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DEEP WORKING PAPER 30

Poverty and inequality in India: An exploration of undercurrents at the village level

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Our mission is to build evidence, insights, and solutions that help end extreme poverty globally.

We aim to contribute to new global and national data and evidence that governments, decision-makers, citizens and researchers can use to improve people's lives and support the world's poorest people in their efforts to escape extreme poverty.

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Preface

This paper builds on the T.N. Srinivasan Memorial Lecture delivered by Peter Lanjouw at the Indian Policy Forum at the National Council of Applied Economic Research in New Delhi, 7 July 2023. The paper arises out the Oxford Policy Management DEEP project undertaken on behalf of the UK Foreign Commonwealth and Development Office. We are grateful to comments from Junaid Ahmad, Surjit Bhalla, Sonalde Desai, Andrew Fischer, and participants at the India Policy Forum Conference as well as the VU India Science Seminar held on 27 October 2023.

Abstract

Eliminating poverty and containing the rise of inequality are global objectives enshrined in the Sustainable Development Goals. Monitoring progress is an important task in the pursuit of these goals and is most commonly carried out at the country level. In India, poverty fell significantly in the late 1990s and first decade of the present century. This occurred at the apparent cost of an upward trend in inequality. More recently, the picture has become rather more clouded, due to a lack of data and as a result of the Covid-19 pandemic. One can ask whether these monitoring efforts at the national, or state, level are enough to properly understand the currents that shape the evolution of poverty and inequality in India. Indeed, it can be shown that most of India's inequality occurs at the subnational level – the district, block, or village. Similarly, pockets of deep poverty occur far below what conventional household surveys are able to detect. It is thus important to understand better the forces shaping the dynamics of poverty and inequality at the local level. Village studies can offer a means to examine such dynamics. We consider two longitudinal village studies – one in Uttar Pradesh and one in Karnataka – to describe several such processes and to comment also on the impact of Covid-19 on rural wellbeing. We underscore the important role of structural transformation at the village level, notably diversification out of agriculture. We suggest that the impact of structural transformation on distributional outcomes is nuanced, complex, and influenced by factors that are often highly context specific. Covid-19 has exerted a pronounced impact on both villages – exerting significant upward pressure on both poverty and inequality. While economic activity has now resumed, recovery is not yet complete: incomes and employment patterns are yet to return to pre-Covid levels.

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Table of contents

Preface i
Abstract ii
List of tables and figures iv
1 Introduction 1
2 Recent trends in poverty and inequality at the all-India level 4
3 Does the all-India picture capture local-level development trends? 8
4 Distributional outcomes in Palanpur 13
5 The distributional impact of Covid-19 in Palanpur and Alabujanahalli 29
6 Concluding discussion 47
References 51

List of tables and figures

Table 1: Recent trends in consumption inequality 5
Table 2: Decomposing inequality in India 2004/05 and 2011/12 – Theil measure 12
Table 3: Basic population indicators of Palanpur 14
Table 4: Distribution of households and population by caste 14
Table 5: Yields (quintals per *bigha*) of major crops in Palanpur, 1957/58 to 2008/09 15
Table 6: Income shares in Palanpur over time (%) 17
Table 7: Estimates of poverty headcount rates in Palanpur 19
Table 8: Inequality of individual incomes 20
Table 9: Elbers *et al*. (2008) inequality decomposition (Jatabs versus rest of the village) 23
Table 10: Cross-tabulation by income quintiles 25
Table 11: Intergenerational elasticity in income and inequality (1958–2009) 27
Table 12: Socioeconomic profile of Alabujanahalli, 2018/19 30
Table 13: Distribution of population by activity status and sex, 15 years and above, Alabujanahalli 34
Table 14: Average annual per capita income (INR) (at 2008/09 prices) across different socioeconomic groups and change in income (in percent) 34
Table 15: Poverty rates in Alabujanahalli 35
Table 16: Access to various social safety nets 37
Table 17: Activity status by sex 40
Table 18: Monthly income by employment status 41
Table 19: Impact on households due to the pandemic 42
Table 20: Percentage of households benefiting from various social security/relief programmes 45

Figure 1: Trends in poverty and GDP per capita for India, 1987/88–2011/12 4
Figure 2: Poverty trends, 2011/12–2017/18 (based on unofficial CES tabulations) 6
Figure 3: Gini coefficient for per capita consumption, 2011/12–2017/18 6
Figure 4: Composition of non-residential land use of the block, 1834–2013 8
Figure 5: Rural poverty in Andhra Pradesh (2004/05): State, district, and tehsil level 10
Figure 6: Rural poverty in Orissa (2004/05): State, district, and tehsil level 10
Figure 7: Rural poverty in West Bengal (2004/05): State, district, and tehsil level 10
Figure 8: Composition of the farm and non-farm workforce 16
Figure 9: Intergenerational income mobility and inequality 27
Figure 10: Percentage distribution if monthly income in the village 42
Figure 11: Distribution of employment before and after pandemic 44

1 Introduction

The study of poverty and income distribution in India enjoys a venerable history. Nearly 50 years ago, Pranab Bardhan and T.N. Srinivasan edited a landmark study that presented a detailed analysis of poverty and inequality trends in India during the first two and a half decades since India's independence (Bardhan and Srinivasan, 1974).[1] In its call for careful evaluation of data, and its emphasis on the application of sound methodologies, the study was influential in establishing best practice for the analysis of income distribution not just in India but globally. An important consequence of this serious engagement with the analysis of poverty and inequality has been that these distributional issues have remained prominent in the public debate in the decades following the book's publication. As noted by Srinivasan two decades after the report with Badhan, 'India has one of the better statistical systems in the developing world, and what is more, there is a strong tradition of open debate and discussion on data issues among official and non-official, primarily academic statisticians and economists' (Srinivasan, 1994).

These positive observations notwithstanding, controversies have arisen over the years around aspects of data collection and compilation procedures applied by India's National Statistical Office in the consumption expenditure surveys (CESs) that underpin India's official poverty statistics.[2] Most recently, deep concerns have emerged regarding the Government of India's decision not to release the 2017/18 round of the CES. These factors have curtailed the feasibility of tracing out a complete picture of the evolution of poverty and inequality over the entire course of India's history since independence. Even so, some spells can be examined and overall a fairly detailed picture of distributional change can be stitched together.

One important feature of distributional analysis in India stands out. Most of the popular discussion around poverty and inequality levels and trends has referred to aggregate measures that summarise outcomes across many millions of households. Because the CES is the main, official source of available data, inferences are constrained by the sample size and composition of this survey. The CES sampling design and sample size are intended to yield estimates of poverty and inequality that are representative at the national level, as well as at the state and regional level. Attempts to estimate distributional outcome measures at a more disaggregated subnational level – such as the district, block, or village – are not easily supported by the survey.

Yet India is large, populous, and heterogeneous, along many economic, social, and cultural dimensions. Alongside the practice of studying poverty and inequality on the basis of household survey data, there is a longstanding tradition in India of anthropologists,

[1] The study has recently been updated and reissued as Banerjee *et al*. (2019).

[2] See Deaton and Kozel (2005) for an overview of issues affecting comparability between the 50th and 55th rounds and the consequent debate regarding poverty trends in the period following the economic reforms of the early 1990s.

sociologists, and economists undertaking village studies to examine livelihoods and social outcomes at the local level. Insights from these studies have not always resonated with those from secondary household surveys. In a valuable study, edited by Pranab Bardhan, a group of prominent anthropologists and economists engaged in a 'conversation' around the measurement of economic change in rural India (Bardhan, 1989). A common view among the anthropologists was that large-scale household surveys are simply not capable of capturing certain key contextual dimensions of life at the village level. In an insightful contribution, T.N. Srinivasan questioned a number of these arguments, pointing out that surveys can, in principle, be designed to accommodate many of the anthropologists' concerns (Srinivasan, 1989). It remains the case, however, that the existing CES surveys do have a specific design and structure, and they may well, therefore, fail to capture certain important aspects of wellbeing and behaviour at the local level.

In this paper we enquire into some of the currents that shape the evolution of poverty and inequality in India, but that are difficult to discern with large-scale survey data. We note that, in fact, most of India's inequality occurs within subnational localities – the district, block, or village. Similarly, pockets of deep poverty occur at the local level, far below what standard nationally representative household surveys are able to detect. It is thus important to understand better the forces shaping the dynamics of poverty and inequality at the geographically disaggregated level. Village studies offer a means to examine such dynamics. We consider two longitudinal village studies – one in Uttar Pradesh and one in Karnataka – to describe a number of such processes and to comment also on the impact of Covid-19 on rural wellbeing. We point to the important role of structural transformation in our two villages – notably non-farm diversification – in driving poverty and inequality change. We illustrate that structural transformation has been accompanied by falling poverty and rising income inequality. However, we suggest that the role attributed to non-farm diversification as a driver of higher inequality is not immediately obvious. We suggest that, without diversification and in the face of population growth, inequality might well have risen even further. We illustrate how structural transformation can lead to a 'partitioning' between different social groups in regard to the village income distribution. This is the result of varying access to, or inclination to avail of, non-farm opportunities across groups. We document how the process of diversification has been associated with significant income mobility. And yet we show as well that fundamental patterns of advantage and disadvantage appear to persist across generations. Covid-19 has exerted a pronounced impact on both villages, increasing both poverty and inequality. We emphasise both direct and indirect mechanisms at play. We highlight the positive impact of state intervention in the domain of foodgrain provision and employment generation. However, while in many respects economic activity has now resumed, recovery is not yet complete: incomes and employment patterns have yet to return to pre-Covid levels.

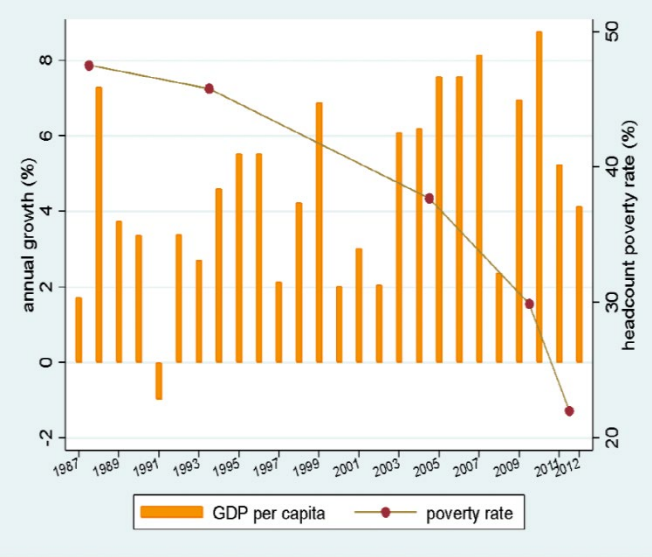
The paper is organised as follows. In the next section we provide a very brief review of prevailing assessments of the evolution over recent decades of poverty and inequality at the national level. As noted above, considerable uncertainty clouds the assessment of these

distributional outcomes after 2011/12, due to non-availability in the public domain of the most recently completed CES survey. In section 3 we shift focus and question the appeal and interpretability of aggregate measures of distributional outcomes. We point to evidence that poverty and inequality are, in fact, highly localised phenomena, suggesting that they need also to be examined from that perspective. We turn in section 4 to a description of the longitudinal study of village Palanpur, Uttar Pradesh, over six decades. We describe the broad context of structural change within which the village is embedded and ask about the recent evolution of poverty and inequality in the face of this process. In section 5 we ask about village-level impacts of the Covid-19 pandemic, adding to our analysis also the perspective from an additional longitudinal study of Alabujanahalli village in Karnataka. We draw attention to notable features of recent distributional dynamics in these two villages and suggest that they warrant further monitoring and exploration. We attempt to draw implications and conclusions from our discussion in section 6.

2 Recent trends in poverty and inequality at the all-India level

As noted above, poverty and inequality measurement in India as a whole has historically been based on the CES that are fielded by the National Sample Survey Organisation. Official estimates are conventionally produced from the 'quinquennial' rounds of the survey undertaken every five years, with a sample size that is sufficiently large to yield representative estimates at the state and urban/rural sector level. Following the introduction of economic reforms in the early 1990s, a question of interest has been how poverty evolved in the face of an acceleration in economic growth (Datt and Ravallion, 2011; Ravallion, 2011). Figure 1 illustrates that poverty fell sharply during this period, falling from nearly 50% of the population in 1987/88 to just over 20% by 2011/12 (Dang and Lanjouw, 2018). Although growth had started to pick up by the mid-1990s, the evidence suggests that poverty reduction only started to gather pace in the mid-2000s, after the 2004/05 round of the CES, and in particular between the 2009/10 and 2011/12 rounds.[3] Interestingly, the dramatic falls in poverty between 2009/10 and 2011/12 occurred when per capita growth rates were in fact lower than during the 2004/05–2009/10 interval (Figure 1).

Figure 1: Trends in poverty and GDP per capita for India, 1987/88–2011/12



Source: Dang and Lanjouw (2018)

The quinquennial, 'thick', rounds of the CES can also be scrutinised to track inequality trends in India. A commonly used indicator of inequality is the Gini Index and, by this measure, inequality was low and stable between 1983 and 1993/94 but rose appreciably after the onset of reforms in 1991 (Table 1). Between 2004/05 and 2011/12, inequality increased slightly or remained stable depending on the indicator being considered. Other indicators

[3] Dang and Lanjouw (2018) explore the possibility that the marked acceleration in measured poverty decline between 2008/09 and 2011/12 might have been driven by changes in survey methodology, but conclude that this is unlikely to have been the case.

which emphasise differences between extremes of the consumption distribution, such as the ratio between the richest and poorest deciles, confirm rising inequality during the 1993/94 to 2004/05 period, with smaller increases thereafter. In 2011/12, the richest 20% of the population accounted for nearly 45% of total consumption.

Table 1: Recent trends in consumption inequality

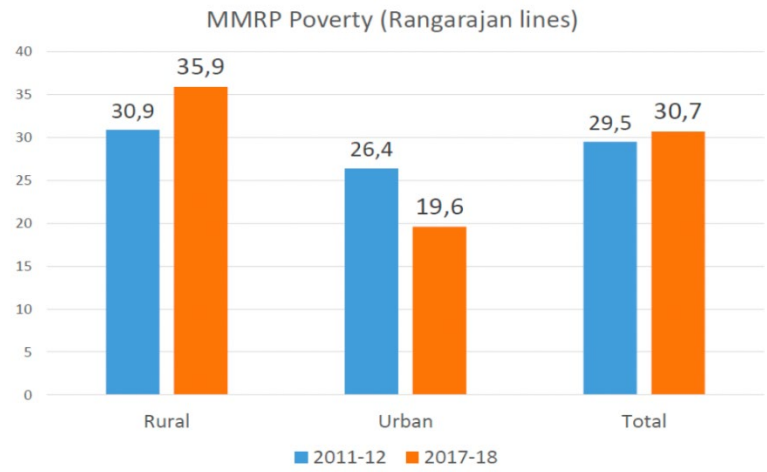
	1983	1993/94	2004/05	2009/10	2011/12
Share of groups in total national consumption expenditure					
Bottom 20%	9.0	9.2	8.5	8.2	8.1
Bottom 40%	22.2	22.3	20.3	19.9	19.6
Top 20%	39.1	39.7	43.9	44.8	44.7
Top 10%	24.7	25.4	29.2	30.1	29.9
Ratio of average consumption of groups					
Urban top 10%/Rural bottom 10%	9.5	9.4	12.7	13.9	14.0
Urban top 10%/Urban bottom 10%	7.0	7.1	9.1	10.1	10.1
Urban top 10%/Rural bottom 40%	6.5	6.8	9.4	10.1	10.2
Gini Index					
Rural Gini	0.27	0.26	0.28	0.29	0.29
Urban Gini	0.31	0.32	0.36	0.38	0.38
All-India Gini	0.30	0.30	0.35	0.36	0.37

Source: Dang and Lanjouw (2018)

Notes: All estimates are based on Mixed Recall Period consumption aggregates.

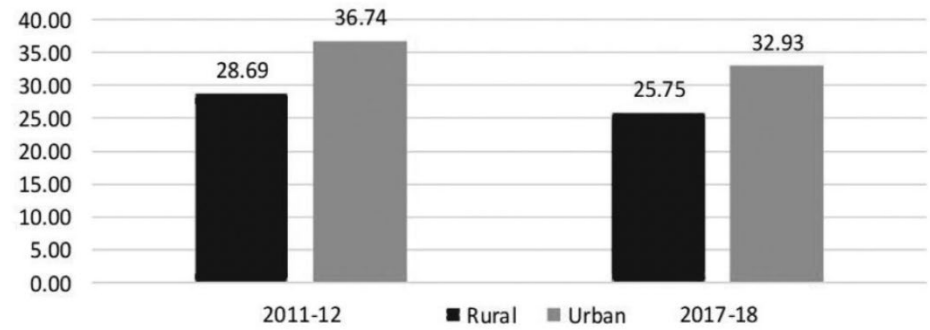
The picture becomes rather more cloudy after 2011/12. As noted above, the most recent survey was fielded in 2017/18 but the results from this survey were withheld by the Government of India, apparently as a result of concerns about data quality. A study by Subramanian (2019), based on preliminary tabulations from the 2017/18 CES, which did make their way into the public domain, points to a decline in per capita consumption between 2011/12 and 2017/18. As illustrated in Figure 2 and Figure 3, these tabulations also point to rising poverty and inequality during this period (Himanshu, 2022a).

Figure 2: Poverty trends, 2011/12–2017/18 (based on unofficial CES tabulations)



Source: Himanshu (2022a)

Figure 3: Gini coefficient for per capita consumption, 2011/12–2017/18



Source: Himanshu (2022a)

Results from the informally circulated and tabulated estimates have never been officially endorsed. While the specific data quality concerns that were raised with respect to the 2017/18 CES survey have not been made explicit, they have been invoked to argue that these data do not yield accurate estimates. As a result, researchers have explored alternative data, methods, and approaches to estimating poverty and inequality in the post-2011/12 period. Himanshu (2022b and 2022c) provide a useful overview of these contributions.

Several studies point to an increase in poverty post-2011/12 (see, for example, Mehotra and Parida, 2021). But a number of studies point, instead, to declining poverty or at least no increase (Newhouse and Vyas, 2019; Edochie *et al*., 2022; Roy and van der Weide, 2022).[4]

Given India's significant contribution to global poverty counts, and the institutional imperatives in organisations such as the World Bank to report global poverty estimates, the

[4] A study by Bhalla, Basin, and Virmani (2022) suggests that poverty may have been virtually eliminated by 2019/20. However, their estimates are not derived from analysis of microdata, and invoke adjustments based on the divergence between household survey and national account consumption aggregates, as well as state-level GDP estimates.

question of how poverty in India has evolved post-2011/12 has implications also for the tracking of global poverty and the monitoring of Sustainable Development Goal 1, which is aimed at ending global poverty. World Bank (2022) bases its estimate of poverty in India for 2017/18 on the study by Roy and van der Weide (2022). This study employs the Consumer Pyramids Household Survey (CPHS) conducted by the Centre for Monitoring the Indian Economy. The CPHS is not directly comparable with the CES from 2011/12 and so Roy and van der Weide implement a variety of adjustments to improve comparability. Based on their study, and employing the World Bank's international poverty line of US$ 1.90 (purchasing power parity), poverty in India is thought to have fallen from 22.5% in 2011/12 to 13.6% in 2017 (World Bank, 2022). The corresponding assessment of inequality is that it fell post-2011/12, but less sharply than the leaked, tabulated CES data had suggested. While the Roy and van der Weide (2022) estimates have been widely circulated and have acquired prominence as a result of their feeding into official World Bank global poverty estimates, they are not uncontroversial. In a recent contribution, Drèze and Somanchi (2023) cast doubt on the reliability of the adjustments introduced in that study, and therefore on the estimates it reports. The recent evolution of poverty in India therefore remains the subject of some debate.

3 Does the all-India picture capture local-level development trends?

While the debates surrounding trends in poverty and inequality are likely to persist, this paper aims to shift the focus of attention to the local level: the village in rural areas and the block in urban centres. In a recent paper, William Easterly, Laura Freschi, and Steven Pennings describe what they denote as the 'Long History of a Short Block' in the United States (Easterly *et al*., 2015). In this study, the authors isolate a small area of the island of Manhattan, corresponding to what eventually emerged as a city block in New York City, and trace the process of economic development in this small area over a period of 400 years, drawing on a wealth of archival, administrative, and census-based data. Starting from the mid-1600s and continuing through to the present day, they illustrate how the city block underwent striking changes in terms of composition of population and economic activity. During the initial 200 years or so, the block was essentially agricultural and change occurred rather slowly. Later, starting in the early 1800s, the block became absorbed into the expanding city of New York and shifted out of agriculture into manufacturing and service activities. What is striking about this history, and important to emphasise in the context of the present paper, is that the block underwent profound changes that, the authors argue, were difficult to anticipate, that led to outcomes that differed markedly from those in neighbouring blocks, and that were driven by a combination of exogenous forces such as health shocks, technological change, and evolving trade patterns, as well as by local, neighbourhood-level dynamics. Figure 4 illustrates the evolving non-residential land use in the block during the period from 1834 to 2013 – reflecting the prevailing economic characteristics and fortunes of the block over time.

Figure 4: Composition of non-residential land use of the block, 1834–2013

Source: Easterly *et al*., 2015

Between 1834 and 2013 the block evolved, via a series of economic cycles of boom and bust, from cultivation of farmland, into a residential neighbourhood of choice among city elites, to a dissipated neighbourhood of prostitution and brothels, to a thriving centre of small garment making, to a colony of squatters and artists, and finally emerging as a supremely expensive neighbourhood of luxury retail outlets and top-end loft-style apartments. Easterly *et al.* (2015) emphasises that these profound changes were not planned, and would not have been easily discerned in aggregate data. They document that the changes accelerated as the block diversified out of agriculture into commerce and manufacturing, and that many of these changes were prompted by changes in technology, population, and trading opportunities. The authors point out that, in any given country, blocks and localities will be subjected to, and buffeted by, such forces of change. There is good reason to expect differing, possibly countervailing, consequences and responses at the local level. What happens in a nation as a whole is essentially the aggregation of these subnational experiences. Arriving at an understanding of what happens at the national level is thus incumbent on understanding the experience on the ground.

Turning from a story of long-term development in a block in New York City to the situation of villages and blocks in India, we start by asking how well aggregate figures on inequality and poverty capture distributional outcomes at the local level. As noted above, observing distributional outcomes at the detailed subnational level is difficult due to the fact that survey data that have coverage across the country as a whole, such as the CES, are not large enough in terms of sample size to permit estimation at such as disaggregated level. Many localities would not even be included in the sample, and for those that are the number of observations would be too small to provide reliable estimates. One way in which to overcome this obstacle is to appeal to small area estimation techniques that combine survey data with large databases, such as the population census, and that impute into the census an estimate of consumption at the unit record level. With the imputed consumption estimate available for each household in the census it then becomes possible to estimate distributional outcomes at the detailed subnational level.[5]

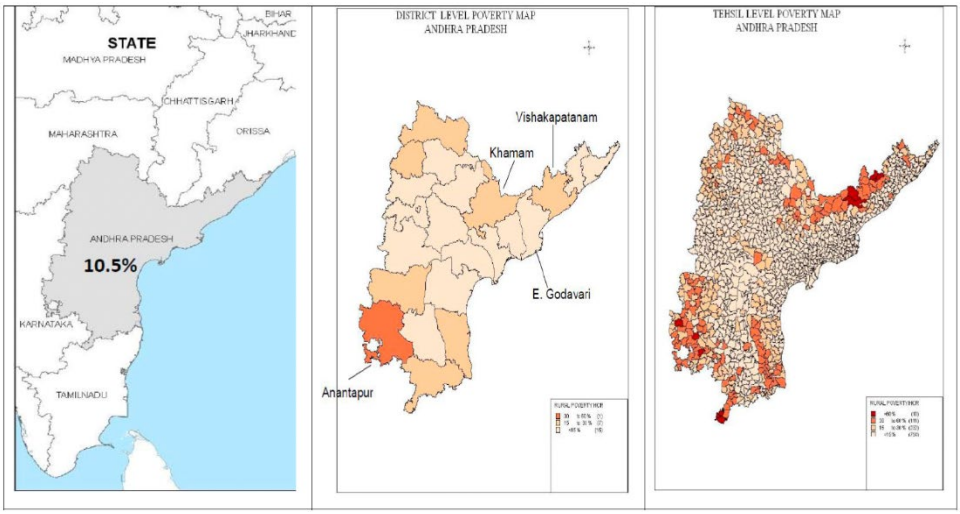
Gangopadhyay *et al.* (2010) undertake such a small area estimation exercise in India by combining the NSS 2004/05 survey data with the 2001 population census data for three Indian states: Andhra Pradesh, Orissa, and West Bengal. The exercise reveals considerable variation of poverty rates across districts and tehsils (Figure 5, Figure 6, and Figure 7). In 2004/05, the percentage of the rural Indian population below the national poverty line was 28.1%.[6] This compared to poverty rates of 10.5% in rural Andhra Pradesh, 46.9% in rural

[5] Elbers *et al.* (2003) initially proposed a method to implement this procedure. It has seen widespread application, notably under the auspices of the World Bank. The ELL method fits within a broader sub-field of statistics called Small Area Estimation described by Rao (2003). Pratesi (2016) provides a relatively up-to-date survey of the literature. Recent innovations include employing satellite and remote-sensing data in the place of population census data. See, for example, van der Weide *et al.* (2023).

[6] This poverty rate is based on the official rural poverty line proposed by the 1993 Expert Group (Government of India, 2009).

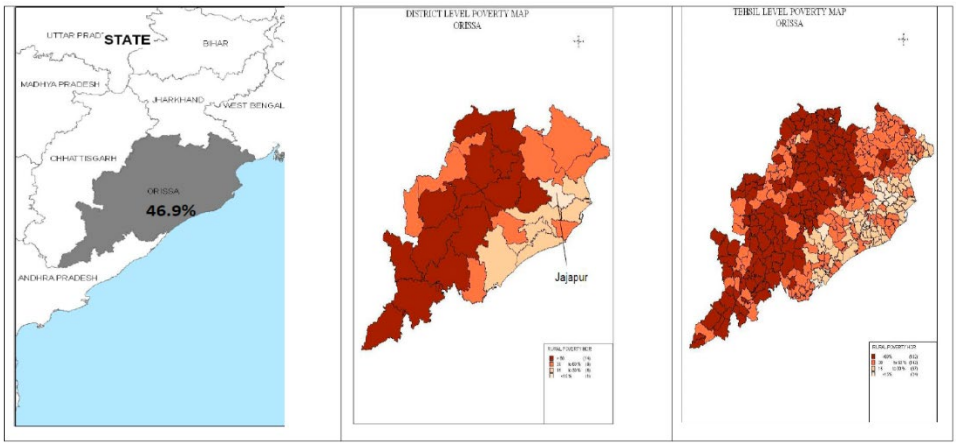
Orissa, and 28.4% in rural West Bengal. Within each of these states there were tehsils with rural poverty rates estimated to exceed 60% as well as tehsils where less than 15% of the rural population was poor. Gangopadhyay *et al*. (2010) noted similar variation in poverty rates across urban districts within these three states.

Figure 5: Rural poverty in Andhra Pradesh (2004/05): State, district, and tehsil level



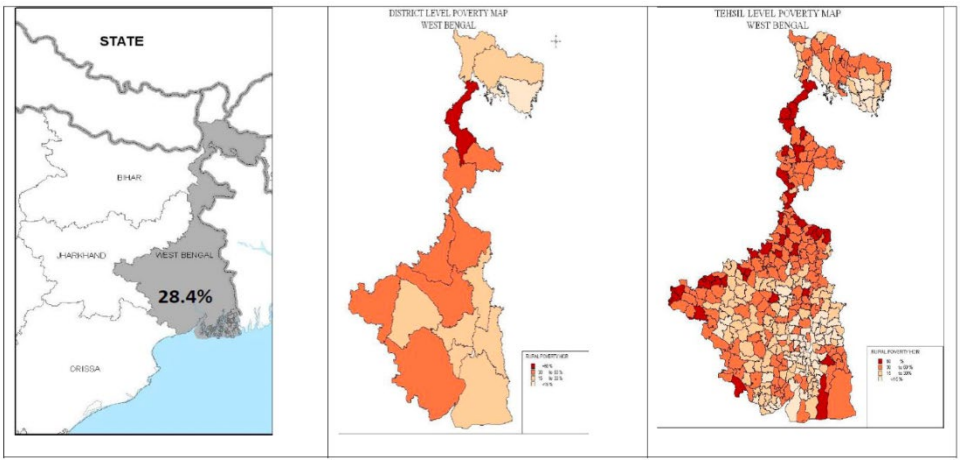
Source: World Bank calculations based on Gangopadhyay *et al*. (2010).

Figure 6: Rural poverty in Orissa (2004/05): State, district, and tehsil level



Source: World Bank calculations based on Gangopadhyay *et al*. (2010).

Figure 7: Rural poverty in West Bengal (2004/05): State, district, and tehsil level



Source: World Bank calculations based on Gangopadhyay *et al*. (2010).

The small-area estimation method employed by Gangopadhyay *et al*. (2010) can also be used to estimate inequality at the subnational level. In their application based on the 2004/05 NSS survey and the 2001 census, Gangopadhyay *et al*. (2010) document that the association between poverty and inequality is not identical across the three states. In Andhra Pradesh it was found that the tehsil-level Gini coefficient capturing consumption inequality among the rural population tended to be positively correlated with the tehsil poverty rate: poorer tehsils are also more unequal. This contrasts with the observation in Orissa and West Bengal, where inequality was highest among tehsils with moderate poverty rates in the 40–60% range, and considerably lower in the poorest of the tehsils – i.e. those with poverty rates well above 60%. This latter observation is of potential interest to policy makers contemplating geographic targeting of their poverty-alleviation resources to the poorest tehsils. In Orissa and West Bengal, the evidence would suggest that there is relatively little risk of funds being captured by the non-poor in the poorest tehsils. In Andhra Pradesh, however, the risk would be higher as even in the poorest tehsils there are likely to be many non-poor households, raising the possibility of 'elite capture'.

While the small-area estimation analysis undertaken by Gangopadhyay *et al*. (2010) is suggestive, it is based on data that are decades old and has also been applied to only three states. More recent, and more comprehensive, estimates are needed, but are not currently available. An alternative effort, exploring the evolution of local-level inequality, drawing on CES survey data from 2004/05 and 2011/12, as well as census and satellite data, was recently undertaken by Garcés Urzainqui and Mukhopadhyay (2018). The authors estimate a regression model of district-level real consumption expenditure per capita on a host of district-level characteristics for which information is available, as well as on characteristics for which lower levels of aggregation such as physical geography, demography, structure of employment, and night-time luminosity are available. The models are used to predict average per capita consumption expenditure in each of India's rural villages and urban blocks. Garcés Urzainqui and Mukhopadhyay (2018) compute inequality measures for India as a whole as well as for its states, based on imputed consumption at the village and urban block level. This is tantamount to asking how much inequality would exist in India as a whole if one were to assume that there was no inequality within villages or within urban blocks, and that whatever inequality was observed would be the result of differences in village- and block-level average consumption. Deducting this calculation of between-locality inequality from direct, CES- based estimates of total inequality then allow Garcés Urzainqui and Mukhopadhyay (2018) to arrive at an estimate of the percentage contribution of within-village and within-block inequality to overall inequality.[7]

Based on this procedure, Garcés Urzainqui and Mukhopadhyay (2018) document that in both 2004/05 and 2011/12 inequality occurs disproportionately within villages and urban blocks

[7] This approach to decomposing inequality by population subgroups was introduced by Bourguignon (1979), Cowell (1980), and Shorrocks (1980).

(Table 2). While there are clearly significant differences in average per capita consumption levels between localities, inequality in India as a whole would only fall slightly if solely these differences were eliminated. In other words, to make a significant dent in Indian inequality it would be necessary to focus on reducing inequality within villages and urban blocks.

Table 2: Decomposing inequality in India 2004/05 and 2011/12 – Theil measure

	2004/05	2011/12
All India (NSS)	0.188 (100%)	0.210 (100%)
Imputation-based inequality (between spatial units)	0.050 (27%)	0.055 (26%)
Residual: within spatial unit	0.138 (73%)	0.155 (74%)
Rural India (NSS)	0.140 (100%)	0.143 (100%)
Rural inequality based on village-level imputation (between)	0.035 (25%)	0.037 (25%)
Residual: within village	0.105 (75%)	0.106 (75%)
Urban India (NSS)	0.234 (100%)	0.264 (100%)
Urban inequality based on urban blocks (between)	0.028 (12%)	0.033 (13%)
Residual: within urban block	0.206 (88%)	0.231 (87%)

Source: Garcés Urzainqui and Mukhopadhyay (2018).

4 Distributional outcomes in Palanpur

The previous section suggests that the process of economic development can be highly localised, with drivers, mechanisms, and outcomes possibly varying sharply from one locality to the next. Although the exercise of tracking the evolution of poverty and inequality at a highly aggregate level – such as the state or national level – is clearly relevant and of interest, it can be usefully complemented by an understanding of what occurs at the disaggregated, subnational level. In particular, the manner in which broad processes such as technological change, population growth, and structural transformation impact wellbeing and its distribution within communities may matter. We turn in this section to a description of some of these mechanisms and processes at the village level. We draw on a longstanding study of economic change in the village of Palanpur, Uttar Pradesh, which has been subject of intense scrutiny during the seven decades spanning 1957/58 and 2015.

The village setting

Palanpur is a small village located in Moradabad District in western Uttar Pradesh. It has been the subject of close study by economists since 1957/58 and was most recently described in detail in Himanshu *et al*. (2018). This study draws on seven rounds of intensive data collection of both a quantitative and qualitative nature, with the last, comprehensive round occurring in 2015.[8] The village is located in the plains of the Ganges River near the town of Chandausi and the large city (and district headquarter) of Moradabad. A railway line connects the village to these urban centres, as well as to Delhi, some 220km away.

In 2015, Palanpur had a population of 1,299 persons, divided into 224 households (Table 3). Overall population growth was slightly above that for India in the 1950s and 1960s but substantially below the national average during the last 25 years. However, following adjustment for out-migration, the population growth rate in Palanpur is found to be very similar to India for the same 25-year period.

[8] Palanpur was first surveyed in 1957/58 by the Agricultural Economics Research Centre (AERC) of the University of Delhi. A subsequent survey was fielded by the AERC in 1962/63. In 1974/75, Christopher Bliss and Nicholas Stern spent nearly a year in the village collecting data; their fieldwork culminated in the publication of a book on the Palanpur economy (Bliss and Stern, 1982). The village was next surveyed in 1983/84 by Jean Drèze and Naresh Sharma, in collaboration with Nicholas Stern, and they visited the village again in 1993 for a quick resurvey. Findings from these data collection efforts were reported in Lanjouw and Stern (1998). In 2008–2010, Himanshu and collaborators conducted fieldwork over two consecutive years and then returned again in 2015 for a quick resurvey. Analysis of the complete dataset, covering all of the survey years, was reported in Himanshu *et al*. (2018). Comprehensive income data are not available for all survey years. The 1993 and 2015 rounds did not collect the detailed information needed to produce income data that are comparable with the other survey years. Discussion of findings related to incomes will thus not pertain to those survey years. The 2022 survey did attempt to collect some income data, but full comparability with earlier rounds was probably not achieved. Discussion of findings from this round follows below.

Table 3: Basic population indicators of Palanpur

	Year						
	1957/58	1962/63	1974/75	1983/84	1993	2008–2010	2015
Population	528	585	790	960	1,133	1,255	1,299
Number of households	100	106	117	143	193	233	224
Average household size	5.3	5.5	6.8	6.7	5.9	5.4	5.6
Female—male ratio	0.87	0.87	0.85	0.93	0.85	0.98	0.94
Annual growth rate of population	-	2.2	2.5	2.2	1.7	0.74	0.58
Migration-adjusted growth rate		2.3	2.7	1.9	2.2	1.9	1.8
Age distribution of the population (%)							
0–14	39	38	46	44	41	38	36
15–24	21	19	15	20	21	21	20
25–44	23	25	25	23	22	26	27
45–64	14	13	12	10	12	11	13
65+	3	5	2	3	4	4	4

Source: Himanshu *et al*. (2018).

The caste composition of Palanpur is presented in Table 4. Although there are eight caste groups in the village, and a few additional individual caste households, the three main castes in the village are the Thakurs, Muraos, and Jatabs. Thakurs comprise the largest caste in the village numerically and also occupy the top of the village hierarchy in terms of status. They continue to be powerful economically and politically. Over the survey period they have been seen to move into the non-farm sector, and in recent years have gradually been joined by other castes. Muraos, ranked just below the Thakurs, are a cultivating caste and take pride in their agricultural skills. Jatabs, a scheduled caste at the bottom of the village hierarchy, remain economically and socially marginalised but have seen a rise in population share over time. Their economic conditions have also improved over the years (explored further below).

Table 4: Distribution of households and population by caste

Caste group	Year						
	1957/58	1962/63	1974/75	1983/84	1993	2008/09	2015
	Population (N)						
Thakur	104	125	174	217	283	287	302
Murao	117	133	178	217	294	304	345
Dhimar	56	53	59	74	82	113	106
Gadaria	42	45	68	83	89	91	89
Dhobi	6	2	22	27	31	46	59

Caste group	Year						
Teli	47	57	71	92	109	143	148
Passi	56	70	63	79	62	20	27
Jatab	71	71	97	118	133	203	201
Others	29	29	58	53	50	48	22
Total	528	585	790	960	1,133	1,255	1,299

Source: Himanshu *et al*. (2018).

Agricultural intensification

Throughout the survey period, the economy of Palanpur has essentially been one of small farmers. The proportion of landless households is relatively small by Indian standards and there are no clearly outstanding large farmers. The bulk of economic activity is in agriculture, and since the late 1950s the village has seen agricultural practices transformed in connection with the spread of irrigation, the introduction of new seed varieties, fertilisers, and pesticides, the emergence of rental markets for agricultural equipment, and the introduction of new crops.

At the all-India level, agricultural GDP grew at an average rate of 2.8% since the early 1950s, with rates above 3% per annum after the 1980s (Himanshu *et al*., 2018). Agricultural growth rates in Palanpur have mirrored the national income growth rates in India for most of the period post-Independence. Agriculture remains of great importance to village livelihoods, notwithstanding the expansion of non-farm activities in recent decades. While only about a quarter of households were primarily reliant on agriculture for their livelihood in 2008/09, well over three-quarters of Palanpur's households reported income from agriculture in that year. Key to the agricultural development process over the survey period has been two episodes of technological change – land-augmenting expansion of irrigation, followed by labour-displacing mechanisation. Irrigation expanded from around half of village land at the beginning of the survey period to 100% by the 1974/75 survey. Intensification of farm capital in the form of farm mechanisation followed, with pumpsets displacing Persian wheels and tractors displacing bullocks and buffaloes. While farm mechanisation has raised agricultural productivity, it has also played a role in releasing labour to non-farm activities. Additional forces of agricultural change have been the shift of cropping patterns toward higher-value crops, such as *mentha* (spearmint), as well as improvements in farming practices. Table 5 documents the increase in yields over the survey period. Although costs of cultivation also rose during this time period, the rising yields were sufficient to ensure that village cultivation income in Palanpur grew over time in real terms.

Table 5: Yields (quintals per *bigha*) of major crops in Palanpur, 1957/58 to 2008/09

Year	Major crop			
	Wheat	**Paddy**	**Bajra**	**Sugarcane**
1957/58	0.37	0.14	0.38	11.46
1962/63	0.39	0.31	0.33	13.86

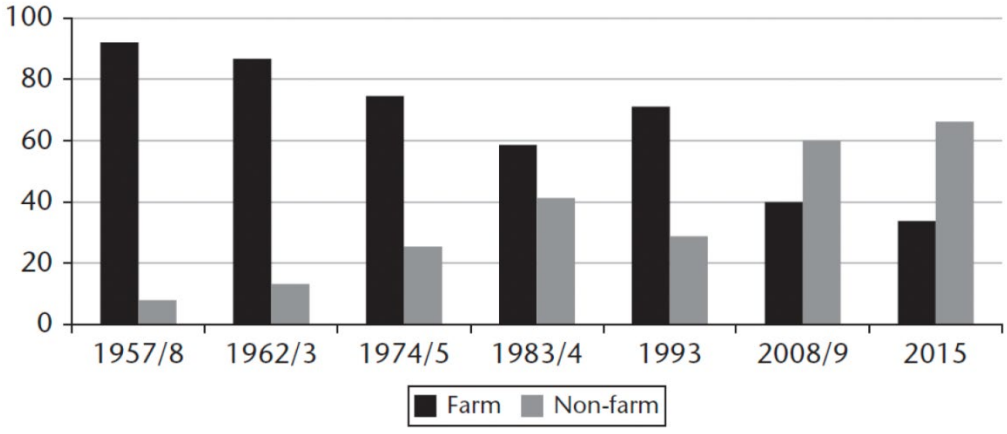
Year			Major crop	
1974/75	1.40	0.93	0.50	15.33
1983/84	1.01	1.30	0.48	12.30
2008/09	2.90	1.90	0.95	24.70

Note: One quintal is 100kg. There are approximately 6.4 *bighas* in an acre and 16 in a hectare. Source: Himanshu *et al*. (2018).

Expansion of non-farm employment

Despite intensification and technological change, and given that overall land availability is fixed (the village lands cover roughly 400 acres – or about 160 hectares), agriculture alone is increasingly unable to support a steadily growing village population. Consequently, a growing share of village income comes from non-agricultural sources. By 2015, non-farm activities represented roughly two-thirds of total primary employment in Palanpur and accounted for nearly 60% of average household income in 2008/09 (see Figure 8 and Table 6). This compares to less than 10% of employment and 20% of income in 1957/58. In Palanpur, the increase in the population, the decline in per capita landholdings, and the releasing of agricultural labour through mechanisation have facilitated, incentivised, and accompanied a process of non-farm diversification. Better access to towns and cities via improvements in railways and communications infrastructure, particularly mobile phones, has helped villagers find jobs and has led to a growing number travelling outside Palanpur for their employment.

Figure 8: Composition of the farm and non-farm workforce



Source: Himanshu *et al*. (2018).

Over time, there has been substantial change in the range and nature of the non-farm jobs available. While these jobs were restricted mainly to traditional caste-based *jajmani* services and a few regular jobs in the railways during the first two survey years of the 1950s and 1960s, there has been a significant expansion over time beyond the network of traditional services. Non-farm employment is now found in a range of establishments such as the cotton factory, a sugar mill in Bilari, a paper factory in Nagalia, marble polishing units in Chandausi, casual labour in brick kilns, and so on.

Table 6: Income shares in Palanpur over time (%)

Income source		Year				
		1957/58	1962/63	1974/75	1983/84	2008/09
Household income	Cultivation	58.5	56.7	58.4	50.2	30
	Livestock income	19.8	21.5	22	13.7	10.4
	Non-cultivation (see breakdown)	21.7	21.8	19.6	35.4	59.6
	Total income share	100	100	100	100	100
Breakdown of non-cultivation income (% contribution to total income)						
Agricultural labour income	Casual labour: farm	7.3	3.5	1.8	1.5	0.9
Other non-cultivation income	Other farm income	1.2	0.6	0.1	2.7	10.7
	Rental	0	0.2	0.6	0	1.6
Non-farm income	Casual labour: non-farm	1.1	1	0	7	6.1
	Self-employment	1.3	3.5	1	3	19.8
	Regular employment	7.5	8.9	15.7	20	16.1
	Jajmani income	1.3	0.6	0.4	1	0.2
	Remittances	2	1.9	0	0.2	3.6
	Other non-farm	0	1.7	0	0.2	0.6

Source: Himanshu *et al*. (2018).

The jobs in the non-farm sector can largely be categorised into two kinds: low-paying casual and menial activities, and more attractive, higher-income opportunities. Casual wage employment would fall under the first category while the latter includes well-paid regular jobs (often government provided) as well as some profitable self-employment activities. At the same time, the lower-paying non-farm jobs remain more remunerative than agricultural daily-wage labour, and many allow for a degree of flexibility, so that seasonal work in agriculture remains possible. Some activities such as marble polishing lie between the two ends of the spectrum, spanning regular and casual employment.

The casual non-farm sector in Palanpur has registered the highest growth in employment in recent decades, notably in activities related to the construction sector. The rate of growth in casual employment has been followed in employment terms by self-employment. Self-employment has seen the fastest income growth in Palanpur, by a substantial margin. Regular wage jobs have declined both relatively and absolutely; there has been very little growth in the number of these jobs since the early 1990s.

In the face of declining per capita landholdings and lower cultivation incomes, households have pursued a broad spectrum of livelihood strategies. Himanshu *et al*. (2018) indicate that participation in the non-farm sector varies across households depending on the size of their landholdings and caste affiliation. Casual non-farm employment is the primary source of employment for the landless and the near landless as the rewards from agricultural labour become less attractive relative to the opportunities outside. For households with landholdings above 30 *bighas* (slightly less than 5 acres) non-farm participation is less

common, although there are a few engaged in relatively high-earning, regular employment or particularly remunerative self-employment enterprises.

A majority of households in Palanpur now belong to the small and marginal land farm category and, for these, non-farm activities play an important role both in increasing income and diversifying risk. Dependence on cultivation has declined and the constraints on income related to land have loosened. Although households rarely exit fully from cultivation, the extent of participation in it is determined by opportunities in the non-farm sector. Those with well-paid regular jobs reduce their involvement in cultivation significantly, while those with casual sector jobs remain more dependent on cultivation in order to maintain levels of income and to manage variability.

While land endowment plays a role in the basic occupational decision concerning participation or not in non-farm activities, access to these jobs – especially to regular jobs – is also influenced by the caste affiliation of an individual. Access to regular jobs is also often determined by an ability to pay bribes, as well as by influence, contacts, and networks based on caste and kinship. As a result, such jobs tend to be held by relatively advantaged caste groups such as the Thakurs. The historically disadvantaged Jatabs, on the other hand, are poorly placed in terms of finding regular non-farm employment. Caste networks also play a role in some casual non-farm jobs, such as, for example, work in the Moradabad railyards, where Thakurs are also predominant.

Recent decades have seen a marked increase in participation by Jatabs in the casual wage non-farm labour force, where there are few barriers to entry. This process has led to improvements in their economic circumstances: almost all Jatabs owned proper houses by 2008/09, whereas almost all their houses had been mud huts in the earlier decades of the surveys. Thus, many had moved out of poverty as conventionally measured (see below).

The traditionally cultivating caste of Muraos originally displayed some resistance to non-farm participation, preferring instead to focus their efforts and attention on cultivation. However, declining agricultural incomes over time have led some of them to belatedly pursue opportunities in the non-farm sector.

There is little evidence to show that education plays a key role in determining access to non-farm jobs. Most of the jobs available in the non-farm sector are unskilled in nature and formal education does not appear to be essential. Women are greatly under-represented in the non-farm labour force of Palanpur, and indeed in the entire labour force of the village. There are a few examples where women do work alongside their husbands in non-farm activities – for example, as part of a family group producing bricks in brick kilns – but overall it appears that social restrictions on women working for wages as non-farm labourers, salaried employees (except for some government jobs), or entrepreneurs continue to hold. Economic activities in agriculture within the village are also circumscribed for women, although there is some indication of increasing cultivation activity for Murao women as participation in non-farm activities by Murao men starts to increase.

While full migration from Palanpur is not particularly common and is not yet increasing as a proportion of households, the related practice of villagers commuting from Palanpur on a daily basis, or for periods of short duration, is both common and increasing over time. Commuting permits villagers to continue to reside in Palanpur, and maintain some involvement in cultivation, while they access an ever-wider range of non-farm job opportunities in the surrounding area and nearby towns and cities. Migration seems increasingly associated with declining land per household.

Poverty

The richness of data covering all households in Palanpur for a span of many decades permits an analysis of the dynamics of poverty and inequality at a level of detail not normally available from secondary data sources. Poverty in Palanpur was very extensive in the early survey years, with over 80% of the population being classed as poor during the first two rounds (Table 7). The growth in incomes associated with agricultural intensification led to a sharp decline in poverty, with the headcount ratio falling to less than 60% by 1974/75 and remaining at roughly that level in 1983/84. Poverty then fell again sharply after 1983, with non-farm employment playing an important role in improving the incomes of many, including those at the bottom of the distribution. A similar picture emerges with mean consumption expenditure estimates, which changed only moderately in the first two decades but had increased sharply by 2008/09.

Table 7: Estimates of poverty headcount rates in Palanpur

Year	Poverty head count ratio		Mean income/consumption (annual; per capita, in rupees)	
	Income	Consumption	Income	Consumption
1957/58	85.1	80.4	5,774	7,357
1962/63	83.6	74	6,010	8,079
1974/75	56.7		8,954	
1983/84	58.3		8,309	
2008/09	38.3	38.3	13,628	12,788

Note: Mean income/consumption are at 2008/09 prices deflated by CPIAL for respective years. The poverty line employed here is based on the official poverty line for rural Uttar Pradesh from Planning Commission (2009). This line yields a consumption–poverty rate of 38.3% in Palanpur in 2008/09. To determine a comparable income poverty line the per capita income level associated with a poverty rate of 38.3% in 2008/09 was obtained and then deflated back using CPIAL price indices to obtain the income poverty rates for the earlier years.

Source: Himanshu *et al*. (2018).

Thakurs and Muraos have historically seen the lowest poverty rates. The relative prosperity of these two castes increased after the expansion of irrigation and the green revolution, with both caste groups showing a sharp decline in poverty between 1962/63 and 1974/75. By 1983/84, Muraos were the least poor caste group, less poor even than the Thakurs. At the other end of the distribution, the expansion of irrigation and the green revolution did little to lift the Jatabs out of poverty. The most recent interval – between 1983/84 and 2008/09 – saw some decline in poverty among the Jatabs, although nearly 70% are still poor, which is considerably more than any other group. On the other hand, with the slowing rate of

agricultural growth, Muraos have not seen a significant further fall in poverty since the late 1980s. Indeed, the Thakurs have regained their pole position in terms of lowest poverty and have been joined by the Telis and Gadarias, two groups that have also seen a particularly sharp reduction in poverty in the last three decades. These latter two (relatively small) caste groups were also among those with the highest involvement in non-farm employment in 2008/09, notably in self-employment activities.

Income inequality

Table 8 presents various measures of income inequality for each of the survey years. Between 1957/58 and 1962/63, the Gini coefficient rose from 0.336 to 0.353 and then fell back sharply, to 0.272, by 1974/75. The remarkable decline between 1962/63 and 1974/75 was the likely consequence of three principal factors. First, with the investment in irrigation in the 1960s and the advent of green revolution methods in the late 1960s and the 1970s, there was a significant expansion in the use and application of modern agricultural technologies, and a widespread introduction of newer farming practices and better irrigation devices. The distributional 'incidence' of the expansion of irrigation was particularly progressive in that whereas previously only a few, better-off farmers had been in a position to irrigate their land (using 'Persian wheel' lifting technologies, which required digging and maintaining a large well and involved complementary draught animal power), this period saw the expansion of irrigation to all farmers, involving the use of tubewells and diesel pumpsets. By 1974/75, all village land was irrigated.

Second, 1974/75 was also a particularly good agricultural year in terms of harvest quality in Palanpur. As a result, those who had spent less on inputs were less at risk from lower or negative incomes in the face of a bad harvest. Further, 'errant' farming practices (late sowing, poor weeding, etc.) tended to be less severely penalised.

Table 8: Inequality of individual incomes

Measures of inequality	Survey years				
	1957/58	1962/63	1974/75	1983/84	2008/09
Gini coefficient	0.336	0.353	0.272	0.310	0.379
Coefficient of variation	0.650	0.755	0.530	0.578	0.769
Atkinson Index					
e=1	0.173	0.191	0.137	0.170	0.229
e=2	0.319	0.344	0.206	0.366	0.444
Theil L measure					
GE(0)	0.19	0.213	0.147	0.186	0.26
No. of observations	529	585	750	977	1,255
No. of households	100	106	112	143	233
No. of individuals (households) with missing income	0	0	5(1)	8(3)	37(12)

Source: Himanshu (2018).

The third factor to contribute toward an equalisation of income in 1974/75 was that the distribution of land cultivated in Palanpur was more equal in 1974/75 than in other years. This was mainly a result of a fall in the proportion of land owned by Thakurs due to a few land sales. Moreover, during this year tenancy and sharecropping practices displayed a clear pattern of large landowners leasing out their land to those with smaller landholdings. In subsequent years that pattern tended to be more mixed, including the more frequent observation of cases of 'reverse tenancy', where households with small holdings lease out to those with more land.

Between 1974/75 and 1983/84 inequality increased, although it remained lower than in 1957/58 and 1962/63. In 1983/84, new non-farm employment opportunities were becoming increasingly available, and were taken up mostly by villagers from economically better-off backgrounds. Due to a disappointing harvest in 1983/84, the income gaps further widened between those who derived some earnings from outside and those who were entirely dependent on agriculture. Moreover, there was wider dispersion within cultivator incomes, influenced by spending or inputs and the relative impact of the poor harvest.

In the most recent survey for which detailed income data are available, conducted in 2008/09, the Gini Index, at 0.379, was at its highest level compared to all other survey years. While changes in inequality across the early survey rounds can be understood in terms of the impact of expanding irrigation and green revolution technologies and methods on agricultural incomes, as well as the varying efforts or abilities of Palanpur households to secure improvements in agricultural productivity, the distribution of income in later survey rounds would appear to be more significantly influenced by the expanding rural non-farm sector. This follows straightforwardly from income decompositions that assess the contribution of different sources of income to overall income inequality. These suggest that, while in 1983/84 non-farm income accounted for only one-fifth of total overall income inequality, the comparable figure in 2008/09 was well over 50%.

Does non-farm diversification increase income inequality?

While the inequality decomposition findings described above are suggestive, it is important to understand that decompositions cannot point to the evolution of poverty and inequality absent the emergence of non-farm employment opportunities. While non-farm employment has clearly shaped the distribution of income in Palanpur, absent such non-farm incomes a different development dynamic would have taken hold in the village. Elbers and Lanjouw (2023) explore the distributional consequences of this counterfactual on the basis of model-based simulations. They develop a model that allows the impact of drivers of inequality in the village to be studied in isolation.

Elbers and Lanjouw (2023) construct and calibrate a simple model that resonates reasonably well with, and is able to track, actual Palanpur data. A key insight from their model derives from a series of counterfactual simulations that they perform. Decomposition exercises, as described above, could be interpreted to indicate that rising non-farm incomes

have been responsible for the rise in observed inequality in Palanpur between 1983/84 and 2008/09. What the counterfactual simulations performed by Elbers and Lanjouw (2023) suggest, however, is that inequality and poverty might actually have been even higher in the absence of non-farm diversification. They suggest that, given an underlying process of population growth – and the concomitant decline in per capita landholdings (especially after land-augmenting technological change had given way to labour-displacing technological change) – a village economy with little or no access to non-farm earnings opportunities might expect a particularly sharp increase in income inequality. The common perception in the literature is that non-farm income diversification is likely to be a force for rising inequality in rural areas. Instead, Elbers and Lanjouw (2023) suggest that if the diversification process resembles that observed in Palanpur – with the poorer segments also gaining access to the non-farm occupations -- then the diversification process may actually be acting as an important driver of poverty reduction and as a brake on further widening of inequality. It is interesting to note that this conclusion resonates with observations made by Epstein (1973) based on her classic study of two villages in Mandya District, Karnataka. In one village, Wangala, new access to irrigation resulted in increased commitment to cultivation. Longstanding social divisions remained cemented in place. In the neighbouring village of Dalena, access to new sources of irrigation remained limited and villagers instead diversified into a range of non-farm activities. In Dalena, diversification and greater interaction with the outside world led to a dilution of differentiation along caste lines and other social institutions. An important implication is that inequality increases in village might be expected to be larger in those villages that have not seen significant non-farm diversification over time.

Salience of caste diversity

The salience of caste diversity is often assessed via an examination of inequality between castes. Longstanding caste differences can point to durable inequalities in the distribution of power, and be a source of ethnic conflict and immobility. A common approach to measure the contribution of group differences to total inequality is to decompose inequality by population subgroups.[9] These decomposition procedures assess the extent to which group divisions contribute to inequality by giving everyone within a group the average income of that respective group, and then recalculating inequality in this distribution. The 'between-group share' of inequality is then calculated as the ratio of between-group inequality calculated in this manner, to overall inequality.

Decomposing inequality in this way provides useful insights and has been widely applied in multiple contexts. However, taking overall inequality as the benchmark against which to compare the between-group inequality could be regarded as rather extreme. After all, overall inequality can be understood as the between-group inequality that would occur if every

[9] As discussed above with reference to the study by Garcés Urzainqui and Mukhopadhyay (2018).

household in the population constituted a separate group. From this perspective, it is not surprising that, in cases where differences are being explored between a small set of groups, the contribution of observed between-group inequality to total inequality is typically rather low. Elbers *et al*. (2008) propose replacing total inequality in this calculation with the maximum between-group inequality that could occur given the observed distribution of income and the specific number and size of the groups actually being considered. This maximum would occur if the groups 'partitioned' the income distribution into non-overlapping segments of the income distribution. If, for example, two groups existed in a population, the maximum between-group inequality (as perceived by Elbers *et al*., 2008) would obtain if the two groups were entirely non-overlapping in their incomes, i.e. the richest member of the poorer group was still poorer than the poorest member of the richer group. Salience of group differences could then be assessed by comparing conventionally defined between-group inequality to this 'maximum' between-group inequality. Lanjouw and Rao (2011) and Himanshu *et al*. (2018) implement this alternative procedure. They separate Jatabs from the rest of the population and scrutinise the extent to which the village distribution of income is partitioned on the basis of these two groups.[10] Table 9 reveals that, in the first three survey years (up to 1974/75), observed between-group inequality represented a small fraction of the 'maximum' between-group inequality: there was little sense that the Jatabs 'stood apart' from the rest of the population. The partitioning index hovered around 11% in all three early rounds. However, by 1983/84, following the emergence and expansion of non-farm income opportunities in the village, the partitioning index proposed by Elbers *et al*. (2008) had sharply risen – suggesting that the distribution of income in that year was well over a third (36%) of the way to having become fully partitioned between the Jatabs at the bottom end of the distribution and the rest of the population.

As discussed above, the non-farm sector continued to expand after 1983/84, and the Jatabs become better able to access these new opportunities (albeit largely in casual wage non-farm employment). By 2008/09, the gap between them and the rest of the population was partially reversed and the Elbers *et al*. (2008) partitioning index had fallen back to 20%. With the expansion of non-farm employment after 1983/84, the forces that were driving the Jatabs as a group to fall ever further behind the rest of the population appeared to have attenuated, and at least some of the Jatab households had become able to improve their relative position in the village income distribution.

Table 9: Elbers *et al*. (2008) inequality decomposition (Jatabs versus rest of the village)

Year	Inequality decomposition		
	Overall inequality Theil L measure	Elbers *et al*. (2008) partitioning index (%)	Inequality contribution from 'classic' decomposition (%)
1957/58	0.190	11	5

[10] Lanjouw and Rao (2011) explore alternative ways in which to divide the village population into groups, but do not gain additional insights into the salience of group differences based on the Elbers *et al*. (2008) approach.

Year	Inequality decomposition		
	Overall inequality Theil L measure	Elbers *et al*. (2008) partitioning index (%)	Inequality contribution from 'classic' decomposition (%)
1962/63	0.213	10	5
1974/75	0.147	11	4
1983/84	0.186	36	16
2008/09	0.260	20	9

Note: The Elbers *et al*. (2008) partitioning index compares observed between-group inequality relative to the maximum possible between-group inequality given the actual group definitions sizes under consideration.

Source: Himanshu *et al*. (2018).

Intra- and inter-generational income mobility

As has been discussed above, population growth, technological change, and non-farm diversification have brought about far-reaching changes to Palanpur's economy and society, as well as to distributional outcomes in the village. The question arises as to whether, and to what extent, households have seen their relative positions in the income distribution change over time. One entry point into such analysis is to compare the relative position of the households in one period with their position in the second period. Himanshu *et al*. (2018) examine the movement of households across periods, from one rank position to another, where rankings are in terms of per capita income quintiles. Their focus is explicitly on changes in relative position in the income distribution.

Panel D in Table 10 illustrates the cross-tabulation of individual per capita income rankings between the two survey rounds of 1983/84 and 2008/09. The diagonal entries indicate the share of individuals that continued to be ranked in the same quintile in both rounds. Around 20% of those who belonged to the highest income quintile in 1983/84 remained in the highest quintile in 2008/09. There was higher mobility among the bottom quintiles, with only 8% of households in the lowest quintile for both 1983/84 and 2008/09.

Over the entire survey period since the 1950s, there is evidence of increasing mobility of households across income quintiles, with the share of households ranked in the same quintile between two rounds falling from 28% in 1957–1962 to 20% in 1983–2008. This is also accompanied by a decline in rigidity at the top with the share of households in the top quintile who managed to maintain their relative ranking in the village declining from 56% during 1957–1962, to 40% during 1962–1974 and 20% during 1983–2009 (Table 10). Among the factors that contributed to the decline in rigidity at the top were the decline in land holdings and the relatively weak role played by agriculture compared to the emergence and expansion of non-farm activities. Although access to non-farm jobs in Palanpur was uneven, with the relatively affluent and socially networked being more successful in finding regular, high-paying jobs, the spread of non-farm activities to lower-ranked households in more recent years did also allow at least some of those at the bottom of the ranking to improve their fortunes.

Table 10: Cross-tabulation by income quintiles

Panel A: 1957/58 and 1962/63								
		Quintiles of real per capita income in 1962/63					Households in 1962/63	Households in 1957/58
		1	2	3	4	5		
Quintiles of real per capita income in 1957/58	1	0.22	0.33	0.28	0.11	0.06	18	17
	2	0.33	0.38	0.19	0.00	0.10	21	19
	3	0.25	0.20	0.15	0.35	0.05	20	19
	4	0.18	0.09	0.23	0.23	0.27	22	18
	5	0.06	0.06	0.11	0.22	0.56	18	18
Households in 1962/63		21	21	19	18	20	99	91

Panel B: 1962/63 and 1974/75								
		Quintiles of real per capita income in 1974/75					Households in 1974/75	Households in 1962/63
		1	2	3	4	5		
Quintiles of real per capita income in 1962/63	1	0.16	0.21	0.11	0.32	0.21	19	19
	2	0.16	0.37	0.16	0.21	0.11	19	18
	3	0.19	0.19	0.23	0.19	0.19	26	21
	4	0.18	0.14	0.27	0.27	0.14	22	16
	5	0.25	0.05	0.25	0.05	0.40	20	15
Households in 1974/75		20	20	22	22	22	106	89

Panel C: 1974/75 and 1983/84								
		Quintiles of real per capita income in 1983/84					Households in 1983/84	Households in 1974/75
		1	2	3	4	5		
Quintiles of real per capita income in 1974/75	1	0.23	0.23	0.35	0.08	0.12	26	21
	2	0.30	0.19	0.22	0.19	0.11	27	21
	3	0.15	0.12	0.19	0.27	0.27	26	23
	4	0.08	0.28	0.12	0.28	0.24	25	21
	5	0.10	0.14	0.19	0.14	0.43	21	20
Households in 1983/84		22	25	25	26	27	125	106

Panel D: 1983/84 and 2008/09								
		Quintiles of real per capita income in 2008/09					Households in 2008/09	Households in 1983/84
		1	2	3	4	5		
Quintiles of real per capita income in 1983/84	1	0.08	0.35	0.23	0.23	0.12	26	18
	2	0.28	0.21	0.16	0.14	0.21	43	22
	3	0.20	0.12	0.27	0.17	0.24	41	22
	4	0.14	0.20	0.24	0.20	0.20	49	23
	5	0.08	0.18	0.20	0.34	0.20	50	22

Panel D: 1983/84 and 2008/09							
Households in 1983/84	33	42	46	46	42	209	107

Note 1. Each cell gives the share of number of individuals belonging to the quintile of the row year, and ranked according to the quintile of column year. Individuals are deemed to have the per capita income of their households.

Note 2. The total number of households matched between two rounds of the survey is less than the actual number of households. This is because some households migrate out, some die out, and others go missing from subsequent rounds of the survey.

Note 3. Households that are not present in the previous round of the survey are not included in the subsequent round of the survey.

Note 4. To take into account splitting of households, all the split households are matched with the ranking of their original non-split households in the previous round.

Source: Himanshu *et al*. (2018).

A further, unique feature of the Palanpur study is its ability to also offer a window on mobility patterns across generations. As data are available for all the individuals and households over six decades, it is possible to track changes in the ranking of households over generations. A large body of literature exists that studies what is called 'the intergenerational elasticity in income', which captures the strength of the association of income across generations (Corak, 2013). For example, an intergenerational elasticity of 0.6 means that a 1% higher father's income is associated with a 0.6% higher income for the son. In other words, a higher elasticity means a stronger correspondence between a father's income and that of his son, therefore implying, in this sense, less mobility. Corak (2013) has introduced the idea of 'the Great Gatsby Curve', which plots the relationship between the intergenerational elasticity of income and a cross-sectional measure of income inequality, such as the Gini coefficient. At a cross-country level, the Gatsby Curve shows that countries with high levels of inequality at a given point in time are associated with lower intergenerational mobility (a higher intergenerational elasticity of income) in that country.

Himanshu *et al*. (2018) enquire into the income mobility across generations in Palanpur. The long period of surveys covering income data for 1957/58 to 2008/09 allows them to not only look at the father–son intergenerational income elasticity over one generation, but also to assess *changes* in this elasticity over two generations. Himanshu *et al*. (2018) calculate the intergenerational elasticity in income for two periods, 1957/58–1983/84 and 1983/84–2008/09, each with a gap of 25 years. For each period they identify father–son pairs, where sons in the latter period belong to the age group 25–35 years. The per capita income of the household in the initial period is assumed to be the father's income. In other words, if the son lies in the working age group of 25–35 years and is part of the household in 2008/09, then the per capita income of the household in 1983/84 is considered as his father's income. Table 11 reports the estimated elasticities.

Table 11: Intergenerational elasticity in income and inequality (1958–2009)

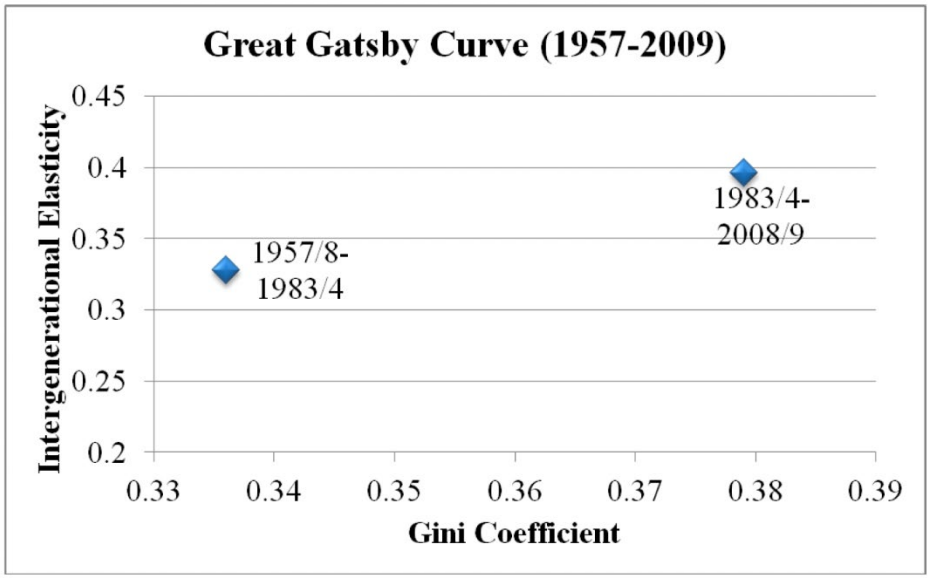
	1958–1984 (1)	1984–2009 (2)	1958–1974 (1984) (3)	1974(1983)–2009 (4)
Number of observations (in the age group 25–35 years)	58	100	58	100
Gini coefficient in terminal year	0.336	0.379	0.235	0.379
Intergenerational elasticity	0.328	0.396	0.294	0.441

Note: Columns 3 and 4 represent the elasticity replacing the income for 1983/84 by an average of 1974/75 and 1983/84 because 1974/75 was a good agricultural year and 1983/84 was a bad year.

Source: Himanshu *et al*. (2018).

Consistent with Corak's (2006) observation of higher income inequality being associated with a higher intergenerational income elasticity (and thus lower mobility), Himanshu *et al*. (2018) observe an increase in intergenerational elasticity over time, along with a rise in overall inequality as measured by the Gini coefficient (Figure 9).

Figure 9: Intergenerational income mobility and inequality



Source: Himanshu *et al*. (2018).

The persistence of positions by income is presumably influenced strongly by inheritance passed on to successive generations, notably land in the case of an agrarian economy like Palanpur. However, the emergence of the non-farm sector as an alternative source of income has generated an opportunity for some households to break the rigidities in income and wealth transmission. As noted earlier, the nature of non-farm diversification has not only varied across caste and income strata but there has also been an evolution in the extent to which households from different groups have been able to take advantage of non-farm occupations, as well in the nature of the non-farm jobs that have become available. Jatabs and households at the lower end of the income strata have now gained access to some non-

farm activities. However, these are mostly of a casual nature. It is important to recognise, moreover, that although non-farm employment has become accessible to a wider population, the importance of networks and assets has not disappeared and may well have increased. In particular, access to regular, well-paying, non-farm jobs remains concentrated among Thakur and other advantaged households who have better access to networks and can finance 'entrance fees' or bribes where these might be necessary (and, in a few cases, where education is also relevant). A finding of declining intergenerational mobility alongside higher intra-generational mobility is therefore not inconsistent. Broadly speaking, the new non-farm opportunities do open up possibilities for upward mobility, and within any group some people move to take these opportunities more quickly than others. However, higher income and social status increase the likelihood of obtaining the best non-farm jobs, with this effect becoming more important in overall structures as the number of non-farm opportunities rises.[11]

[11] Alesina *et al*. (2021) document similarly powerful forces of *persistence* in China across three generations crossing the Communist Revolution, the Cultural Revolution, and the subsequent economic growth episode post-1980, highlighting the importance of networks and social capital. The authors document that elites prior to the revolution, whose privileged positions were systematically and comprehensively dismantled over the following 30 years, have re-emerged as elites in present-day China.

5 The distributional impact of Covid-19 in Palanpur and Alabujanahalli

We turn now to an interim assessment of the impact of Covid-19 on distributional outcomes in both Palanpur and in the village of Alabujanahalli, based on a village study undertaken by Satheesha Bannur in Mandya District, Karnataka (Bannur, 2023). In Alabujanahalli, as in Palanpur, the years leading up to the Covid-19 outbreak had seen an ongoing process of structural transformation out of agriculture and into the non-farm sector. This process has shaped the impact of Covid-19 on distributional outcomes and was, subsequently, also shaped by the pandemic.

Alabujanahalli

Alabujanahalli is located in the Mandya District of southern Karnataka. It was studied during three-time points: 2008/09, 2018/19, and 2022 (Bannur, 2023). In what follows we draw on Bannur (2023) to describe the recent experience of economic development in Alabujanahalli. We focus on structural transformation, distributional outcomes, and the impact of Covid-19.

In 2008/09, a census survey was conducted in the village by the Foundation for Agrarian Studies (FAS) as a part of its Project on Agrarian Relations in India. In 2018/19, the village was resurveyed. A household census, collecting information on demography, employment, and landholdings, was fielded. Subsequently, a sample of 102 households (from a total of 261) was surveyed and additional data related to the production of agriculture and allied activities, land holdings, tenancy, employment status, incomes and earnings, and asset ownership was collected. The village was again revisited during March and April 2022, with a view to understanding the impact of Covid-19 on the village economy.

Alabujanahalli is situated in a prosperous agricultural region, in one of the more developed districts in the Cauvery delta. The village-based study of Epstein (1962; 1973) documents how the construction of a dam across the Cauvery River in the 1930s brought prosperity to Mandya and subsequent agricultural intensification and economic development of the region. The village is closely integrated with the regional economy. The nearest town, K.M. Doddi, is located only 1.5km away, offering bus connectivity to all major cities. A railway station is located in the town of Maddur, 15km away. The cities of Mandya and Bangalore are situated at a distance of 25km and 95km, respectively, from the village. Public amenities, including a public school, Public Distribution System (PDS) shops, piped water, and a dairy unit, are all present in the village.

Despite the village's proximity to rural towns and cities, agriculture continues to dominate the economy of the village. In 2018/19, agriculture and allied activities accounted for about 67% of all primary employment in the village, while nearly 83% of households reported income from cultivation. Most of the village land is irrigated with water from canals that are linked to the Cauvery River. Landholdings are small, but landlessness is also rare. The major crops grown in the village are paddy and sugarcane with ragi (finger millet) grown in the

summer. Farmers are mainly owner-cultivators, reliant on migrant workers for labour-intensive tasks in cultivation.

There were 261 households in Alabujanahalli, with a total population of 1,194 in 2018/19. The major social groups in the village are the so-called 'Backward Classes' (BCs) and 'Scheduled Castes' (SCs). BCs accounted for 88.2% of the total population (Table 12). Among the BCs, most belong to the Vokkaliga cultivator community. Over the years, the Vokkaligas have emerged as a major landowning class in Karnataka, which provides them considerable political and economic power (Gupta, 2019; Kohli, 1987). The Vokkaligas have the highest per capita income in the village. More than 90% own land and about 60% of them are cultivators. The remaining BCs are comprised largely of the Besthar and Madavila castes, who jointly represent about 11% of the village population.

The second largest caste group in the village after Vokkaliga is the SC community called Adi Karnataka, comprising 11.3% of the population in 2018/19. The traditional occupation of this group was drum beating for festivals and marriages, but this is no longer practiced. Casual employment in agriculture is the major source of employment for the group within the village.

Table 12: Socioeconomic profile of Alabujanahalli, 2018/19

Location:	**Nearest town: K.M. Doddi (1.5km) Nearest railway station: Maddur (15km) District headquarter: Mandya (25km) Metropolitan city: Bangalore (95km)**	
	2008/09	**2018/19**
Number of households	243	261
Population	1,235	1,194
Average household size	5.1	4.6
Proportion of the population in different caste groups and their traditional occupation:		
1. BC	85.4	88.2
1.1 Vokkaliga (peasants)	72.0	77.2
1.2 Besthar (fisherman)	5.8	6.3
1.3 Madivala (washerman)	4.9	3.1
1.4 Other BCs	2.7	1.7
2. Other caste (Hindu)	0.3	0.6
3. Adi Karnataka (SC) (drum beating)	13.8	11.1
Proportion of landless households	18.5	16.1
Main economic activities:	Agriculture and allied activities, regular jobs outside the village	
Main crops grown:	Sugarcane, paddy, and finger millet	
Main public amenities:	Public school, bus stand, dairy unit, temples	
Major source of drinking water:	Piped (public supply)	

Note: The communities which are categorised under 'Other BC' are Barber, Thigala, and Lingayat.

Source: Bannur (2023).

Before the onset of the pandemic, the process of structural transformation was well underway in Alabujanahalli. Between 2008 and 2018/19 there were clear signs of diversification of employment toward the non-farm sector. Non-farm employment as a percentage of total employment grew from just under 20% to one-third. One of the distinctive features of employment diversification in Alabujanahalli was that regular salaried jobs accounted for the major source of employment in the non-farm sector.[12] Non-farm diversification mostly involved young individual members of households moving out of the village in search of better economic opportunities, even while retaining their family base in the village. Unlike Palanpur, the expansion of education in Alabujanahalli – particularly higher education – has played a key role in providing access to non-farm employment opportunities. Most of those in non-farm employment are educated at the secondary school or higher level.

Both Vokkligas and, in particular, SCs have benefitted from the expansion of non-farm opportunities. In general, the Vokkaliga were able to secure better-paying regular jobs in educational institutions and MNCs, most commonly in Bangalore. SC workers on the other hand tend to be employed in low-skilled jobs such as security guards, drivers, suppliers in bar, and sales workers in textiles. This employment is typically accessed on a daily commuting basis. Education has also been important for SCs in accessing non-farm employment opportunities.

The period since 2008 has also seen an intensification of agriculture in Alabujanahalli. Cropping patterns have continued to shift to high-value sugarcane, and yields for this crop have also risen. However, the rise in yields has not translated into significant growth of cultivation income in real terms due to the rise in the cost of cultivation, as well as inflation.

Overall per capita incomes in Alabujanahalli rose between 2008/09 and 2018/19. This growth was not associated with a fall in the headcount rate of poverty, however. In fact, the incidence of poverty in the village rose from 27.6% to 33.6% during this period. Among the village caste groups, only the SCs experienced a fall in poverty. As noted above, the SCs had diversified significantly toward the non-farm sector between 2008 and 2018/19. This allowed them to achieve a measure of upward mobility relative to the other communities. While they had been highly represented among the poorest in the village in 2008, this was markedly less so by 2018/19. Although the Vokkaligas were historically the least poor in the village, they saw a marginal increase in poverty between 2008/09 and 2018/19. This was due to the particularly slow growth of real income from cultivation. Thus, while per capita incomes grew in Alabujanahalli, those who were heavily involved in agriculture saw little growth and even some decline. Among the poor, some (the SCs) saw their incomes rise and levels of poverty fall.

[12] A worker is defined to be in regular employment if she or he received salary or wages on a monthly basis rather than on a daily basis.

The particular nature of economic growth in Alabujanahalli between 2008 and 2018/19 was associated not only with rising poverty but also with declining inequality. The Gini coefficient fell from 0.487 to 0.407. This pattern of rising income, rising poverty, and declining inequality, while unusual, can be understood in terms of the differing trajectories of farm versus non-farm incomes and the particular distribution of those incomes among village households during this period. Again, as was seen earlier in the case of Palanpur, the expansion of non-farm employment was associated with lower inequality, contrary to what is often assumed.

The overall picture that emerges from the 2008/09 and 2018/19 surveys is that Alabujanahalli was on a positive development trajectory, with structural transformation gaining momentum and benefiting one of the most vulnerable groups in the village. Non-farm diversification was associated with a rise in per capita incomes, and falling income inequality in the village, as well as better human development indicators, in particular rising educational levels. Even so, agriculture remained a major source of livelihood and cultivation was also seeing intensification.

Covid-19

The onset of Covid-19 sharply reversed this process of structural transformation in Alabujanahalli, with a significant shifting of the workforce back to agriculture. This process was associated with a sharp fall in per capita incomes and a considerable rise in poverty and inequality. A particular feature of the Covid-19 pandemic in India relates to the country's particularly strict nationwide lockdowns, aimed at preventing the spread of the virus. According to the respondents from Alabujanahalli, Covid-19 lockdowns – especially the first lockdown, which lasted from 24 March to 31 May 2020 – were strictly enforced, significantly affecting mobility within and outside the village. People were frightened and went out only to buy essential goods and for important work. Due to the fear of infection, many farmers stopped hiring labourers for cultivation, turning instead to family labour.

During the lockdowns, Accredited Social Health Activists (ASHAs)[13] visited the village regularly to generate awareness among the people regarding Covid-19. According to the official records supplied by the Anganwadi teacher in the village, there were 26 Covid-19 cases in Alabujanahalli, including two deaths. It was discovered during the survey, however, that many more villagers fell ill, especially during the second wave in April 2021. However, rather than doing tests, villagers treated common symptoms like cough, cold, and fever with home remedies. The village had no government primary health centre, and the nearest one in K.M. Doddi was often crowded. Only a handful of villagers could afford to visit the private multi-specialisation hospital in K.M. Doddi.

[13] ASHAs are community health workers under the National Rural Health Mission of the Government of India. Along with auxiliary nurse midwives and Anganwadi (childcare) workers, they are among India's frontline health workers (see Niyati and Mandels (2020) for details).

Farmers managed to undertake agricultural operations during the lockdowns. When the first lockdown was announced, sugarcane harvesting was almost completed and transplanting of summer paddy was underway in the village. As mentioned above many of the labour-intensive tasks in cultivation were historically performed by seasonal migrant workers from outside Alabujanahalli. Telephone interviews conducted by the FAS on 31 March and 1 April 2020 found that 60% of migrant workers had already left the village when the lockdown was announced. The remaining 40% were sheltered in the village. When the sugarcane factory opened in July, Covid-19-related travel restrictions were in force. Even though the factory arranged some transportation facilities to bring the migrant workers back, the numbers were insufficient to meet labour demand in the village. This delayed the harvesting of the cane that was ready to be cut.

Even though agricultural operations and production were only moderately affected by the lockdown, there were several other ways in which agriculture was impacted. First, the costs of cultivation for all major crops rose sharply. This was largely driven by the rise in the cost of fertiliser, manure, and seed (especially in the case of sugarcane). Second, in Alabujanahalli dairying and sericulture are major supplementary sources of income and these two activities were also severely disrupted by the pandemic.

Beyond agriculture, the impact of the pandemic was particularly severe on the non-farm sector. All economic activities were suspended during the lockdowns, resulting in a loss of employment and the return of many workers to the village, in particular those who had previously migrated to Bangalore. Between 2018/19 and the first lockdown in March 2020, the share of non-farm workers in the total workforce declined from 32.4% to 12.6% for men – a 20 percentage point decline. Compared to men, loss of non-farm employment was marginally higher among women – a decline of 22.5 percentage points. In 2018/19, 23.6% of all workers were employed in regular non-farm jobs and this share declined to 8.7% during the first lockdown in 2020, indicating the vulnerability of the workforce engaged in regular sector jobs but without job security. At the same time, those workers with positions in the government and corporate sectors did not lose their jobs.

Non-farm employment started recovering only after the lifting of lockdown restrictions from June 2021 onwards, with 70% of workers returning to their pre-lockdown jobs. This suggests that the majority of workers in the non-farm sector were out of work during the lockdown periods. However, when the economy started reviving, particularly after the second lockdown was lifted, most were called back to their previous jobs. By the time of the follow-up survey in April and May 2022, the share of non-farm employment had risen to 24.6%. This figure was still less than the pre-lockdown share of 33.0% (Table 13).

Table 13: Distribution of population by activity status and sex, 15 years and above, Alabujanahalli

	2008/09		2018/19		1st lockdown, 2020		2nd lockdown, 2021		Current, 2022	
	M	F	M	F	M	F	M	F	M	F
Agriculture	326	122	286	95	305	146	302	145	292	149
Self-employed	271	63	243	54	275	117	271	118	263	117
Casual labour	55	59	43	41	30	29	31	27	29	32
Non-agriculture	73	28	137	50	44	20	56	19	99	45
Self-employed	29	9	35	8	8	4	14	4	19	5
Casual labour	6	4	7	4	4	3	5	2	10	2
Regular workers	38	15	95	38	32	13	37	13	70	38
Unemployed	0	0	0	1	49	11	39	11	17	6
Not in labour force	88	338	77	346	72	334	73	336	62	311
Students	63	49	32	49	43	66	43	67	37	51
Domestic work	1	257	1	240	10	221	11	221	3	211
All persons	487	488	500	492	470	511	470	511	470	511
All workers	399	150	423	145	349	166	358	164	391	194
Unemployment rate	0.0	0.0	0.0	0.2	10.4	2.1	8.3	2.1	3.6	1.2
Non-farm workers as % of all workers	18.3	18.7	32.4	34.5	12.6	12.0	15.6	11.6	25.3	23.2

Source: Bannur (2023).

In Alabujanahalli, the socially and economically weaker sections of society were hit particularly hard by Covid-19. Among the SCs, 40% of the workforce (31 workers out of a total of 77) were employed in the non-farm sector in 2018/19. This share declined to 26.5% during the first lockdown.

Alabujanahalli experienced a sharp fall in average per capita annual household income between 2018/19 and 2020/21 (the Covid-19 year), which represents a decline of 54.7%. The drop in household income was much greater among the poorer segments of the population, in particular landless and households belonging to the bottom 40% of the income distribution. The average annual per capita income of the landless and the bottom 40% fell more than 70% during the Covid-19 year. Across different social groups, the loss of income fell more than 50% for SCs and Vokkaliga. (Table 14).

Table 14: Average annual per capita income (INR) (at 2008/09 prices) across different socioeconomic groups and change in income (in percent)

	Average per capita income			% change between:	
	2008/09	2018/19	2020/21	2008/09 to 2018/19	2018/19 to 2020/21
Social group					
SC	9,337	23,496	11,449	151.7	-51.3

	Average per capita income			% change between:	
Vokkaliga	20,182	31,334	14,376	55.3	-54.1
Besthar	11,908	13,361	9,367	12.2	-29.9
Madivala	12,400	8,321	4,731	-32.9	-43.1
Land class					
Landless	14,372	29,420	7,495	104.7	-74.5
Marginal	11,560	21,681	10,650	87.6	-50.9
Small	14,304	29,377	17,450	105.4	-40.6
Semi-medium	25,012	31,070	17,296	24.2	-44.3
Medium	65,549	118,428	49,662	80.7	-58.1
Income group					
Bottom 40%	5,865	11,965	3,164	104.0	-73.6
Middle 50%	16,706	30,125	13,388	80.3	-55.6
Top 10%	71,879	89,980	51,028	25.2	-43.3
All	17,588	28,591	12,959	62.6	-54.7

Note: Landless = 0 to 0.025 acres, marginal = 0.025 to 2.471 acres, small = 2.471 to 4.942 acres, semi-medium = 4.942 to 9.884 acres, medium = 9.884 to 24.710 acres.

Source: Bannur (2023).

While the impact of the pandemic on cultivation and agricultural employment was relatively moderate, incomes from crop production did register a fall during the Covid-19 year. An important reason was the rise in cultivation costs, in particular the price of fertilisers. In addition, the productivity of sugarcane, especially from planted sugarcane, declined. Among possible explanations for the decline in productivity reported by farmers was the application of high amounts of chemical fertiliser, which is essential for efficient yield but which had resulted in low fertility of the land. Moreover, the use of pesticides as a replacement for weeding, a measure taken in response to the shortage of local workers, especially during the first phase of lockdown, which resulted in the burning of sugarcane roots and a decline in yield. Furthermore, a shortage of migrant workers affected the timely harvest of sugarcane and resulted in further declines in yield. Finally, the rise in the consumer price index for rural labour (CPI-RL) and unchanged sale prices for produce further squeezed the real income from crop production. Between 2018/19 and 2020/21, the CPI-RL rose by 1.2 times while the sale prices of all crops remained largely unchanged

Falling per capita incomes resulted in a significant rise in poverty during the Covid-19 period, from 33.6% to 83.1% between 2018/19 and 2020/21 (Table 15).

Table 15: Poverty rates in Alabujanahalli

	2008/09	2018/19	2020/21
CPI-RL at 2008/09 prices	100	222	259
Tendulkar poverty line, Karnataka (at 2008/09 prices) (annual per capita, INR)	7,468	16,613	19,379

	2008/09	2018/19	2020/21
Mean per capita income (annual per capita, INR)	17,588	28,591	12,959
Head count index	27.6	33.6	83.1
Squared poverty gap index	6.5	6.0	36.3

Notes: The poverty line used here is based on the Tendulkar poverty line for rural Karnataka in 2011/12 and adjusted for 2008/09 prices using the CPI-RL.

Source: Bannur (2023).

The reversal of structural transformation in Alabujanahalli during the Covid-19 period also resulted in a rise in inequality in the village Gini coefficient from 0.407 to 0.502 between 2018/19 and 2020/21. As we have seen, employment and incomes from the non-farm sector were hit hard by the lockdowns and the impact was higher on asset-poor groups compared to those who were better off. At the same time, the income loss from cultivation was relatively low compared to other sources. As a result, between 2018/19 and 2020/21 the share of income from cultivation in total household income increased sharply and the contribution of crop income to overall inequality rose from 24.6% to 34.6%.

While not perfect and far from comprehensive, government intervention and financial assistance contributed significantly to softening the blow of Covid-19 in Alabujanahalli (Table 16). Households reported that the PDS was an important source of food grain during the lockdown, particularly during the first lockdown in April 2020. More than 95% of eligible households[14] across all the caste groups received an additional allocation of food grains announced under the Pradhan Mantri Garib Kalyan Ann Yojana during the lockdown, mainly rice and finger millet, which was distributed through PDS. The central government announced a transfer of INR 500 per month to all women with Pradhan Mantri Jan Dhan Yojan (PMJDY) accounts during the first lockdown period (April to June 2020). While in Alabujanahalli just under 40% of households were PMJDY account holders, only half of them received the prescribed amount for three months. The vast majority of eligible farm households (households that hold cultivable land up to 2 hectares) received a transfer amounting to INR 6,000 in the Covid-19 year of 2020/21 under the PM-KISAN scheme.

In May 2020, the Government of Karnataka announced a relief package worth INR 1,610 crore for those who lost their livelihood due to the pandemic. The package provided one-time compensation to workers from various sectors, including farmers who suffered crop loss and workers from unorganised sectors such as washermen, barbers, construction workers, taxi drivers, and other workers. To claim relief, workers had to register in the

[14] BPL (Below Poverty Line) and AAY (Antyoday Anna Yojna) card holders were entitled to additional food grain per month.

government portal. Only 20% of households in Alabujanahalli received a cash transfer from the state government.[15]

In Alabujanahalli, just over 50% of households were eligible for various types of pension and, among them, three-quarters received a pension regularly during the months of lockdown. Among the SC households, however, only 57% received a regular pension during the lockdown period, while the corresponding figure for the Vokkaliga was 82%. One reason for this difference in receiving pensions could be the better networks and contacts of Vokkaligas at the administrative level compared to SCs.

The implementation of MGNREGA has been relatively poor in Alabujanahalli. Conditional on at least one member of the household working under MGNREGA, a household received an average of 36 days of employment during the Covid-19 year of 2020/21. This was strikingly lower than the 100 days of wage employment guaranteed to rural households under MGNREGA. About 56% of households indicated that the 'works opened were not adequate' was the reason for not getting as much work as they wanted under the scheme. Three major hurdles to the implementation of MGNREGA in the village were noted. First, members of the Vokkaliga caste exerted control over the Gram Panchayat and successfully lobbied officials to stop the allocation of work under MGNREGA, especially during periods of heavy demand for agricultural labour. Second, it appears that many of the civil construction and other jobs that could be implemented under MGNREGA were being awarded to private contractors. Third, the non-availability of common land – with more than 90% of the land in the village owned by the Vokkaliga community – was also an important hurdle to undertaking MGNREGA work in Alabujanahalli.

Table 16: Access to various social safety nets

	SCs	Besthar	Madivala	Vokkaliga	All
Access to PDS					
% of households that received extra grain during the lockdown	97.4	100	100	95.5	
Pension					
% of households receiving their pension regularly during the lockdown	57.1	81.8	75.0	82.0	76.8
PM-KISAN					
% of eligible households	32.4	42.9	30.0	73.0	
% of households that received the cash transfer during the lockdown	100	100	100	92.8	
PMJDY					
% with a PMJDY account	36.8	23.8	40.0	39.1	
% of households that received the cash transfer during the lockdown	50.0	80.0	75.0	48.2	
Other Covid-19 relief transfers					

[15] It is important to mention that we have no information overall how many households in the village were eligible for this transfer.

	SCs	Besthar	Madivala	Vokkaliga	All
% of households that received the cash transfer from the state government during the lockdown	15.8	9.5	20.0	23.3	

Source: Bannur (2023).

To cope with the loss of employment and earnings during the pandemic, about 20% of Alabujanahalli households sold some type of asset. The most common asset sold was livestock (50%), followed by jewellery (44.6%). The major reason reported by households for selling assets was to meet the food, health, and daily expenses of households during the Covid-19 period.

About half of all households in Alabujanahalli resorted to borrowing during the lockdown. More than two-thirds of households reported that the main purpose of the loan was to meet daily household expenses, in particular food.

With the end of lockdowns and the subsiding of the pandemic, agricultural and allied activities resumed in full swing in the village. Labour shortages have ended and the sale prices of major crops in Alabujanahalli have improved relative to the Covid-19 period. Households that were compelled to halt sericulture during the lockdown due to low prices resumed the activity again once cocoon prices recovered. However, farmers did indicate that rising cultivation costs remained a looming cloud on the horizon.

The recovery of non-farm employment in Alabujanahalli has been less stellar. In April 2022, 24.6% of the total workforce was employed in the non-farm sector, but the corresponding figure for 2018/19 was 33.0%. Encouragingly, 70% of regular workers were able to return to their pre-Covid-19 employment. The recovery rate has been faster for SCs compared to Vokkaligas. The share of non-farm employment in total employment was 41% for SCs, which is twice the share of Vokkaliga (20.6%). In most cases, employment was accessed through commuting from the village. A possible reason for the slower recovery among Vokkaligas compared to SCs could be the nature of accessing non-farm jobs. While a majority of SC workers commute daily to nearby towns for jobs, Vokkaligas accessed non-farm employment through migration to bigger cities like Bangalore.

As the recovery is gaining momentum in Alabujanahalli, going forward one can expect opportunities outside the village to accelerate. Education will likely play an important role in accessing those opportunities. Villagers are well aware of this and they give the utmost priority to their children's education. Between 2008/09 and 2018/19, the expansion of education (in particular, higher education) enabled the younger generation of Alabujanahalli to secure better-paying jobs in the non-farm sector. Moreover, well-connected road networks also helped in accessing employment outside the village.

The declining returns from agriculture may also hasten the movement of young workers out of agriculture in the future. Rising costs of cultivation are squeezing incomes from agriculture and contributing to rising uncertainty about future returns. Farmers are increasingly concerned that cultivation is not sufficient to protect livelihoods and that

opportunities outside the village will need to be pursued. At the same time, the Covid-19 experience has demonstrated the value of agriculture as a fallback occupation, and Alabujanahalli villagers are thus likely to continue to retain a strong connection to agriculture going forward.

Palanpur

In March and April 2022, a small re-survey was conducted in Palanpur. Its primary objectives were to understand the situation in the village after the pandemic and to enquire into the nature and extent of health consequences and the degree of disrupted economic activity. Although not as detailed as the surveys for 1983/84 and 2008/10, attempts were made to collect as much information as possible, so as to get an idea of the changes that had occurred in the village since the last survey of 2015 (Himanshu and Lanjouw, 2023).

Relative to 2015, the village in 2022 looked more prosperous; there were more pucca buildings and two-story houses, as well as an increase in the number of shops. A good number of motorcycles could be observed, and also a few cars. Tractors had further increased in number compared to 2015. Virtually all (adult) villagers seemed to have a smartphone with access to the internet. Younger residents were engaged in a variety of non-cultivation activities. Village lanes were largely concrete, and open but pucca brick drainage canals were seen throughout the village. One could also see small toilets built next to or alongside many houses – financed out of a subsidised government scheme – although many appeared to be unused.

At the time of the 2022 re-survey, 221 households resided in the village. While some households had moved out, the total number of resident households had not changed markedly since 2015, when there were 224 households in the village. The village population in 2022 was 1,342 residents, up from 1,299 in the 2015 survey. The trend of a declining rate of population growth has continued since the 2008 survey.

While the village, in general, appears to have become more prosperous over time, progress on socioeconomic indicators has been uneven. Overall literacy has risen in the village, largely due to an increase in literacy among females. Male literacy rates have remained stagnant since 2015 and, as a result, the gender wage gap in literacy in the village has come down. Variations are also observed across castes, with Thakur and Murao females recording significant increases in literacy rates and Jatab women seeing a decline.

Palanpur always had a primary school located in the village, although its functioning has fluctuated over the survey rounds. The school was upgraded to a lower middle school after 2012. As part of the upgrading process, additional classrooms and additional infrastructure were built adjacent to the existing primary school. However, by the time of the 2022 re-survey, the new infrastructure was crumbling and no longer in use. The village had 302 school-going students and 12 students attending tertiary schooling. Most of the students eventually leave the village in order to further their education.

There is a dearth of adequate, institutional healthcare service provision in Palanpur. In the event of serious illness requiring hospitalisation, villagers prefer to go beyond the village and, perhaps surprisingly, avail of private rather than government services. Within the village, the bulk of healthcare consultations are handled by private medical clinics, with treatments provided by doctors without formal qualifications. Currently, there are six private clinics in Palanpur treating villagers and prescribing medicines, four of which were established during the pandemic.

Palanpur in 2022 remains largely an agricultural economy. Despite the ongoing process of non-farm diversification, agriculture continues to play an important role in the village economy. Smallholder farming is the norm. In 2022, more than three-quarters of households own less than 2 acres of land, while 71 households are landless. Remarkably, many households report not cultivating (or operating) any of the land they own, while three-quarters of households cultivate less than half the land they own. At least half the households are net out-leasers (i.e. have leased out more land than they have leased in). At the same time, 44 households have positive net leased-in positions.

The major crops cultivated in Palanpur remain wheat, paddy, *mentha*, sugarcane, mustard, *urad*, and *bajra*. In recent years, sugarcane has been steadily replaced by other crops such as paddy and *mentha*, as a result of lower procurement prices and difficulties in harvesting and transport. *Urad* production has also fallen due to lower productivity. Over the years, paddy production has increased and has become the primary crop of most cultivating households in the *kharif* season. On average, wheat fetches a higher return per unit of land. In recent years farmers have also started experimenting with other crops such as peanuts, corn, and potatoes.

Though still important, the declining role played by agriculture in the village economy can be seen in terms of both incomes generated from non-agricultural activities and employment rates. Table 17 documents the primary distribution of employment for males and females in the village in 2022. Among the population in the 18–64 age range, 73% of males reported engaged in some form of remunerated employment with the percentage for females at only 6%. While this is not surprising, it does confirm that the status of women in the village has not changed much. Most of the women report engagement in domestic duties and taking care of livestock. This is productive in nature but is not counted as employment in official definitions. Some 42% of all workers reported working in agriculture, with a higher percentage among male workers. Compared to previous survey years, there has been an increase in wage labour and also regular employment, both public as well as private.

Table 17: Activity status by sex

Primary employment	Male	Female	Total
Cultivator	130	6	136
Wage labour	93	14	107
Self-employed, non-farm	32	2	34
Regular employment	40	2	42

Primary employment	Male	Female	Total
Out of labour force	109	378	487
Total	404	402	806

Source: Himanshu and Lanjouw (2023).

Given the low profitability of agriculture, cultivators often engage in wage labour to supplement their household income. Table 18 indicates the average income per month from different activities. These income figures are self-reported by the respondents and are not strictly comparable to the detailed incomes reported in section 4 above.

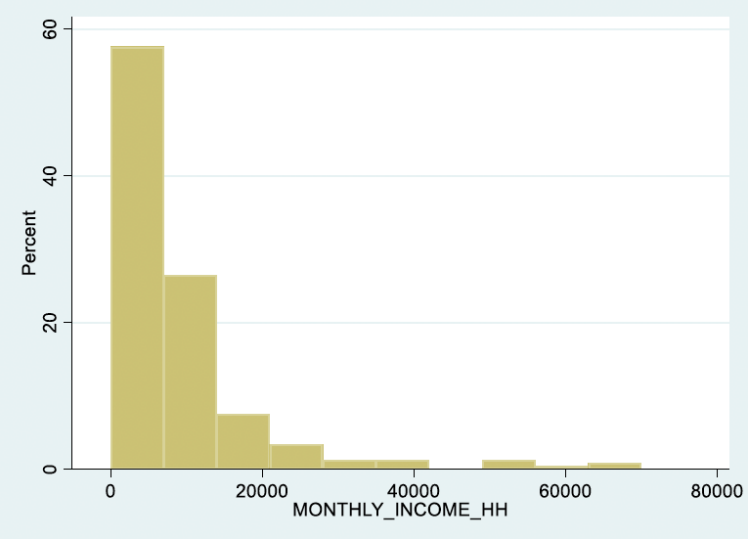
Table 18: Monthly income by employment status

Primary employment	Average monthly income (INR)
Cultivator	2,930
Wage labour	5,262
Self-employed, non-farm	8,029
Regular employment, non-farm	13,024
Total	5,382

Source: Himanshu and Lanjouw (2023).

Table 18 indicates that cultivation remains the activity with the lowest monthly income, while it is regular salaried workers who are at the top of the income hierarchy. Even wage workers manage to get an average monthly income that is considerably higher than that received by cultivators. Self-employment in non-farm activities is a mixed category with large variation across the income spectrum. Figure 10 reports the distribution of monthly incomes in the village. To provide some context here, the average daily income per household is INR 13,097 per month, while in per capita terms per capita monthly income in Palanpur is INR 2,923 per month. The monthly per capita income reported in the nationally representative Periodic Labour Force Survey of 2020/21 is INR 2,819 per month in rural areas. This suggests that, on average, the incomes of Palanpur residents are not very different from the average for rural India. Updating the Rangarajan committee poverty lines to 2021/22, the poverty line in 2021/22 is INR 1,444 per person per month. Based on this poverty line (and based on these self-reported household incomes), 42% of Palanpur villagers were poor by official Rangarajan poverty lines in 2022.

Figure 10: Percentage distribution if monthly income in the village



Source: Himanshu and Lanjouw (2023).

Unlike in urban areas, the Covid-19 pandemic did not receive much attention in rural areas during the first two months of 2020. It was only when a lockdown was announced in the last week of March 2020 that the entire country took the pandemic seriously. The lockdown of 2020 was very strictly enforced, although its enforcement in rural areas was dependent on the strength of an enforcement machinery that does vary across villages. Over the subsequent two years, Palanpur went through the different phases of the pandemic comprising multiple lockdowns and the ongoing spread of virus-led infections. Although there was not much of an official impact of the virus in the village, with only one death formally attributed to the pandemic, it is quite likely that several others would have been due to the virus but were not recorded or diagnosed as Covid-19 related.

There is no mistaking that the village economy was affected by the pandemic. The impact was primarily via the strict lockdown imposed by the government. While the lockdown was not rigidly enforced in India's villages, urban areas did see strict implementation. Given the resulting drop-off in transportation services and closure of non-farm employment opportunities outside the village, the lockdown therefore did also impact Palanpur's villagers. Table 19 presents various indicators of impact on the households as a result of the lockdown and disruption of economic activity due to the pandemic.

Table 19: Impact on households due to the pandemic

Impact	Percentage of households
Loss of job	37
Loss of a family member	1.1
Loss in wages/earnings	13
Loss in savings	63
Needed to borrow money to meet expenditures	31
Needed to sell assets to meet expenditures	2.5

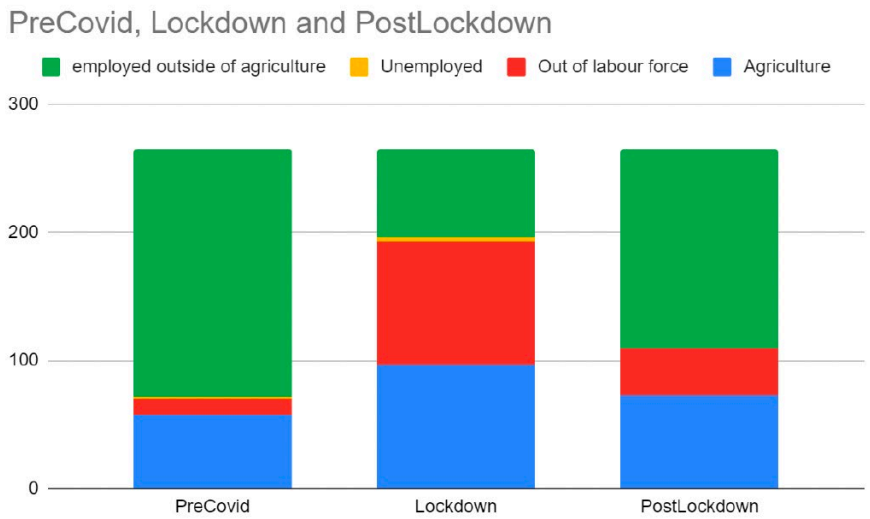
Source: Himanshu and Lanjouw (2023).

More than one-third of households (37%) reported having at least one member of the household lose a job. Almost two-thirds of households answered that they had experienced a loss in savings and 31% were forced to borrow to meet expenditures. While very few households (three) reported losing a family member to the pandemic, it is clear that the virus and the ensuing lockdown had a sizeable impact on the livelihoods of villagers. However, by the time of the 2022 re-survey, the situation in the village was slowly getting back to normal. Almost the entire village had been vaccinated, with Covishield being the primary vaccine used (accounting for around 96% of vaccinations).

One of the most pronounced effects of the pandemic in India was on the education system, which remained largely shut for over a year. It was only in the third quarter of 2021 that schools reopened following closure in the first lockdown of March 2020 and resumed in-person classes. In Palanpur, online education was offered to and taken up by only a tiny percentage of students. Despite the absence of formal education stretching up to a year and a half, the vast majority of students (235 out of the 243) reported in 2022 that they had entered their scheduled standard upon returning to school, as though they had experienced no gap in learning. These figures provide an important insight: the lack of access and insufficient digital infrastructure, combined with the elongated period of lockdown, means that education and skill formation for young children were severely affected. This has potentially long-term social and economic implications.

The direct and immediate impact of the lockdown on employment and the availability of jobs can be observed in Figure 11. The primary earner(s) of each household were asked questions as to their status before, during, and after the lockdown. Prior to the pandemic, the vast majority of the 265 respondents were employed outside of agriculture. The share of people who were unemployed or outside of the labour force was very low (5.7%). This figure rose to 37.7% during the lockdown, with many people losing their jobs, and remained at 13.6% even after the lockdown was eased, with the village economy unable to absorb the excess labour. As was also observed in Alabujanahalli, another striking feature of employment patterns in Palanpur was the return to agriculture as a fallback option, a phenomenon that is also clearly visible from the employment structure. When the lockdown started the percentage of respondents engaged in agriculture rose from 21.5% to 36.2%. After the easing of the lockdown, the share of people in agriculture remained elevated at 27.5%. As we saw in Alabujanahalli, it is clear that the non-agricultural sector did not bounce back sufficiently after the lockdown. Its share in employment fell from 72.8% to 58.8% between the start of the pandemic and post-lockdown.

Figure 11: Distribution of employment before and after pandemic



Source: Himanshu and Lanjouw (2023).

Another way to look at the changes in employment due to the pandemic is to analyse the changes in employment status of the main earning member of the household. While those in cultivation continued to remain in cultivation during the pandemic, more than one-quarter of wage labourers moved to the 'out of the labour force' category during the pandemic. Those who, prior to Covid-19, had been employed on a daily basis, mostly outside the village, found themselves unable to get any work due to the disruption in economic activity. A similar pattern is observed with regular workers who left regular employment to either join the ranks of wage labourers or dropped out of the labour force. While the situation broadly returned to the pre-pandemic situation after its end, the number of regular workers had declined while self-employed non-farm households increased in number.

Median earnings remained below the pre-pandemic level after the first lockdown was rolled back (October 2020 to March 2021). In Palanpur, those who are lower on the income ladder experienced a much less pronounced recovery of their earnings than those who were at the top. The pandemic and the lockdowns are likely to have resulted in a significant increase in income inequality.

In light of the stringent lockdown, widespread job losses, markets shutting down, and migrants returning to their native towns and villages, social safety nets became all-important in protecting lives and livelihoods in Palanpur. Several initiatives were introduced by the central government to lessen the burden on households. Prominent among them were the scheme to provide free food grains (rice and wheat) to households identified as beneficiary households as part of the National Food Security Act (NFSA).[16] The scheme, which was named Prime Minister Garib Kalyan Anna Yojana, provided food transfers over and above

[16] The NFSA was enacted in 2013 and was implemented from 2014 onwards. It provides 5kg of rice/wheat per person per month to selected households in rural and urban areas. While 75% of the rural population in the country is identified as beneficiary households, the rate is higher in rural Uttar Pradesh given the higher poverty ratio in Uttar Pradesh. As part of the scheme, households pay INR 2/kg for wheat and INR 3/kg for rice to access the monthly quota.

the regular entitlement of the households as part of NFSA. The Uttar Pradesh government further announced that it would not charge households for their regular entitlements of NFSA. In other words, households were entitled to 10kg of rice/wheat as part of the pandemic relief programme. This scheme, which was in operation from April 2020, remained in place at the time of the re-survey. Beyond the free foodgrain scheme, the government also announced a small cash transfer of INR 500 to all households who had PMJDY bank accounts.[17] There was also an effort to provide employment in the village itself through the existing rural employment guarantee scheme.[18] The survey asked detailed question on the nature of relief availed by the households and the range of benefits received by them. Households in Palanpur were asked specifics on which kinds of relief they received (if any), whether they held PDS cards,[19] if they were able to receive rations regularly in the past two years, and if any members had worked under MGNREGA. Table 20 provides the basic details of the nature of relief received by Palanpur households. Almost three-quarters of households received some form of benefit as part of the various schemes. Most were beneficiaries of the free foodgrain scheme. Almost half of households reported working in the MGNREGA scheme, although there was a decline in the percentage of households taking up MGNREGA work in 2021/22 relative to 2020/21. Other Direct Benefit Transfers (DBTs) were received by only a small percentage of households.

Table 20: Percentage of households benefiting from various social security/relief programmes

Scheme	Percentage of households receiving benefits
Any Covid-19 relief	76
Free ration	71
Free LPG	11
PM-KISAN DBT[20]	9
Other DBT	1.6
Holds PDS card	81
Regular PDS received	81
Household worked in MGNREGA (2020/21)	46
Household worked in MGNREGA (2021/22)	31

Source: Himanshu and Lanjouw (2023).

During the 2022 re-survey it was possible to trace 120 villagers who had migrated out of Palanpur in the pre-Covid-19 period and of which 66 returned to Palanpur in the wake of the lockdown in 2020. Of the 120 migrants, 44 reported having lost their job while 30 reported a lack of access to basic needs (such as food or shelter) when the lockdown was introduced.

[17] PMJDY bank accounts are no-frills accounts that provide access to banking and other financial services for excluded populations.

[18] MGNREGA is a scheme that provides a maximum of 100 days per year of employment on public works for households. It is based on an Act passed in the parliament. The wages in the scheme are the minimum wages prevailing in the state.

[19] PDS cards are beneficiary entitlement cards issued as part of the NFSA.

[20] PM-KISAN is a cash transfer programme that provides INR 6,000 per year to farmer households.

Thirty-two of the migrants returned to Palanpur in the March–June 2020 period, with most reporting having struggled to reach the village. Eight reported having had to walk back to Palanpur from their place of migration, while some managed to cycle for some distances. The rest used a combination of methods to return home.

However, despite the challenging (and, in many cases, inhumane) circumstances returning migrants had to face during the lockdown, migration out of Palanpur did not slow in the face of the pandemic. Between 2017 and 2019, 54 people migrated out of the village. Between 2020 and June of 2022, this number was only slightly lower, at 51 (with nine more telling the authors they planned to migrate soon). This reveals that, despite hardships, villagers are still willing – or perhaps compelled – to migrate in search of jobs. Most of the migrants who had returned to Palanpur expressed an interest to migrate out again and some in fact have already returned to their place of migration before the pandemic. Only a few reported an intention to remain in the village.

A definitive and complete assessment of the disruptions caused by the pandemic in Palanpur is unlikely to be available soon. This is partly because, other than the immediate short-run impacts on lives and livelihoods, the pandemic also brought in long-term changes. This is seen in terms of people's behaviour in regard to shocks and their attitude toward risk. One of the important observations from Palanpur is that, despite agriculture losing its relevance to the growing non-farm sector, it remains an important part of the coping mechanism for a majority of households – including those who have migrated out of the village. It appears that, despite the lockdown and associated disruptions, agriculture as a sector was less affected by the pandemic. But the pandemic did clearly impact the non-farm sector with both a decline in regular employment and the incomes from it. Some of these changes may reverse in the short to medium term, but at present recovery is not yet complete.

6 Concluding discussion

Monitoring the evolution of poverty and inequality in India is a task that warrants attention at the national, but also the subnational, level. We have argued in this paper that the economic trajectories of villages and urban neighbourhoods are likely to vary markedly across localities, and over time. As a result, welfare outcomes like poverty and inequality can also be expected to evolve in different ways and directions. It is a real challenge to document and track distributional outcomes at the local level, particularly when the aim is to develop a comprehensive, nationwide perspective. However, if unit record household survey data are combined with additional sources of information, such as the population census data or, increasingly, satellite-based data, then some progress can be made. The availability of high-resolution maps of local distributional outcome estimates has been found to be useful for geographic targeting purposes in many countries. In our description of a pilot exercise to construct a map of poverty and inequality in three states in India, we pointed to the presence of 'pockets' of poverty and of inequality. We noted further that in two – Orissa and West Bengal – there was evidence that poverty in the poorest communities was widely shared, and inequality was thus muted in these communities. In Andhra Pradesh, on the other hand, income inequality in poor communities was seen to be high. This suggests that differing forces drive distributional outcomes across the states, with 'elite capture' playing a possible role in communities that are both poor and highly unequal.

Moving from identification of communities that are poor or unequal toward a discussion of the processes and mechanisms that shape poverty and inequality presents additional challenges. Village studies can offer valuable insights. This is particularly the case if the village studies take a longitudinal perspective, and if they collect comparable and comprehensive data on economic outcomes. We have drawn, in this paper, on two such studies to explore several facets of poverty and inequality dynamics that could be overlooked in large-scale studies. While the two villages, Palanpur in Uttar Pradesh and Alabujanahalli in Karnataka, are clearly not 'representative' of India in any respect, they do invite reflection and can point to directions for further inquiry.

In both Palanpur and Alabujanahalli, a process of non-farm diversification out of agriculture has been an important driver of income growth and declining poverty. While non-farm diversification is an ongoing process, it is still far from fully displacing agriculture as a source of livelihood. In fact, agriculture in both villages has also seen significant intensification via increased mechanisation and the adoption of improved inputs. The interaction of these two sectors plays a key role in driving distributional outcomes. In the background, population growth, changing human development outcomes, the functioning of village institutions, and the impact of state and central government interventions all combine to further shape distributional outcomes. An important lesson from the village studies, as well as from the study of the New York City block described in Easterly *et al*. (2015), is that, as non-farm diversification progresses, the overall economic trajectory of a community

becomes more complex, less predictable, and subject to new and unanticipated forces of change.

While structural transformation was seen to contribute to higher incomes and lower poverty in Palanpur and Alabujanahalli, the impact on inequality is less easily established. In Palanpur, when agricultural intensification was the prime engine of village income growth, its impact on inequality was crucially dependent on whether the intensification arose from land-augmenting technical change or labour-displacing technological change. In the earlier survey years, when the former was the most important, inequality fell. Later, with ongoing mechanisation displacing labour, inequality rose. In Alabujanahalli, inequality was seen to fall when real agricultural incomes were falling as a result of rising costs of cultivation.

The question arises as to whether, and how, non-farm diversification increases income inequality. A crucial issue in this regard is whether there is rationing of the poor from access to, and incomes from, non-farm jobs. In Palanpur and Alabujanahalli, there is evidence that there was early capture of non-farm jobs by relatively rich and well-connected villagers. Evidence suggests that when non-farm diversification was just taking hold in Palanpur, the most disadvantaged caste – with little involvement in outside employment – became increasingly isolated and left-behind in income terms from the rest of the population. However, as the non-farm sector continued to expand the 'distributional incidence' of this expansion became increasingly pro-poor. Low caste households were increasingly able to find employment in the non-farm sector and, while they tend still to be concentrated in lower-return activities, further progress in this direction may be expected to dampen inequality-increasing pressure. Of course, when village elites succeed in monopolising access to the best paid and most desirable non-farm jobs this can also lead to further widening of the income distribution.

One interesting question to ask is how inequality at the local level would have evolved if the process of non-farm diversification had not occurred. An important consideration is the degree of pressure that population growth places on village landholdings. While inequality in Palanpur did increase considerably between 1983/84 and 2008/09, counterfactual simulation exercises with the Palanpur data suggest that inequality might well have increased further in the absence of non-farm diversification as population growth reduced per capita landholdings and made smallholder cultivation an increasingly precarious source of livelihood. The fact that we observe an increase in the incidence of 'reverse tenancy' in Palanpur, where small landowners lease out their land to larger landowners, suggests that income inequality could well rise sharply when agriculture remains the sole income source.

The evidence from both Palanpur and Alabujanahalli suggests that, alongside the ongoing process of structural transformation, relative income mobility – capturing how the income rankings of villagers change – has increased over time. Such income mobility suggests that long-run, 'permanent income' inequality is possibly lower than what is observed at any given moment in time. However, evidence in Palanpur suggests that, despite this increased intra-generational mobility, there is no suggestion of greater intergenerational mobility. Indeed, in

Palanpur a father's income is a better predictor of his son's income during the more recent survey period (between 1983/84 and 2008/09) than during the previous generation (between 1957/58 and 1983/84). This suggests that factors such as networks, social connections, and wealth continue to play a role in providing villagers with access to the most remunerative incomes and occupations. As inequality in Palanpur has risen, these family advantages seem to have become more valuable – a pattern that has been observed internationally and depicted in what has been called the 'Gatsby Curve'.

Non-farm diversification in both Palanpur and Alabujanahalli has been characterised by greater contact with the world beyond the village. To a considerable extent, villagers from both villages commute on a daily basis to nearby towns for work, retaining the village as their place of residence. This points to the important role played by rural towns and cities in determining distributional outcomes in rural areas. The economic 'health' of such towns, in terms of their ability to provide employment to the surrounding rural populations, is thus important. This raises the important point that an urban development strategy can play an important role in helping to alleviate rural poverty.

Recent re-surveys of Palanpur and Alabujanahalli offer a window on the impact of the Covid-19 pandemic on distributional outcomes in rural areas. In both villages, poverty and inequality increased during the Covid-19 episode, as economic activities slowed or even came to a complete halt. A key finding from both villages concerns the important 'fallback' function of agriculture as a source of livelihood when a massive employment shock occurs. In both villages, there was a significant inflow of villagers who had previously migrated away and who had lost their jobs as a result of the lockdowns aimed at containing the spread of the Covid-19 virus. As cultivation remained feasible (albeit less productive) during lockdowns, a significant number returned to the village and resumed involvement in agriculture. The value to villagers of diversifying their economic activities while retaining some involvement in agriculture has become very clear as a result of this recent experience.

As the lockdowns came to an end, and the Indian economy began recovering, villagers in Alabujanahalli and Palanpur also started to return to work, in many cases back to their previous occupations. However, non-farm employment opportunities have not returned to pre-pandemic levels. An interesting observation from Alabujanahalli is that employment opportunities in nearby locations became more quickly available, and were more easily accessed, than the relatively remunerative, but distant, jobs in Bangalore. This observation resonates with findings in a study by Gibson *et al*. (2017), which finds that rural poverty reduction is more responsive to growth in small towns than in large cities.

In sum, the picture of poverty and inequality in rural India is best seen as a mosaic built up from the individual, and often idiosyncratic, trajectories of distributional outcomes at the village level. While tracking all-India trends is clearly important, the individual pieces in the mosaic follow their own paths and merit individual attention. As structural transformation proceeds, there are grounds to expect those individual trajectories to display ever greater variation and volatility.

Toward the end of his life, T.N. Srinivasan wrote a paper in honour of Suresh Tendulkar – a leading figure in the analysis of poverty and inequality in India (Srinivasan, 2017). In this tribute, he calls for more research on income distribution, and he urges researchers to make creative use of multiple sources of data – emphasising in particular the combination of NSS data with population census data, and the merging of NSS central and state samples. He underscores the value of longitudinal data, which permit following individuals over time. While his remarks point to a potent research agenda based on secondary data, the themes he highlights are of clear relevance also at the village level. The study of distributional outcomes in India remains a challenging and stimulating field of inquiry.

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