Sciences, Mumbai, India

ABSTRACT

Agricultural practices across rural India have changed markedly, and the interlocking temporalities of agrarian life have grown in complexity. Fieldwork from rural Maharashtra demonstrates how farmers now seek to manage the temporal strains of increasingly unreliable seasonal patterns of weather alongside the cyclical rhythms of commodity markets, pressing obligations of credit and debt, the ebb and flow of labour availability and off-farm work. Working in contexts of highly uneven power relations, smallholder reproduction increasingly depends on the strategies employed to manage these temporal rhythms and ensure they do not fall out of synch.

ARTICLE HISTORY
Received 26 November 2025
Accepted 29 April 2026

KEYWORDS
Time; temporalities; agrarian studies; India; smallholder agriculture; Maharashtra; climate change

With his home nestled among seven acres of parched pre-monsoon fields located in the semi-arid region of Marathwada, Balaji used a cricket analogy to characterise how the dynamics of farming had changed. 'We farmers used to play test matches', he noted, 'but now we only play T20s'. He used this metaphor to capture a shift in the experience of time that had occurred across the preceding decades. Whereas a test match is a long-form game that plays out over an expansive five days with a singular outcome, the transition to playing T20s indicates a rapid-fire sequence of independent short-duration events, each one leading to a unique outcome and considerable potential for swings of fortune from one to the next. In the case at hand, Balaji was no longer focused on a season-long ('test match') cropping pattern involving one or two long duration crops. Rather, different portions of his land were devoted to a series of crops – cotton, maize, onions, etc. – each of which was planted and harvested according to distinct timelines ('T20s') and orientated towards different markets. As he made clear, under this intensification the temporal rhythms of agrarian production had changed with important impacts for livelihood strategies, rural hierarchies, and the resulting distribution of opportunities and risks.

CONTACT Marcus Taylor marcus.taylor@queensu.ca Global Development Studies, MacCorry A402, Queen's University, Kingston, ON K7L 3N6, Canada

© 2026 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

Notwithstanding Balaji's emphasis on shifting temporalities, agrarian studies as a field has rarely engaged the question of time in a systematic manner.[1] This is surprising given how deeply contemporary agriculture is embedded within diverse temporal cycles that are simultaneously natural and social. At one level, the primary and enduring temporality of agrarian life remains that of seasonality: the shifting patterns of precipitation, temperature and sunlight that express the embedded character of agricultural activities within the natural world. At the same time, agricultural practice reflects deeply socialised temporalities, including the various ways that smallholder agriculture is integrated with circuits of commercial and financial capital and the utilisation of labour.[2] Each of the latter impresses different temporal rhythms upon the character of production that frequently stand in tension with ecological timelines. Moreover, such tensions have become sharper as climate change collapses established patterns of seasonality in ways that undermine the ability of the past to inform the strategies of the future.

To help elucidate these dynamics, we adopt an agrarian political ecology approach to explore how new temporal dynamics have emerged within the processes of agricultural intensification and climatic change in rural Marathwada. Focusing on production dynamics, we chart the intersection of changing ecological rhythms with the conflicting timelines of market pressures, labour availability, scheduled debt repayments, and haphazard bureaucratic processes. In particular, we complement Bernstein's (2010) core questions of agrarian studies – 'who owns what; who does what; who gets what; and what do they do with it?' – with a vital addition: '*when* do people do what they do?'. We argue that the relative ability of farmers to 'play with time' – i.e. to exercise control over the temporal rhythms that compose agrarian life – is a key element of their strategies to secure agricultural accumulation and household reproduction. Farmers who can better synchronise cross-cutting temporal rhythms benefit from the arrival of income streams at the appropriate moments to match expenditures and seize new opportunities. For those who fail to manage the temporal incongruities of overlapping timelines, however, the outcome is frequently greater dependence on exploitative market and credit relations that successively undermine the sustained reproduction of the household. Placing such focus on agrarian temporalities therefore affords a deeper understanding of how agricultural intensification and climatic change are driving new dynamics of social differentiation.

The organisation of the paper is as follows. First, we provide an overview of our approach to agrarian temporalities, drawing on literature from agrarian political economy and landscape geographies to illustrate six contrasting temporal rhythms that permeate rural life, with rural India serving as the point of reference. Second, we provide an overview of the empirical basis of the paper, detailing the research undertaken within Maharashtra and the methodology used. Third, we explore how pressures to intensify agriculture are intersecting with climate change disruptions, with significant consequences for smallholder agriculture. We note how climate change empowers those with greater control over agrarian timelines—specifically finance and commercial

[1]New work on time in agrarian studies is presently emerging, including the important recent contributions by Gutkowski (2024), Chaudhuri and Gutkowski (2025) and Jakobsen, Barbesgaard, and Aguilar-Støen (2025).

[2]We use the term smallholder to broadly capture farmers that – under Indian census descriptions – would be in the marginal and small categories, i.e. up to 5 acres, notwithstanding that many within the semi-medium category (5-10 acres) face similar structural challenges, as highlighted within the paper.

capital—leading to new accumulation strategies and evolving class relationships. Finally, the paper illustrates these processes with two cases from rural Marathwada: (i) the rise of onion cultivation as a high-risk, high-reward cropping strategy that has changed the timelines of agricultural production in the region; and (ii) the rise of shade net agriculture, wherein relatively affluent classes of farmers are seeking to extract themselves from the capricious temporalities of seasonal climate through investments in new infrastructure. A short conclusion pulls these themes together, returning to the key question of how climate change is rewriting social structures across rural India.

Seasonality and the temporal rhythms of agrarian change

Despite the centrality of time within agrarian life, it remains a relatively under-studied and under-theorised component of agrarian studies. As Champion (2019) emphasises, time cannot be considered an object separate from human configurations but rather is always and everywhere a condition of life in the world. Similar to how we focus on materialities to understand material dynamics of the agrarian world, using the framework of temporalities to examine how time is socially organised forms an equivalent category of analysis. In this sense, temporalities are the patterned 'entangling of time with action' (Champion 2019, 247). These entanglements of time with action, however, occur not as a single, unitary temporal experience but rather as a series of overlapping temporalities, each with its unique rhythmic qualities that 'nest within each other and draw meaning from each other' (Bender 2002: S104). As the ecological anthropologist Tim Ingold notes, time is experienced as a dense fabric composed of the interweaving of many concurrent yet uneven cycles. The temporality of rural life, Ingold proceeds to argue, lies in the network of interrelations between the multiple rhythms from which it is constituted (Ingold 2000, 197). Similarly, Jane Guyer emphasised how a sharp focus on the varied and overlapping rhythmic structures of agrarian life are essential to analyse the dynamic forces of social change in agrarian communities caught between rising commercialisation and the expanding attention of a regulatory state (Guyer 1988, 256).

This emphasis on overlapping temporalities that have contrasting rhythms and spans is a useful means to advance our understanding of the temporal dynamics of agrarian change. Drawing upon the above literature, we argue that agrarian life is patterned through a series of linked micro-temporalities in which different social and environmental processes operate according to distinct temporal rhythms, each unfolding at a different pace with unique starting and ending points. In the Maharashtra context, these contrasting temporal rhythms cut across the social and ecological determinants of farming to include key processes such as the shifting patterns of seasonal precipitation and pests; the presence or absence of different categories of labourers; the volatile movements of market demand for crops; the wax and wane of opportunities for off-farm work; the gendered demands to match agricultural work with the reproduction of the household; the bureaucratic timelines of government schemes; and the temporal pressures of debt repayments or opportunities to extend credit. Agricultural production occurs at the intersection of these contrasting temporalities which stubbornly refuse to align. As a result, farmers of all class positions must actively manage the sequencing of different production processes – both on and off-farm – in ways that maximise the synchronisation of income

flows with expenditures, therein minimising the need to borrow money and reducing the risk of having to engage in distress sales. As one smallholder put it when asked about the biggest challenge to ensuring profitability season over season, 'timing is everything'. Success and failure in the era of 'T20 agriculture', he elaborated, revolves around the ability to synchronise tightly choreographed cropping strategies with dominant market trends, off-farm income sources, and the uncertain availability of agricultural labourers.

The relative ability of farmers to synchronise the temporal dimensions of agricultural production is, of course, highly socially determined. In this respect, we can usefully complement Bernstein's (2010) core questions of agrarian political economy – 'who owns what; who does what; who gets what; and what do they do with it?' – with a further element of analysis: '*when do people do what they do*?'. This draws our attention to how social power facilitates or restrains the ability of rural agents to play with time and align the temporal processes of agricultural production in ways that open opportunities and mitigate risks. First and foremost, the capacity for farmers to manage contrasting temporal rhythms is highly dependent on their physical, social and political assets that are unequally distributed along lines of class, caste, gender and other social cleavages. Access to these assets, however, is not static but dynamic over time (Mosse 2010). To get things *when they are needed* – whether they are inputs such as fertiliser or pesticides, the hiring of a labour group for harvesting, or agronomic advice and the repayment of state subsidies – requires farmers to engage in social relationships with a variety of agrarian actors, including input dealers, traders, local and migrant labourers, agricultural extension officers, government officers, etc. For commercial and financial capitalists in the agrarian sphere – such as input dealers, market traders and money lenders – knowing that farmers struggle to align agrarian temporalities is a significant determinant of their power to extract surpluses. Through interlinked markets, input dealers will advance farmers seeds and fertiliser at the start of a season but will then charge a markup on the total cost (Aga 2018); while moneylenders offer loans to tidy over temporal gaps throughout the season, yet at the cost of high interest rates (Taylor 2012). In this respect, temporalities are deeply interwoven throughout the workings of agrarian capitalism and the varied classes of capital strategically seek to leverage time as one dimension of their power over subordinate groups as we further draw out below.

To operationalise an agrarian temporalities framework for empirical analysis, it is helpful to pinpoint in more detail some of the key temporal rhythms that constitute agrarian life. On this basis we can illustrate six key sources of agrarian temporalities, each of which forms one part of the nested temporal rhythms (see Figure 1). We touch upon each of these in the following paragraphs before concretising them through illustrative case studies in the subsequent section.

Seasonality and agrarian capitalism

Seasonality is pivotal to agrarian temporalities because it establishes an overarching temporal register for the production of crops, livestock, fuel and fibre. Agrarian communities are deeply shaped by cyclical seasonal patterns of changing weather that stimulate biological life over the agrarian environment. From microbes to insects to plants to livestock, seasonality imposes definitive temporal cycles of growth, reproduction and ultimately biological decay and demise. In this respect, as David Ludden evocatively argued,

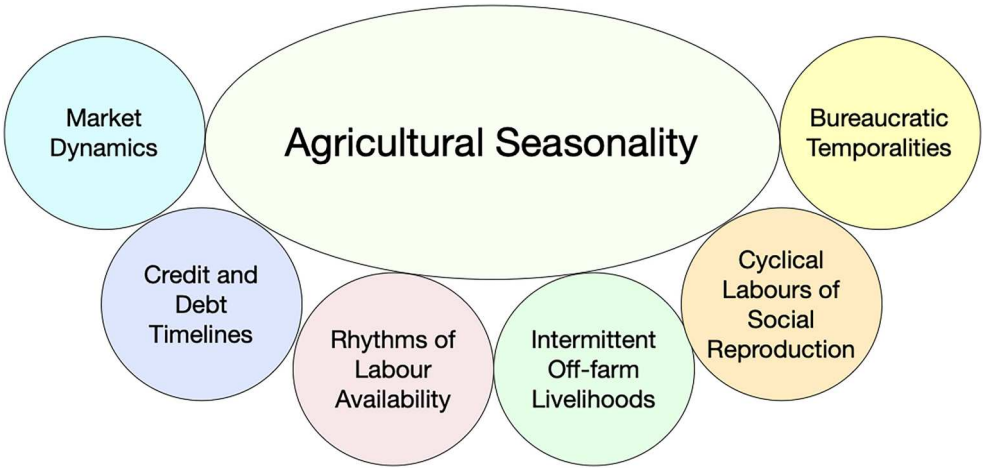


Figure 1. Agrarian temporalities.

farming is a critical point of contact between human powers and the changing natural environment – a process by which humanity 'sculpts the earth' (Ludden 1999, 19). This sculpting is evident in the ongoing transformation of the landscape through which farmers strive not only to organise the spatial distribution of species but also to manage their temporal arrangements. Working both individually and collectively, they seek to closely manage what grows where and when to provide a stream of food, fuel, fibre and cultural meaning from the land that can underscore subsistence needs and/or be turned into income streams. In articulating these themes, Ludden (1999, 21) provides a seminal account of how seasonality emerges as a pervasive measure of agrarian time:

> Agriculture's seasonality provides a temporal pattern of predictability, calculation, expectation, and planning for agrarian society as a whole. Seasonal uncertainty likewise provides a temporal framework in which to calculate risk and provisioning: it provides a temporal logic for social exertions of control, cooperation, solidarity, and initiatives against catastrophe.

It is seasonality – with its fluctuating climatic rhythms and patterns of biological growth and decline – that therefore provides the key temporal pattern through which agrarian social relations are embedded into nature and its climatic trends. Individually, all farming activities involve the performance of an integrated sequence of activities within a flow of events unfolding in real time and reacting to often capricious cycles and timelines of meteorological forces and biological processes (Glover 2018). Collectively, agricultural production depends on the social construction of supporting infrastructures, from terraces to irrigation systems, storage structures to transportation networks, that help manage the temporal dimensions of seasonality. As Barbara Bender provocatively framed it, the agrarian landscape itself is 'time materialising', creating a lived environment that is 'historically particular, imbricated in social relations and deeply political' (Bender 2002: S104). Such infrastructures bring seasonality to life over time: energising agricultural production while also habitually serving as an expression of rural hierarchies and inequities (Gidwani 2000).

Such seasonality has long been written into the cultural fabric of rural life wherein the cultural calendar is dotted by festivals and collective events that both mark the shift between seasons and seek to coordinate the synchronisation of social life with the rhythms of nature. In this manner, the manifestation of agrarian temporalities that underpin the seasonality of agriculture is deeply socialised. As Ludden again pointedly emphasises, each season, is 'a day in the life of all the many social institutions that intermingle with farming in agricultural territories' (1999, 21). This highlights how it is not just cropping patterns that are prepared around the temporal patterns of seasonality but the entire social edifice: land rentals and trading relationships are organised on this basis; the availability of agricultural labour has a cyclical ebb and flow; the extension of credit catalyses the beginning of an agricultural season while the repayment of debts punctuates its end.

This raises a key point: agrarian temporalities inherently integrate the tense intersection of seasonal rhythms with capitalist temporal logics wherein the ongoing transformation of agriculture under the expansion of capital imbues agrarian temporalities with new form and content. E.P. Thomson famously pondered the relationship between the restructuring of working habits and changes to the inward notation of time, as set within a purported transition to what he termed a 'mature industrial society' (Thompson 1967). Within this transition, the switch of agrarian labour from 'task orientation' towards abstract time measured in hours, minutes and seconds was presented as a watershed moment. Under task time, work was irregular and episodic: 'the performance of certain labours such as cutting the corn during harvest or milking cows was followed by periods of less intense work or even idleness until another bout of activity was dictated by the rhythms of nature' (Ogle 2019, 315). Through the emergence of capitalist social dynamics and the systemic pressures to continually speed up the turnover time of capital, time becomes necessity, and this transformation of social temporality prefigures the increasing domination of society by abstract capitalist time measured in seconds, minutes and hours (Postone 1993, 190). Across the rural sphere, as Timothy Ingold pointedly notes, time becomes currency that is spent, not passed (Ingold 1993).

Without doubt, Thompson's writings on time-discipline were shaped by the unique historical context of agrarian change in Britain that elicited what Robert Brenner termed a 'full transition to capitalism' exemplified by the replacement of subsistence farming and landed wealth with a competitive dynamic and class dynamic peculiar to Britain and certain other parts of western Europe (Brenner 2001, 231). Others have long noted how agrarian transitions have been experienced quite differently across institutional and social contexts, wherein the subsumption of labour under capital occurs in distinct and vernacular ways (Banaji 1977). Within the Maharashtra context, for example, the imposition of time-discipline arrives through the indirect yet incessant pressures of commercialisation to produce more and quicker in the pursuit of household reproduction over time. These pressures are delivered through market constraints manifest in an enduring squeeze upon simple reproduction with households often caught between rising costs of production versus volatile market prices for outputs (Das et al. 2017; Harriss-White 2008). On this basis, small-scale agriculture faces continuous pressures to both intensify and speed up production (Mann and Dickinson 1978), a point that Jakobsen, Barbesgaard, and Aguilar-Støen (2025) have elaborated in considerable detail with respect to the poultry industry.

The need to juggle immediate input expenditures with the uncertain timelines for subsequent incomes is a key temporal dynamic of agrarian India, providing the ground for a range of directly hierarchical social relationships centred on trade and debt between what Bernstein termed the diverse classes of capital and labour (Bernstein 2010). Importantly, relationships of credit/debt are central to the temporal workings of agricultural life whereby farmers who struggle to keep agrarian temporalities 'in synch' repeatedly must seek out credit as a temporary solution. In this respect, credit serves as an essential bridging tool for agrarian households seeking to knit together the diverging temporalities of income and expenditures stemming from distinct growing seasons, the uncertain availability of local agricultural labouring, the rhythms of demand for off-farm labour in rural and urban centres and the dynamics of petty commerce and production. Commonly used to buy inputs, invest in new infrastructures, or simply cover immediate consumption needs, credit helps farmers stretch time. It allows them flexibility between when various income streams arrive and when payments are due, which is essential for navigating the temporal incongruities of agrarian life (Guérin 2014). As Vijay Ramprasad (2019, 1297) expresses in his study of moneylending, credit assists smallholder farmers in navigating the 'temporal fractures' of expenses that do not align with the unpredictability of rains, incomes and formal provisioning from public sources.

At the same time, however, the extension of credit is also simultaneously the creation of debt that imposes a new temporal discipline upon the household. Taking on credit, whether to satisfy immediate consumption needs or to invest in productive activities, provides a temporal displacement of risk into the future that frequently comes at the cost of creating conduits of surplus extraction for the provider of credit (Taylor 2013). The compulsion upon smallholders to repeatedly borrow money to purchase agricultural inputs at the beginning of each season typically locks them into lopsided debt relations with landed and merchant capital, in which the power of credit is used to bind producers into relationships over time that manifestly favour the latter. Indeed, it is debt relations that smallholders most vividly identify as the hatchet that cuts down rural lives and livelihoods (Ramprasad 2019; Taylor and Bhasme 2021).

Labour timelines, off-farm livelihoods and social reproduction

These tensions are equally refracted into the mechanisms that smallholders deploy to source and utilise different labouring bodies at important moments across seasons. As Barbara Bender (2002) argued, the abstract impositions of capitalist time-discipline infuse not only the relationships of production but infiltrate a far wider network of social relationships incorporating gender, the family and the dynamics of household social reproduction (see also Adam 1995). Gendered divisions of time – in which the seasonal tasks of on-farm work are juxtaposed with the work of reproducing labouring bodies day in, day out over the course of the year – are core dynamics within the politics of agriculture labour. In the Indian context, these tensions have been insightfully captured in a growing range of time-use surveys that pinpoint the differentiated temporal demands upon women and men for unpaid reproductive labour (including childcare, cooking and cleaning, sewing, subsistence agriculture and livestock management), informal and off-farm paid work, and seasonal agricultural labours in home and neighbouring fields (Pattnaik and Lahiri-Dutt 2022; Rao et al. 2024; Vemireddy and Pingali 2021).

Significant unpaid labour is also required to ensure the reproduction of the household within the cultural context of the village, or what Shah and Lerche term the embedding of households within the social fabric of the community (Shah and Lerche 2020). As Rao and Raju (2020) point out, seasonal shifts in gendered labour requirements interface with the distribution of care tasks unevenly across social groups, leading to periods of particularly intense labour for rural women when the timelines of productive and social reproductive labours compound each other.

Such gendered divisions of work and time are reproduced at the field level. Agricultural production fundamentally relies upon an extensive choreography of farming activities occurring at different spatial scales over various temporal rhythms, including the close management of crops, seeds, pests, techniques, tools and materials (Glover 2018). To meet these demands, agriculture needs labour to work, yet the timelines of labour availability and scarcity are determined across multiple levels, ranging from household labour, through farmer reciprocity (often based on caste or kinship), through to the availability of hired regional or migrant workforces. Each of these sources of labour has its own periods of temporal availability and scarcity, and each is subject to power relations that influence its potential usage over time – all of which can conflict with the demands of cropping timelines. Indeed, the threat of withholding labour at pivotal moments can be a source of power for labour groups to bargain up wage rates. Managing these relationships to ensure timely access to labour is frequently reported by smallholder farmers as a significant concern. Evidently, struggles over *when* labour is available remain a fundamental element of class relations in the contemporary countryside. In response to both the rising costs and decreased availability of female labour groups, new forms of mechanisation and – in some regions – a partial switch away from labour intensive crops has occurred (Bansal 2025; Kumar 2025).

Last, but far from least, the intermittent rhythms of off-farm labour availability are pivotal to shaping the temporalities of households across rural India where off-farm employment is often informal and temporary (Rajkhowa and Qaim 2022). While standard labour market models have typically ignored the influence of seasonality (Feuerbacher et al. 2020), the ebb and flow of off-farm labour across the year is a fundamental determinant of household welfare and demonstrates cyclical properties that are closely shaped by divisions of class, caste, gender and age. Specifically, the availability of off-farm waged employment is articulated between the seasonal rhythms that shape the demand for agricultural waged labour and those of capital that drive trends in urban employment. With respect to the former, agricultural migrant workers with no or little land have limited control over time and often find themselves 'chasing the seasons' whereby they move from region to region to time their arrival strategically with peak work seasons such as transplanting and/or harvesting (Breman 1994; Longhurst and Pacey 1981). Households with larger land holdings and irrigation facilities are less likely to pursue such itinerant livelihoods, focusing instead on seasonally available regional agricultural labour and – when necessary – employment provided by the national rural employment guarantee (MGNREGA) (Nagaraj et al. 2018). As highlighted above, such temporal patterns of off-farm labour are highly gendered, with migration for work imparting complex impacts upon the division of labour within both household and home agriculture (Chandrasekhar, Sahoo, and Swaminathan 2022).

For off-farm work in urban sectors, the influence of seasonality is less direct, although there remain periods of peak demand across labour-intensive segments: construction jobs are more prevalent outside of the rainy season; the number of service jobs increases in festival periods, etc. The pervasive informality of urban employment accentuates these rhythms, because labour can be drawn in and released as per the needs of urban capital. For example, the use of migrant workers in the construction sector – a major source of employment for low class and caste rural migrants – includes both long-term circular workers and seasonal workers. The former often reside semi-permanently in urban regions, returning periodically to their places of origin whereas the latter work for between four and nine months in a year. In peak construction periods, casualised labour is sourced in for just 50 to 60 days (Srivastava 2019). For most low-class and low-caste households, for whom full-time and salaried off-farm positions are scarce, synchronising the availability of intermittent urban and rural waged labour is pivotal to household reproduction (Rai 2020). It is not just the overall income from waged labour that is important for smallholder households, but the specific moments at which such incomes arrive over the course of a year and how these are articulated with the timing of other costs and expenditures (Bakshi and Modak 2017). Notably, these timelines must fit into inter-generational cycles, with many farmers commenting on the importance of having cash available for landmark coming-of-age celebrations, particularly marriages where large dowry payments can be required.

Bureaucratic temporalities

The temporal demands of smallholder agriculture also underwrite the nature of farmers' relationship with the state. Engagement with state agencies is a standard feature of Indian agrarian environments, ranging from political engagement over land and other rights claims (Nielsen 2018), through to the range of rural development schemes that variously provide agricultural advice, training or subsidised inputs. And yet, as any smallholder applicant to a government scheme will readily attest, the timelines of the Indian bureaucracy are as capricious as those of a changing climate. Moreover, the temporal experience of engaging with the state varies strongly across class, caste and gender divides. As Stuart Corbridge pointedly remarked in his seminal writing about accessing bureaucratic services, 'waiting is something poor people do' (Corbridge 2004, 184). The gears of Indian bureaucracy move at very different speeds depending on the socio-economic character of the individual who is engaging it, creating highly differentiated experiences of bureaucratic time.

This politics of waiting has strong socio-economic implications. Many of the subsidised input schemes that we have encountered – the purchase of farm ponds, drip irrigation, tractors and other machinery, for example – require upfront payment from the farmer to be compensated on completion of the bureaucratic process. The latter, however, can take periods lasting from months to years, meaning that there are strong constraints upon those unable to afford the upfront payments. In contrast, those able to wait out bureaucratic temporalities – or hasten them through the mobilisation of contacts within government agencies – are well placed to reap considerable rewards. Indeed, there is a growth industry in brokers: almost exclusively men from relatively higher agrarian classes who use their education, class and caste position and political linkages to get

things done at a pace that eludes most smallholders (Pattenden 2011). In short, the ability to speed up the bureaucratic temporality becomes an accumulation strategy for this broker class (Taylor and Bhasme 2025).

Researching the temporal landscapes of Marathwada

The empirical research underpinning this conceptualisation of agrarian temporalities was based on a study of smallholder livelihoods and cultivation strategies under deepening agricultural commercialisation in the district of Vaijapur, Maharashtra (see Figure 2). Vaijapur is a small agricultural market town surrounded by rural agricultural regions in the semi-arid geographical region known as Marathwada. Often labelled as a drought-prone region (Shah et al. 2021), the villages surrounding Vaijapur are largely reliant on rainfed agriculture supplemented with irrigation from wells, borewells, ponds and – in some areas – canals. Typical cropping patterns encompass the primary cash crops of cotton, maize, onions and – in those parts served by canal irrigation – sugar cane. As we elaborate below, the cultivation of onions has expanded significantly over the past five years, representing something of a boom crop, as has occurred in other parts of central and northern India (Matthan 2022). Less common yet occasionally present are the cash crops of soybean, ginger, sweet orange (*mosambi*) and mulberry for silk. The primary food crops that double as subsistence items are pulses (*tur*), pearl millet (*bajri*) and sorghum (*jyori*). Small vegetable gardens are also a standard addition to household agriculture, as are small livestock holdings including oxen, milk cattle, goats and chickens.



Figure 2. Location of Vaijapur in Maharashtra, India.

As is common across rural India, few households are totally dependent on farming. While many small and semi-medium landholding farmers and family members still serve as hired agricultural labourers, this is a declining practice occurring only at certain peak times of the season, particularly when migrant labour is not available (see below). Women from smallholder households are more likely to be hired as agricultural labourers, conforming to prevailing gendered divisions of agricultural labour, including a significantly lower wage rate (R250) compared to men. Other common livelihood activities include seeking manual labour opportunities in Vaijapur and other regional cities, with close to half of male members involved in construction such as plastering and roofing. These occupations earn R800 per day, which is considerably above the R400 daily rate for male agricultural labour. Equally, many household members are involved in service sector work – from domestic labour to commercial activities – focused in the March-June dry period before the arrival of the monsoon. Lastly, some households report undertaking industrial labour, particularly at local sugar factories. Collectively, these activities provide vital income, particularly for farmers with under 10 acres where it often outweighs the returns to agriculture. However, they rarely provide year-round employment and therefore exist as part of a temporal patchwork of activities integrated around the yearly agricultural calendar (Narwade 2024).

Our research was conducted in three villages located on different sides of the town, each with slightly different profiles that collectively gave a strong representation of the prevailing social and agroecological contexts (see Figure 3). The first village – Rotegaon – lies north of Vaijapur and is relatively proximate to a small seasonal lake that serves to recharge groundwater levels – albeit unevenly – across the village topography. The second – Ladgaon – lies south of Vaijapur and is notable for its lands being the

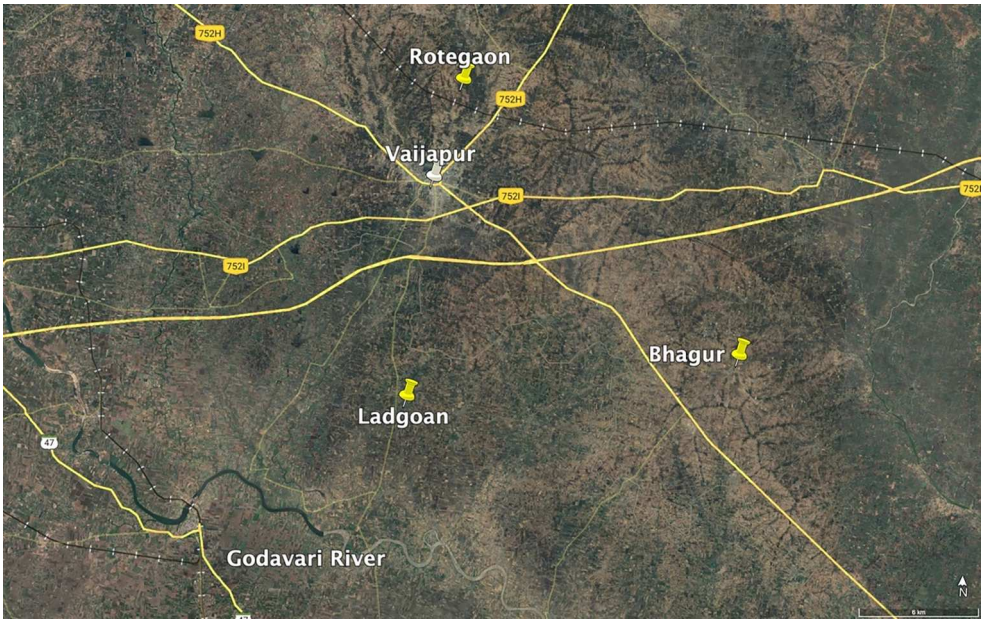


Figure 3. Map of Vaijapur study area.

intermittent recipient of waters from the Nandur Madhyameshwar canal system fed by the Godavari River. This enables the cultivation of sugar cane in those parts of the village proximate to irrigation channels. The third village – Bhagur – lies to the southeast of Vaijapur and has no supplemental irrigation sources beyond rainfed agriculture and borewells.

In each village, our research methodology centred upon conducting detailed semi-structured interviews with farmers – primarily but not exclusively those with small and semi-medium landholdings – alongside regional input dealers, irrigation equipment dealers, traders, commodity market regulators, agricultural extension officers and government officials. Most of the farmers we interviewed were members of the Maratha caste, with scheduled caste households having moved out of agriculture in these villages owing to severe land constraints. Having conducted the initial research at the end of the summer immediately prior to the monsoon season in 2023, farmers were typically available and willing to talk as they awaited the imminent arrival of the rains. A smaller set of follow-up interviews was then conducted at the end of the kharif agricultural season in 2024.

Farmer interviews occurred in their homes or surrounding fields, with the interviews structured to discuss general household agricultural characteristics and livelihood dynamics. Issues of time were not asked directly but surfaced repeatedly in farmer responses when asked about the dynamics of agrarian life, including landholdings and tenure arrangements, crops grown, inputs used, sources of labour, access to water, market conditions, credit and debt relations, experience with government projects, availability of agricultural extension services, off-farm livelihood activities, and changing climate and environmental conditions. While structured to ensure that all topics were addressed in each interview, we gave considerable leeway to farmers, which enabled them to elaborate upon the key challenges and opportunities they most wanted to address. Interviews typically lasted 30 min, with some taking over an hour. The interview sample was random in that interviews snowballed by walking from one side of the village agricultural lands to the other and the range of farmers interviewed was broadly representative of prevailing landholding trends (see Table 1).

When multiple farmers wished to talk simultaneously, we held spontaneous focus group discussions in which farmers collectively discussed the above themes with the authors. These group discussions were wide ranging in scope and explored collective experiences. While less structured, they were useful in providing collective accounts of the character and dynamics of agrarian change within the region. Additional interviews were conducted with traders, dealers, commodity market regulators and local agricultural extension officers to supplement our primary focus on direct producers (see Table 2).

Table 1. Composition of interviews according to land holdings.

Category	Landholding (acres)	Number of farmers interviewed
Marginal	0 to 2.5	4
Small	2.5 to 5	11
Semi-medium	5 to 10	14
Medium	10 to 25	6
Large	Over 25	2
Unclear		3
Total		40

Table 2. List of total interviews.

Interview category	Individual interviews	Focus groups
Farmers	40	5
Market Traders	1	1
Agricultural Input Dealers	2	
Irrigation Equipment Dealers	1	
Commodity Market Regulators		1
District Agricultural Officers	2	
Regional Superintendent of Agriculture	1	

While this methodology enables us to speak confidently about the agrarian political economy of the region and smallholder experiences, two limitations are clear. First, in conducting interviews in the fields with landholders of various sizes, our sample is not well attuned to accessing the experiences of landless labourers or those with marginal plots who were less present. Second, the research also encountered difficulties in interviewing female household members to better understand their roles and responsibilities within agricultural production, off-farm work and social reproduction. While female household members were often present when interviews took place, interviews operated within a masculinised space that reflected gendered power relations in the household, alongside the fact that both interviewers were male researchers. Female household members only occasionally contributed to such conversations given prevailing gendered norms. An alternative methodology would be necessary to more fully delineate the gendered experiences of shifting temporalities as expressed through divisions of labour, rights and responsibilities, including for social reproduction tasks.

Climate change and the collapse of seasonality in rural Marathwada

As the above section highlighted, farmers reported an increasing intensity of agricultural production, manifested in the idea of 'T20 agriculture'. This intensive, heavily commercialised agriculture depends on the parallel provisioning of chemicals and irrigation. On the one hand, farmers are using increasing amounts of fertiliser and pesticides to manage three crops across the season. As one smallholder commented:

> It is habitual now to use these chemicals – fertilisers and pesticides – because they get their results in a very short time. It's all about time!

Secondly, these intensification trends are also fashioned by the growing presence of wells (dugwells and borewells) alongside the construction of private farm ponds that are aimed at providing the 'water on demand' to enable three crops a season (Prasad, Damani, and Sohoni 2022). Irrigation structures are essential to underpin the choreography of water use required for such cropping strategies, yet are privately owned, often sourced through state subsidies, unevenly distributed, and prone to failure in years of drought. Despite such challenges, however, most farmers – particularly those with small and semi-medium landholdings – now work through a sequence of cropping starting with cotton in June, moving to maize or jowar in October, and culminating with the planting of onions in October, depending on whether they think they have enough water left in their wells and/or farm ponds. Overwhelmingly, farmers with under 10 acres reported a common set of problems – including the increasing pest presence across

cotton, maize and onion crops leading to increased spraying; the stagnant returns to agricultural production in the context of growing cost pressures; the uncertainties of groundwater irrigation, and a dependence upon migrant labour as the means to attain workers at key points in the agricultural season.

Alongside discussions of agricultural intensification, farmers of all classes referred to the increasing unpredictability of meteorological trends. While such farmers understand intimately that weather has always been highly variable in semi-arid climates prone to drought and other cyclical extremes, they also depend upon making expectations about a climate that was arguably 'predictably unpredictable'. David Ludden again illustrates the importance of seasonality within the context of agrarian India:

> Understanding today's condition always requires dredging up the past, to see what went right or wrong … The cyclical quality of seasons thus encourages thinking about the future and the past, together, and calculations of past yield for making future oriented decisions. Family incomes, state revenues, and capitalist profit depend on the predictability and the unpredictability of price movements across the seasons.

Central to the shifting experience of time in rural spaces such as Marathwada, however, is that seasonality and its expectations of relatively consistent climatic patterns over time are rupturing under climatic change.[3] From our interviews, it became clear that the predictable unpredictability of seasons past – that is the relatively manageable and expected occurrence of 'unseasonal' or extreme weather over a five-year span – is being replaced by unpredictable unpredictability wherein the increasing frequency of extreme weather events collapses the temporal expectations of seasonality. While farmers did not refer to these variations as climate change, they highlighted directly a range of climatic uncertainties as undermining established temporal patterns of weather and thereby crop production. First, the onset of the monsoon is now increasingly fickle, arriving in force only to retreat, pause, and then return with fury, creating both scarcity and inundation at unwanted times. Second, incidences of drought are both more common and increasingly severe, occurring at different moments of the growing season. Third, heat stress – particularly in the harvesting season – is becoming more common, with high temperatures placing severe stress on crops and increasing post-harvest losses through perishability. Fourth, unseasonal rains are now increasingly common. Periods of the year in which the cropping calendar expects long dry spells for harvesting and drying are now punctuated by unanticipated rainfall and damaging storms, again leading to pre- and post-harvest losses. Finally, extreme rainfall threatens to obliterate crops through inundation, as occurred in the region in the 2025 late monsoon season, which led to the mass destruction of the onion seedlings expected to be planted in the following summer period.

These farmer-reported phenomena correlate well with scientific observations of climate change, which emphasises that overall levels of annual rainfall have remained consistent; yet, the timing and intensity of rains have become erratic (Jalan and Lakshmikantha 2024; Swain et al. 2022). While the average rainfall over the season may remain relatively constant in the Marathwada region when viewed over a longer timeframe, it is the seasonally specific patterns of precipitation and their synchronisation with

[3]We acknowledge that ideally the temporal dimensions of agrarian life would be analysed with a closer integration of the spatial and scalar dimensions (May and Thrift 2001). However, for this paper we have deliberately sought to draw out the temporal aspects as they are less well captured in the current literature.

agricultural production that matter for farmers. Importantly, they highlighted how the past is no longer a strong predictor of future meteorological trends, and they are increasingly unable to deal with weather extremes that defy previous expectations. As a result, small and semi-medium farmers – typically with fewer assets and less access to off-farm livelihoods – overwhelmingly felt that they were gambling with production strategies that seek to intensify production precisely as the framework of seasonality was collapsing around them. For larger farmers, opportunities to mitigate risks and advance accumulation strategies still exist. Such farmers are embracing opportunities often facilitated by their ability to secure high levels of state subsidisation to invest in new 'climate-resilient' infrastructures. In this manner, agricultural intensification, climatic change and state policy are driving forward new patterns of rural social differentiation (cf. Aslany and Brincat 2021; Taylor 2015). What follows are two illustrative examples of these processes.

Playing with time 1: the temporalities of onion production

In each of our studied villages, the transition to an intensive 'T20' form of agriculture has largely occurred through the widespread planting of summer onion as a third crop following cotton and maize. Similar to how Tanya Matthan (2022) has described the speculative political economy of onion production in Maydha Pradesh, farmers in the Marathwada region have adopted onion cultivation as a high-risk, high-reward strategy. Onions require high upfront costs, with farmers reporting typical expenditures of around R550 per quintal, including planting, spraying and weeding, and harvesting at the end of the season. When including transportation and other market costs, farmers suggested that they required a minimum sale price of R700 per quintal to break even, whereas a market price of R1300-1500 offered a reasonable return on investment. If market prices began to surge, a price of R3000 per quintal would generate considerable profit, while farmers reported prices as high as R5,000-7,000 at the height of the 2018 boom. For those able to time their sales when the market is at such levels, the impact can be transformational. Farmers who shifted production early enough to benefit from the 2018 boom in onion prices, for instance, reported one-time incomes that enabled them to invest in further land or equipment such as tractors. For most farmers, however, such returns on investment seem distant. Rather, the cropping strategy anticipates relatively low prices year on year that are only moderately above the break-even point, punctuated by occasional years when the market surges. It is the prospect of these 'win big' years that keeps farmers cultivating onions year upon year, although – as we set out below – their opportunities to win big depend closely on their ability to manage the varied contrasting temporalities of production.

As a dry season crop, onion is normally planted after the monsoon crops are cleared and is irrigated by well water replenished by the monsoon rains. Cultivated outside of the standard rainy season, onion requires consistent irrigation for over three months. The intensification of agriculture is therefore highly dependent on new sources of irrigation including dug wells, borewells and – more recently – farm ponds. There is good reason for sequencing of onion production within the dry season with choreographed applications of irrigation waters: if onions are exposed to rain in their advanced growth stage, they start to spoil from the inside out through 'twister disease,' while increased

humidity also increases the presence of onion thrips (*mawa*) that impede plant growth. Accordingly, during the harvest season, farmers nervously scan the skies and the weather apps on their cellphones' forecasts for signs of unseasonal rain, albeit often complaining about the lack of accuracy of the latter. Once the onion shoots start to fall in March, signifying the maturation of the crop, farmers have just two days to harvest the crop and begin to dry it before the risk of spoilage and fungal outbreaks accentuate.

To harvest a field requires a team of around 10 labourers working throughout the day, meaning that the demand for labour rises dramatically at this point in the choreography of cultivation. With a bottleneck on labour demand, however, farmers are unevenly able to exercise control over when workers can be sourced into their fields. Given the reduced presence of local agricultural labour and the commonly expressed sentiment that local labourers are less time-disciplined, most of the onion harvesting work in central Maharashtra is now undertaken by groups of land-poor migrant labourers. These labour groups from Uttar Pradesh, Bihar and other northern states are recruited and managed by large landholders who ensure that the migrants harvest their fields first. Once their onions have been cleared and the harvest safely stored, large landholders then assume the role of labour sub-contractors who arrange for the migrants to work in groups of ten for smallholders in the region. Such arrangements for sourcing labour are tightly networked around relationships of caste, class, gender and kinship (see Iyer and Rao 2024; Pattenden 2016). Farmers who can secure greater status within these networks – often by cultivating reciprocity with larger landholders through in-kind payments and political allegiances – will be better positioned to access the migrants and expedite their labour. Those excluded will have to watch others have their fields cleared first and hope that unseasonal rains do not arrive in the coming days.

At this bottleneck moment within the labour supply, the price for labour can rise significantly: moving from a more standard R7-8000 per day for a labour group towards a reported high of R12,000. This is a relatively rare example of when labour can use the temporal choreography of harvesting to its advantage. The prospect of delays owing to labour constraints raises the spectre of post-harvest losses should rainfall occur. Smallholders repeatedly noted that the imposition of getting things done on time tended to override immediate financial concerns. As one smallholder highlighted:

> The issue is not about the money. It's about timing. You need to do planting and harvesting on time. So, considering that priority, we don't really think about money at that particular moment.

The dangers of delaying harvesting and encountering the now common 'unseasonal' rains are severe. Interviewing smallholders in the regional onion market in the month following harvesting, many noted how prices were at loss-making levels. With unseasonal rains having damaged some of the crops in the region, traders were using the possibility of water damage to drive down the prices across the market. Many sellers reported loss-making prices of R350-R400, i.e. well under the cost price of production. Another smallholder seller noted that 50 percent of his crop was spoiled and lost prior to harvest through rain and hailstorms, while the remainder was selling at R350 owing to the suspicion that it had become too damp and would spoil quickly. When questioned about whether they would continue to cultivate onion in the following year, such farmers typically responded that they had little choice: although other crops might be more

consistent, they did not offer the same chance of a market boom with prices rising to a level that could offset costs and debts on a significant scale. Playing the onion game, several medium-sized farmers noted, was a four-year commitment in which one boom year might provide the opportunity to compensate for modest prices or losses over the other three years.

With the threat of perishability having potential long-term implications, getting the onions out of the ground in a timely manner is an imperative for this kind of cropping strategy. For those that do manage to secure the harvest before rains, however, a new temporality emerges. The key motivation for farmers to cultivate onions is not just to secure high prices. Rather, onions serve as a store of value that can be sold intermittently over the following seasons to help synchronise income streams with the emergence of future costs. Taking onions to the spot market in Vaijapur was one means of generating cash-in-hand to cover all manner of household and agricultural expenditures. As a result, storing onions is vital to maximise the potential to sell when the price is high and/or when the household requires small injections of cash to cover other expenses. The market timelines here are important: onions from producers in Karnataka tend to flood the market in February, while producers from other parts of Maharashtra enter the market in March. As a result, Marathwada farmers know that the longer they can defer sales into the months that follow, the higher prices will be.

This temporal process came into play during the research period: while onion prices were extremely low in June when our interviews were conducted, by November they had tripled, reaching a three-year high retail price that afforded significant returns to those who had been able to defer sales. The key variable here, however, is storage which has become more important under shifting climatic conditions. Effective storage facilities that preserve the crop are the key to synchronising timelines and selling at peak periods when prices are highest. While all onion-cultivating farmers that we interviewed had storage facilities of some description, they varied considerably in both size and their capacity to shelter onions from the twin threats of rainwater seepage and thermal stress during heatwaves. To build a storage shed first requires that farmers first sacrifice around half an acre of land – a difficult proposition for land-poor households unwilling to reduce their productive capacity. It then costs anywhere from ₹2.5 lakh to 4 lakh (US$2.8k to 4.8k) to construct, depending on the size and quality of the facility. Bigger storage facilities provide three key advantages: first, a large space to store more; second, the required ventilation to keep the onions fresh for a longer time; and third, the required space for farmers to monitor the condition of the onions. The latter is fundamental to the timely management of pests and to quickly remove produce that shows signs of spoilage before it spreads (see Image 1). Equally, more elaborate and expensive forms of wire meshing help to reduce losses to rodents.

For farmers with the best facilities, onions can be stored for between six months and – depending on temperatures and humidity – for as much as a year. This enables them to strategically release onions into target market peaks and avoid periods of over-production wherein smallholders flood the market in the months immediately after harvesting. Such farmers present a greater ability to 'play with time' in ways that provide compounding advantages for accumulation.

In contrast, most smallholders make do with the lowest-cost options that are smaller and have low roofs made of tin that conduct heat, thereby accentuating heat stress.



Image 1. Mid-range onion storage shed with moderate ability to monitor the produce and shelter it from rain and heat.

This is despite the presence of several government schemes to subsidise the construction of storage facilities. In part, this is because bureaucratic temporalities greatly constrain smallholders. First, applications for subsidies can only be submitted following the construction of the storage shed meaning that all costs are upfront. The subsequent timelines for repayment vary considerably – with farmers reporting waits between 2 months and a full year, with six months seeming typical. Clearly, advancing the full upfront costs for this kind of investment is extremely difficult for small and semi-medium farmers with limited access to formal credit facilities and facing the uncertainties of Indian bureaucratic timelines. Secondly, while subsidies vary according to the specific scheme, farmers reported that they typically ranged from R80,000 to R90,000. Even for a smaller shed, these subsidies cover one half of the upfront costs making this infrastructure a significant investment.

The risks of not investing, however, are tangible. Smallholders unable to adequately protect their crop and who encounter widespread signs of emerging spoilage need to sell immediately before the latter spreads throughout the onions (see Image 2). This phenomenon is becoming increasingly prevalent as extreme rains seep into storage shelters or accentuate humidity, while heatwaves in May and June accelerate the timeline for perishability. As with onions impacted by unseasonal rains, those facing gathering spoilage must salvage part of their crop by taking loss-making prices in the local spot market. Not only do smallholders lose money under distress sale prices, but they are also denied the ability to periodically sell onions across the coming months to meet the ensuing season's agricultural expenses. Deprived of onions as a store of value, smallholders must then find other sources for credit to cover seasonal expenses, pushing them towards the ranks of moneylenders, traders, large landholders and microcredit providers and escalating the potential for debt traps.



Image 2. Sorting through onions that have been spoiled through heat stress within a makeshift storage structure.

Playing with time 2: shade nets and the escape from seasonality

If onion cultivation is a predominant form of T20-agriculture for smallholders within rural Maharashtra, a more exclusive transformation is occurring through the introduction of shade net agriculture. Shade nets are large tent-like structures that provide a more controlled climate for production by shielding crops from direct exposure to meteorological forces (see Image 3). Across all three of our study villages, the growing presence of shade nets was a conspicuous addition to the fields. Many had arrived through various government programs – not least POCRA, the Program on Climate Resilient Agriculture – which provided large subsidies for the infrastructure promoting a transition to higher-value cropping patterns. Once established, shade net agriculture is geared to the almost continuous production of horticultural crops such as peppers, cauliflower, cucumbers and other market vegetables alongside flower production. For those able to participate, it represents the Indian Premier League of T20 agriculture.

The importance of shade nets for farmers is that they allow for a new temporality of cropping patterns. Farmers strategically plant successive cycles of crops in a highly coordinated manner to maximise aggregate production and turnover times (cf. Kumar 2025).



Image 3. Flower and vegetable production under shade net, Vaijapur district, November 2024.

While other cultivators are dealing with the collapse of seasonality, those able to embrace shade-net agriculture are seeking to escape it. Creating your own micro-climate to pursue agriculture relatively unencumbered by seasonality, however, is an expensive business and requires high upfront costs to install the specialised infrastructures needed for controlled production and irrigation. On one side, shade net agriculture is highly dependent on the timely provisioning of external inputs including water, fertilisers and pesticides. Typically, integrated sprinkler irrigation systems deliver on-demand water from above in complement to a regimented regime of fertiliser addition that occurs every three days. Concurrently, intensive pesticide spraying – typically every five to six days – is required to hold back a voracious range of insects that proliferate in the closed space.

Irrigation is therefore critical for such models of agriculture that are dependent upon closely choreographed applications of water. This level of precision is attainable only for those with a relatively sophisticated set of integrated irrigation infrastructures, typically attained through a mix of pipelines, borewells, dug wells and farm ponds that create personal reservoirs for use in the dry season (see Image 4). This investment requires not only upfront capital but also spare land and political influence. Medium and large farmers increasingly construct plastic-lined, 'farm ponds' the size of swimming pools to trap water in the monsoon season for use in the dry season (Yadav et al. 2024). While these farm ponds have been heavily promoted and subsidised by varied government projects, the upfront costs – around ₹3.5 lakh (US$ 3.9k) for a 100 × 100 pond – remain a definitive barrier to smallholders given that the bureaucratic timelines for subsidy repayment remain long and uncertain. As noted above, well-connected farmers who are part of the village elite reported how they mobilise influence within the bureaucratic system to ensure timely payment of subsidies, whereas most smallholders face a litany of delays greased only by the payment of strategic bribes.



Image 4. Private farm pond in Vaijapur district, June 2023.

Notwithstanding these high upfront and operational costs, shade net agriculture is proving extremely profitable for early adopters. Farmers reported that one acre of shade-net agriculture can generate a profit equivalent to more than 12 acres of typical production of cotton, maize, lentils and other standard crops grown across the region. In this manner, the rise of shade-net agriculture both reflects and reinforces patterns of rural social differentiation. Only a minority of relatively affluent and politically connected farmers can afford the investment required and mobilise the bureaucratic system to ensure that the subsidy claim does not suffer ongoing delays. Even with government subsidies through programs like POCRA potentially covering more than half of the overall expenditure, the upfront costs of around ₹17lakh (US$20,000) are far beyond the reach of almost all smallholders in the region.

Shade net agriculture currently represents the forefront of agricultural accumulation strategies in villages such as the ones we studied. While not without risks, they enable an intensity of cropping that is highly remunerative by speeding up the production process. Perhaps expectedly, the majority of farmers with large shade nets were village elites, marked by their entrance into merchant capital – input shops – alongside farming activities (Aga 2018). They also tended to be tightly connected to political positions within the villages and the first to become aware of and utilise government

schemes such as POCRA, through which these families secure significant subsidies for their infrastructural investments. At the other end of the spectrum, farmers noted that they were excluded from such schemes. As one smallholder with just three acres of land wryly noted, 'Most of the time with these programs, the benefits have already been appropriated by the rich farmers before the poor come to know about them'.

Conclusions

This paper has presented an approach that foregrounds the study agrarian temporalities in contemporary India to enhance our understanding of agrarian dynamics and processes of social differentiation. For governmental purposes, the very idea of rural development – which various tiers of the Indian state continue to support through schemes aimed at increasing agricultural productivity and diversifying livelihoods – has long provided an overarching yet abstract temporality and meta-narrative of agrarian change (Chakrabarty 2002). In the Marathwada region, however, this narrative is unsettled by the twin forces of climatic change and escalating cost pressures upon smallholder agriculture. In response, the state has pivoted towards emphasising 'climate resilience' alongside its longstanding rhetoric of agricultural intensification. This new ideal of a resilient farmer is one who is nimble enough to create a fast-paced and closely synchronised cross-seasonal cropping strategy to deliver outputs and associated income streams that can then be invested back into inputs for the succeeding crops and/or to pay back previous loans. To ensure productivity at the field level, timely infusions of water must be available on demand using appropriate combinations of rainfall, groundwater, dug wells, farm ponds, or irrigation drawn from canal systems. Labour – sourced from within the household, locally hired, and/or through itinerant migrant workforces – must also be accessible at critical moments of the season for ploughing, planting, weeding, spraying and harvesting to ensure minimal disruption and avoid losses. At the close of the season, crops should be harvested, stored and subsequently sold at moments when markets are trending upwards and demand is high. Finally, the farmer would avail themselves of timely subsidies and provision of infrastructure to expand or consolidate resilient production through navigating the bureaucratic processes without getting stuck in its interminable timelines. As they expanded their income and asset base, the farmer would then proceed to invest in technologies and infrastructure to transition into a precision agriculture regime aimed towards the cultivation of higher-value crops.

As the above research suggests, however, this ideal farmer who is able to perform the right actions at precisely the right times is far from the norm. On the one hand, the inequitable distribution of assets and household's lopsided relationships with commercial and financial capital precludes many from exercising sufficient control over agricultural temporalities without incurring significant risk. On the other, climate change is disrupting the seasonal timelines of agricultural production in complex and challenging ways. From too little rain to too much rain, too much heat to not hot enough, the ways in which weather has been bound into agrarian landscapes are coming unstuck.

The focus on temporality helps capture this disruption in two key ways. First, it draws close attention to how time and agrarian power are closely related. Asking 'when people do what they do' adds considerable nuance to Bernstein's heuristic device of 'who owns

what; who does what; who gets what; and what do they do with it?'. Classes of labour can often be described as 'time poor' not simply because they work long hours, but also because they exercise little control over the temporal rhythms that constitute agrarian life. Second, the focus on temporality draws attention to how the past, present and future relate to one another, wherein people's experience and expectations are established 'through repetition and cyclical temporalities or ruptured and discontinuous temporalities' (Ogle 2019, 314). Whereas seasonality once provided a relatively consistent rhythm to the meteorological and social patterns of agrarian life, under climatic change the past is now no longer an adequate guide to the future, therein amplifying and redistributing risks across the landscape. Drawing together these two elements, we can then better understand why contemporary climatic change is such a powerful agent within agrarian change: it disrupts seasonality – the structuring temporal fabric of agrarian time – from within while simultaneously empowering those with greater ability to 'play with time'. Fundamentally, as discussed through the case studies above, this process by which weather becomes untethered from established and deeply socialised temporal patterns opens new accumulation strategies for some, at the cost of increased insecurity and deep crises of social reproduction for others.

Acknowledgements

The authors kindly thank Rachel Bezner Kerr and Arianna Tozzi for invitations to Cornell and Manchester to present these ideas on agrarian temporalities in 2023 and 2025. John Harriss, Ashwin Subramanian, Barbra Harriss-White all provided insightful feedback on earlier drafts of the manuscript, as did V.K. Ramachandra and other participants at the Foundation of Agrarian Studies conference in Kerala, 2025. Many thanks to all three anonymous reviewers for constructive critical engagements, and to the many farmers in Vaijapur who shared their experiences. Satish Rangari provided invaluable logistical and linguistic support throughout the fieldwork.

Author contributions

CRediT: **Marcus Taylor:** Conceptualization, Funding acquisition, Investigation, Writing – original draft, Writing – review & editing; **Suhas Bhasme:** Conceptualization, Investigation, Writing – original draft, Writing – review & editing.

Notes on contributors

Marcus Taylor is a Professor in the Department of Global Development Studies at Queen's University, Canada.

Suhas Bhasme is an Assistant Professor in the School of Habitat Studies, Tata Institute of Social Sciences, Mumbai, India.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by Social Sciences and Humanities Research Council.

ORCID

Marcus Taylor http://orcid.org/0000-0003-0944-601X
Suhas Bhasme http://orcid.org/0000-0003-4102-0035

References

Adam, B. 1995. *Timewatch: The Social Analysis of Time*. Cambridge: Polity Press.
Aga, A. 2018. "Merchants of Knowledge: Petty Retail and Differentiation without Consolidation Among Farmers in Maharashtra, India." *Journal of Agrarian Change* 18 (3): 658–676. https://doi.org/10.1111/joac.12249
Aslany, M., and S. Brincat. 2021. "Class and Climate-Change Adaptation in Rural India: Beyond Community-Based Adaptation Models." *Sustainable Development* 29 (3): 571–582. https://doi.org/10.1002/sd.2201
Bakshi, A., and T. S. Modak. 2017. "Incomes of Small Farmer Households." In *How Do Small Farmers Fare? Evidence from Village Studies in India*, edited by Madhura Swaminathan and Sandipan Baksi, 126–170. New Delhi: Tulika Books.
Banaji, J. 1977. "Capitalist Domination and the Small Peasantry: Deccan Districts in the Late Nineteenth Century." *Economic & Political Weekly* 12 (33-4): 1375–1404.
Bansal, G. 2025. "Rural Capital Accumulation and Simple Reproduction in Neoliberal India: A Comparative Study of the Agrarian Questions of Capital and Labour in Two Regions of Punjab." In *School of Global Development*. Norwich: University of East Anglia.
Bender, B. 2002. "Time and Landscape." *Current Anthropology* 43 (S4): S103–S112. https://doi.org/10.1086/339561
Bernstein, H. 2010. *Class Dynamics of Agrarian Change*. Halifax: Fernwood.
Breman, J. 1994. *Wage Hunters and Gatherers: Search for Work in the Urban and Rural Economy of South Gujarat*. Delhi: Oxford University Press.
Brenner, R. P. 2001. "The Low Countries in the Transition to Capitalism." *Journal of Agrarian Change* 1 (2): 169–241. https://doi.org/10.1111/1471-0366.00007
Chakrabarty, D. 2002. *Provincialising Europe: Postcolonial Thought and Historical Difference*. Princeton: Princeton University Press.
Champion, M. S. 2019. "The History of Temporalities: An Introduction." *Past & Present* 243 (1): 247–254. https://doi.org/10.1093/pastj/gtz007
Chandrasekhar, S., S. Sahoo, and H. Swaminathan. 2022. "Seasonal Migration and Feminization of Farm Management: Evidence from India." *Feminist Economics* 28 (1): 86–113. https://doi.org/10.1080/13545701.2021.1976808
Chaudhuri, A., and N. Gutkowski. 2025. "Cultivating Time as Power: Bt Cotton Seeds, Olive Cultivars, and Agrarian Temporalities in Israel/Palestine and India." *Geoforum* 166:104412. https://doi.org/10.1016/j.geoforum.2025.104412
Corbridge, S. 2004. "Waiting in Line, or the Moral and Material Geographies of Queue-Jumping." In *Geographies and Moralities*, 183–198.
Das, A., T. Singh Modak, B. Sarkar, and M. Swaminathan. 2017. "Costs and Prices." In *How Do Small Farmers Fare? Evidence from Village Studies in India*, edited by Madhura Swaminathan and Sandipan Baksi, 171–199. New Delhi: Tulika Books.
Feuerbacher, A., S. McDonald, C. Dukpa, and H. Grethe. 2020. "Seasonal Rural Labor Markets and Their Relevance to Policy Analyses in Developing Countries." *Food Policy* 93:101875. https://doi.org/10.1016/j.foodpol.2020.101875
Gidwani, V. 2000. "Labored Landscapes: Agro-Ecological Change in Central Gujarat, India." In *Agrarian Environments: Resources, Representation and Rule in India*, edited by Arun Agrawal and K. Sivaramakrishnan, 216–249. Durham: Duke University Press.
Glover, D. 2018. "Farming as a Performance: A Conceptual and Methodological Contribution to the Ecology of Practices." *Journal of Political Ecology* 25 (1): 686–702. https://doi.org/10.2458/v25i1.22390

Guérin, I. 2014. "Juggling with Debt, Social Ties, and Values: The Everyday Use of Microcredit in Rural South India." *Current Anthropology* 55 (S9): S40–S50. https://doi.org/10.1086/675929

Gutkowski, N. 2024. *Struggling for Time: Environmental Governance and Agrarian Resistance in Israel/Palestine*. Stanford University Press.

Guyer, J. I. 1988. "The Multiplication of Labor: Historical Methods in the Study of Gender and Agricultural Change in Modern Africa." *Current Anthropology* 29 (2): 247–272. https://doi.org/10.1086/203630

Harriss-White, B. 2008. "India's Rainfed Agricultural Dystopia." *European Journal of Development Research* 20 (4): 549–561. https://doi.org/10.1080/09578810802493291

Ingold, T. 1993. "The Temporality of the Landscape." *World Archaeology* 25 (2): 152–174. https://doi.org/10.1080/00438243.1993.9980235

Ingold, T. 2000. *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. London: Routledge.

Iyer, S., and N. Rao. 2024. "Skills to Stay: Social Processes in Agricultural Skill Acquisition in Rural Karnataka." *Third World Quarterly* 45 (4): 677–697. https://doi.org/10.1080/01436597.2022.2132929

Jakobsen, J., M. Barbesgaard, and M. Aguilar-Støen. 2025. "Turnover Time in the Pandemic Era: Industrial Poultry, Avian Influenza and Capitalist Strategies." *The Journal of Peasant Studies*: 1–24. https://doi.org/10.1080/03066150.2025.2536487

Jalan, I., and N. Lakshmikantha. 2024. *Unpredictable Rainfall Makes Farming in Marathwada Even Harder*. New Delhi: The Hindu.

Kumar, N. 2025. "Accumulation in Small-Scale Horticulture: Entrepreneurial Farming and the Regional State in South India." *The Journal of Peasant Studies*. https://doi.org/10.1080/03066150.2025.2537260

Longhurst, R., and A. Pacey. 1981. *Seasonal Dimensions of Rural Poverty*. Pinter Press.

Ludden, D. 1999. *An Agrarian History of South Asia*. Cambridge: Cambridge University Press.

Mann, S. A., and J. M. Dickinson. 1978. "Obstacles to the Development of a Capitalist Agriculture." *The Journal of Peasant Studies* 5 (4): 466–481. https://doi.org/10.1080/03066157808438058

Matthan, T. 2022. "Speculative Crops: Gambling on the Onion in Rural India." *Geoforum* 130:115–122. https://doi.org/10.1016/j.geoforum.2021.10.014

May J., and N. Thrift, eds. 2001. *Timespace: Geographies of Temporality*. London: Routledge.

Mosse, D. 2010. "A Relational Approach to Durable Poverty, Inequality and Power." *Journal of Development Studies* 46 (7): 1156–1178. https://doi.org/10.1080/00220388.2010.487095

Nagaraj, N., P. S. Srikantha Murthy, M. G. Chandrakanth, M. Bhattarai, and N. Singha Roy. 2018. "Economic Impacts of MGNREGA in Dryland Region of India: A Miseo and Micro Study in Selected States." In *Employment Guarantee Programme and Dynamics of Rural Transformation in India*, edited by Madhusudan Bhattarai, P. K. Viswanathan, Rudra Mishra, and Cynthia Bantilan, 265–289. Singapore: Springer.

Narwade, S. 2024. "Patterns of Employment in Rural Marathwada." *Vidyasagar University Journal of Economics* XXVIII (1): 78–98. https://doi.org/10.62424/VUJE.2024.28.00.07

Nielsen, K. B. 2018. *Land Dispossession and Everyday Politics in Rural Eastern India*. London: Anthem Press.

Ogle, V. 2019. "Time, Temporality and the History of Capitalism." *Past & Present* 243 (1): 312–327. https://doi.org/10.1093/pastj/gtz014

Pattenden, J. 2011. "Gatekeeping as Accumulation and Domination: Decentralization and Class Relations in Rural South India." *Journal of Agrarian Change* 11 (2): 164–194. https://doi.org/10.1111/j.1471-0366.2010.00300.x

Pattenden, J. 2016. *Labour, State and Society in Rural India: A Class-Relational Approach*. Manchester: Manchester University Press.

Pattnaik, I., and K. Lahiri-Dutt. 2022. "Do Women Like to Farm? Evidence of Growing Burdens of Farming on Women in Rural India." *The Journal of Peasant Studies* 49 (3): 629–651. https://doi.org/10.1080/03066150.2020.1867540

Postone, M. 1993. *Time, Labor, and Social Domination: A Reinterpretation of Marx's Critical Theory*. Cambridge: Cambridge University Press.

Prasad, P., O. Damani, and M. Sohoni. 2022. "How Can Resource-Level Thresholds Guide Sustainable Intensification of Agriculture at Farm Level? A System Dynamics Study of Farm-Pond Based Intensification." *Agricultural Water Management* 264:107385. https://doi.org/10.1016/j.agwat.2021.107385

Rai, P. 2020. "Seasonal Masculinities: Seasonal Labor Migration and Masculinities in Rural Western India." *Gender, Place & Culture* 27 (2): 261–280. https://doi.org/10.1080/0966369X.2019.1640188

Rajkhowa, P., and M. Qaim. 2022. "Mobile Phones, Off-Farm Employment and Household Income in Rural India." *Journal of Agricultural Economics* 73 (3): 789–805. https://doi.org/10.1111/1477-9552.12480

Ramprasad, V. 2019. "Debt and Vulnerability: Indebtedness, Institutions and Smallholder Agriculture in South India." *The Journal of Peasant Studies* 46 (6): 1286–1307. https://doi.org/10.1080/03066150.2018.1460597

Rao, N., and S. Raju. 2020. "Gendered Time, Seasonality, and Nutrition: Insights from Two Indian Districts." *Feminist Economics* 26 (2): 95–125. https://doi.org/10.1080/13545701.2019.1632470

Rao, S., S. Ramnarain, S. Naidu, A. Uppal, and A. Mukherjee. 2024. "Work and Social Reproduction in Rural India: Lessons from Time-use Data." *Journal of Agrarian Change* 24 (3): e12569. https://doi.org/10.1111/joac.12569

Shah, A., and J. Lerche. 2020. "Migration and the Invisible Economies of Care: Production, Social Reproduction and Seasonal Migrant Labour in India." *Transactions of the Institute of British Geographers* 45 (4): 719–734. https://doi.org/10.1111/tran.12401

Shah, S. H., L. M. Harris, M. S. Johnson, and H. Wittman. 2021. "A 'Drought-Free' Maharashtra? Politicising Water Conservation for Rain-Dependent Agriculture." *Water Alternatives* 14 (2): 573–596.

Srivastava, R. 2019. "Emerging Dynamics of Labour Market Inequality in India: Migration, Informality, Segmentation and Social Discrimination." *The Indian Journal of Labour Economics* 62 (2): 147–171. https://doi.org/10.1007/s41027-019-00178-5

Swain, S., S. K. Mishra, A. Pandey, and D. Dayal. 2022. "Assessment of Drought Trends and Variabilities over the Agriculture-Dominated Marathwada Region, India." *Environmental Monitoring and Assessment* 194 (12): 883. https://doi.org/10.1007/s10661-022-10532-8

Taylor, M. 2012. "The Antinomies of 'Financial Inclusion': Debt, Distress and the Workings of Indian Microfinance." *Journal of Agrarian Change* 12 (4): 601–610. https://doi.org/10.1111/j.1471-0366.2012.00377.x

Taylor, M. 2013. "Liquid Debts: Credit, Groundwater and the Social Ecology of Agrarian Distress in Andhra Pradesh, India." *Third World Quarterly* 34 (4): 691–709. https://doi.org/10.1080/01436597.2013.786291

Taylor, M. 2015. *The Political Ecology of Climate Change Adaptation*. London: Routledge.

Taylor, M., and S. Bhasme. 2021. "Between Deficit Rains and Surplus Populations: The Political Ecology of a Climate-Resilient Village in South India." *Geoforum* 126:431–440. https://doi.org/10.1016/j.geoforum.2020.01.007

Taylor, M., and S. Bhasme. 2025. "Towards a Theory of Agrarian Skilling (Or, why Farmer Knowledge Does Not Stop at the Edge of the field)." *Outlook on Agriculture* 52 (2): 142–149. https://doi.org/10.1177/00307270251335671

Thompson, E. P. 1967. "Time, Work-Discipline, and Industrial Capitalism." *Past & Present* 38 (1): 56–97. https://doi.org/10.1093/past/38.1.56

Vemireddy, V., and P. L. Pingali. 2021. "Seasonal Time Trade-Offs and Nutrition Outcomes for Women in Agriculture: Evidence from Rural India." *Food Policy* 101:102074. https://doi.org/10.1016/j.foodpol.2021.102074

Yadav, A., T. Warsi, E. Kale, S. Chemburkar, M. D'Souza, and D. Saha. 2024. "Farm Ponds in Semi-arid Hard Rock Terrain of India. Are They Increasing Dependency on Groundwater?" In *Managed Groundwater Recharge and Rainwater Harvesting: Outlook from Developing Countries*, edited by Dipankar Saha, Karen Villholth, and Mohamed Shamrukh, 75–92. London: Springer.